

# Determinants of loan Repayment Performance:

A case study in the Addis Credit and Saving Institution, Addis Ababa,  
Ethiopia



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Submitted in Partial Fulfillment of the Requirements for the Degree of Master's  
in Management, Economics and Consumer Studies

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August, 2011



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## **Acknowledgment**

First my innumerable praise to the Almighty GOD for giving me the opportunity, capacity and guidance throughout my life.

Next, I am grateful to my supervisor professor Marrit Van den Berg for her valuable and constructive comment, suggestions and overall assistance from the early stage to the completion of the study. Without her support and guidance this paper wouldn't have materialized.

I am grateful to my parents, who were always with me in all aspects throughout my life. Further, my sincere thanks goes to my sister Debra Kassa, and her husband Mulugta Mengestu and my brothers Abel Kassa for those moral support and help during data collection. I would like to express my special appreciation to my friend Alemayehu Zewedie for helping and encouraging me morally.

I also benefited from brotherly help of Jonny Girma, who provided me with pertinent information of the econometric model and Akalu and Melkamu, who devoted their valuable time and energy to comment on the research.

I am indebted to Addis Credit and saving institution workers at each level, especially I highly appreciate Fekadu and Mekedes for their assistance during the data collection time. Without their cooperation the data would not have been collected in time. I would like to express my sincere appreciation to the clients of the institution and Ethiopian microfinance association for valuable support and cooperation.

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## **Acronyms**

AdCSI	Addis Credit and Saving Institution
AEMFI	Association of Ethiopian Microfinance Institutions
Birr	Ethiopian currency with the current exchange rate 1 Euro = 22 Birr
CDF	Cumulative Density Function
CGAP	Consultative Group to Assist the Poor
CSA	Central Statistics Agency
ETV	Ethiopian Television
MFI	Microfinance Institution
MIX	Microfinance Information Exchange
NBE	National Bank of Ethiopia
NGO	Non-Governmental Organization
TEVT	Technical and vocational training

## Abstract

*Addis Credit and saving institution (AdCSI) is a microfinance institution, which is engaged in development activities in Addis Ababa, Ethiopia. AdCSI mainly provides credit services to micro and small enterprise operators or potential operators and, low income people who are capable to work in income generating activities. Micro enterprises are important tools in poverty alleviation through employment creation and income generation for low income groups with limited opportunities. Its corporate objective is to promote micro and small enterprise to alleviate poverty and unemployment. As Ethiopia is a developing country and most of its people are living in poverty, this institution plays an important role in improving the livelihood of the low income people.*

*This study was conducted with the objective of analyzing and identifying the factors that influence the loan repayment performance of the beneficiaries of AdCSI. In order to achieve this objective, primarily data were collected from 200 randomly selected clients (100 defaulters and 100 non-defaulters) by using structured interview. Moreover secondary data were obtained from the record of AdCSI. For the data analysis, descriptive statistics including mean, frequency and percentages were used to describe the socio-economic characteristics of the borrowers. Moreover, t-test and chi-square analyses were employed to compare the defaulters and non-defaulters group. A binary logit model was used to analyze the socio-economic factors that influence loan repayment.*

*A total of twelve explanatory variables were included in the regression. Out of these, six variables were found to be significant for the probability of being defaulter. Age and five business types (baltina & petty market, kiosk & shop, services providing, weaving & tailoring and urban agriculture) were important in influencing loan repayment performance of the borrower. In addition, sex and business experience of the respondents were found to be significant determinants of loan repayment rate. Addis microfinance institution has a number of internal and external problems like shortage of loanable funds for further expansion, competition, and improper interference of third party in the decision of loan approval.*

# CHAPTER ONE

## I. Introduction

Microfinance is an important strategy to alleviating poverty in developing countries. It has grown in prominence since Muhammad Yunus started the Grameen Bank Project in 1976 (Cabraal, et al. 2006). The Grameen bank of Bangladesh, which was founded by Mohammad Yunus, was one of the first microfinance institutions (MFIs). Mohammad Yunus came upon a group of villagers that were unable to pay off their debt to a money collector. He found that he was able to lend them what they needed out of pocket. Moved by this situation, he started a lending service that avoid high interest rates that the traditional moneylenders charged. The moneylenders charge rates were as high as 100% per month on the loans they give.

Most microfinance institutions provide collateral-free small loans to low income households. These loans are generally expected to use for self-employment and income-generating activities (Kono and Takahashi, 2010). Microfinance can be a critical element of an effective poverty reduction strategy. Improved access and efficient provision of saving, credit and insurance facilities in particular can enable the poor to smooth their consumption, manage their risks better, build their assets gradually, develop their microenterprise, and enhance their income earning capacity. Thus microfinance helps to promote economic growth and development (ADB, 2000).

As Microfinance Institutions have become more efficient and increased their client based service, they have begun to expand their services through different product offerings such as micro-savings, flexible loan repayment, and insurance. The theories of joint liability contracts, progressive lending, frequent repayments, and flexible collateral adequately explain the high rates of repayment (Sengupta and Aubuchon, 2008).

Currently, there are a growing number of successful microfinance institutions worldwide. These are primarily local institutions that are reaching a significant number of poor people and becoming commercially viable (Evaluation office, 1999). Most of the microfinance institutions have development objectives like poverty alleviation. Therefore, Non-Governmental Organization (NGO) and donors have tended to focus on social programs and services for which they have particular expertise, including programs aimed at reducing poverty (Basu, et al. 2004).

## ***1.1. Statement of the problem***

There is a considerable emphasis on profit making (financial self sustainability) in current microfinance practice (Drake and Rhyne, 2002). The primary objective of MFIs is to provide financial services (credit and saving) to the poor in order to relieve financial constraints and help alleviate poverty. Each MFI tries to maximize its repayment performance, whether it is profit oriented or not. One indicator of effective MFIs is the loan repayment performance of the borrowers (Sengupta and Aubuchon, 2008). High repayment rates are -- associated with benefits both for the MFI and the borrowers (Godquin, 2004). If there is high repayment rate, the relationship between the MFI and their client will be good, as Bond and Rai (2009) argues that high repayment rate helps to obtain the next higher amount of loan and other financial services. In contrast, if there is low repayment rate, both the borrowers and the MFI will be affected. In this case the borrowers will not be able to obtain the next higher loan and the lender will also lose their clients.

Loans taken from credit institutions vary from country to country, region to region, sector to sector. But most credits of developing countries were found to share one common characteristic: suffer from a considerable amount of default rate (the amount of loans not collected on current and past due loans for the reference period) (Kashuliza 1993).

Improving repayment rates helps reduce the dependence of the MFIs on subsidies, which would improve sustainability. It is also argued that high repayment rates reflect the adequacy of MFIs' services to clients' needs (Godquin, 2004). In order to maintain sustainability of MFIs, one important thing is to identify the socio-economic and institutional factors which significantly affect the performance of loan repayment rates from different perspective.

There are many socio-economic and institutional factors influencing loan repayment rates in the MFIs. The main factors from the lender side are high-frequency of collections, tight controls, a good management of information system, loan officer incentives and good follow ups (Breth, 1999). In addition, the size and maturity of loan, interest rate charged by the lender and timing of loan disbursement have also an impact on the repayment rates (Oke, et al, 2007). The main factors from the borrower side include socio-economic characteristics such as, gender, educational level, marital status and household income level and peer pressure in group based schemes. Most MFIs in Ethiopia are experiencing default problems as can be observed from their declining repayment rates (Abafita, 2003). AdCSI is among the pioneer MFIs in the country providing services in and around the capital city, which also

experiences considerable problem of default. This study was aimed at examining the determinants of credit repayment performance in AdCSI.

## ***1.2. Objective of the study***

The general objective of the study is to analyze and identify the major determinants of loan repayment performance of the clients and to identify the major challenges of the institution.

## ***1.3. Research questions***

This study answers the following basic questions:

- What are the major socio-economic factors that influence loan repayment rate of the borrowers of AdCSI?
- What are the businesses and loan related factors that influence the repayment performance of the clients?
- What are the major problems and challenges faced by the borrowers and lenders in the repayment process in AdCSI?
- What are the internal and external challenges of AdCSI as an institution?

## ***1.4. Significance of the study***

MFIs are important for poverty reduction and creating employment opportunity especially in developing countries like Ethiopia. One of the key factors for profitability and sustainability of MFIs is the presence of good loan repayment rates. There are a number of socio –economic factors that affect the loan repayment rates. Analysing such factors and devising and appropriate solutions are essential to expand the activities of MFIs in a sustainable manner. Regarding AdCSI there has not been any empirical research conducted to identify the main causes of high default rates and to design future strategies. This study tries to provide information for a better understanding on the determinants of loan repayment performance of the AdCSI from both lender and borrowers side. The primary advantage of this study is to establish a knowledge base that enables to makes a sound decision and take corrective action. In addition, the information will be useful for policy makers, other lending institutions and stakeholders.

### ***1.5. Scope and limitation of the study***

There are many factors affecting sustainability of MFIs such as outreach, repayment performance, policy support, and using innovative features. But this study covered the repayment aspects of microfinance in the case of Addis MFI and focused on the socio-economic factors that are associated with repayment. Moreover, the income and other assets of the borrowers were not included in the study. The data were obtained from two services delivery posts out of the 116 delivery posts that AdCSI operates. The delivery posts were limited to two due to logistical limitations.

### ***1.6. Organization of the study***

The remaining parts of the thesis are organized as follows. The second chapter presents an overview of the development of microfinance in Ethiopia. The third chapter deals with the reviews of related literatures, where challenges of microfinance and the functioning of credit market in developing country are discussed. The fourth chapter includes data collection and methodology of the study. In the fifth chapter, the data are analyzed and the descriptive and regression results are discussed. The sixth chapter consists of the conclusion and recommendations.

# CHAPTER TWO

## II. Background

### *2.1. Microfinance in Ethiopia*

People living in poverty, like in Ethiopia, need a wide range of financial services for consumption smoothing, running their business and building assets. But due to collateral problems, poor people in most cases have no credit access from Banks. Microfinance offers financial services such as loans, savings and micro insurance to the poor people either in individual or in a group basis. Lending to the poor usually means that a lender will not be able to get any collateral to secure the loan (Njoroge, and Eff 2009). Moreover, Kimentyi et al. (1998) argues that the most difficult aspects of lending to poor clients are borrower selection and repayment enforcement.

In addition Dejene (2003) argues in his study 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. So the poor don't have access to the formal financial sources. Lack of access to institutional credit is one of the crucial factors impeding the poor from involving in operating small business and in particular and economic development in general.

The establishment of sustainable microfinance institutions that reach a large number of rural and urban poor, who are not served by the conventional financial institutions (such as the Commercial Banks) has been a prime component of the new development strategy of Ethiopia. Although the development of microfinance institutions in Ethiopia started very recently, the industry has shown a remarkable growth in terms of outreach, particularly in number of clients (Amha, 2000). Despite the obvious disadvantages of the microfinance industry in Ethiopia such as poor communication and infrastructure, weak legal systems, banking sector and lack of technical capacity as compared with other Sub-Saharan countries, the sector has been growing at a significant rate (Amha, 2000: MIX and CGAP, 2010).

As of 2005, about 1.2 million households, of which 38 percent were female headed, participated in the 26 microfinance institutions that operating in the country; they are receiving about 1.5 billion Birr<sup>1</sup> credit. There was about half a billion Birr savings per year. Within five years (2001- 2005), the industry grew by 263% in terms of number of clients, 479% in volume of loan portfolio and 206% in savings (Wolday,2005). By the end of 2008, the number of registered MFIs has reached 28, and they mobilized a total outstanding loan and saving of 4.7 billion and 1.7 billion birr respectively. 12 of the 28 MFIs operate in the capital city Addis Ababa and the rest are in the regional states (National Bank of Ethiopia, 2008).There is a fast growing both in terms of number of MFIs and outreach (Tesfay, 2009).

The success of microfinance activities in Ethiopia is particularly affected by the income of clients, which directly depends on crop harvest and the high risk due to drought for rural areas; also it depends on the effectiveness of the small business of borrowers who live in urban areas. The fluctuations of product prices, which are difficult to predict, also affect the performance of MFI (Amha, 2000).

## ***2.2. Addis Credit and Saving Institution (AdCSI)***

Addis Credit and saving Share Co. is one of the largest MFIs, which is operating in Addis Ababa, the capital city of Ethiopia. It was established in 2000 for the provision of financial services to active poor people in Addis Ababa for both micro business and small business operators. According to the revised proclamation No. 626/2009, the general objective of AdCSI is to collect deposits and extend credit to rural and urban farmers, as well as micro and small-scale rural and urban entrepreneurs. Its specific objectives are:

- Provision of credit and saving services to as many active poor as possible;
- Enhance the development of micro and small enterprises;
- Give priority to women in the provision of financial services;
- Enhance the culture of saving of the target group and the public at large;
- Create long term self employment in income generating activities;
- Assure financial and operational self sufficiency of the institution.

AdCSI has a three-level organizational structure, namely: head office, branch office and service delivery post (Appendix 1). The institution reaches its target groups through ten

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<sup>1</sup> Ethiopian currency with the current exchange rate 1 Euro = 22 Birr

branch offices established at sub-city level and 116 service delivery posts and 5 microbank branches. Each branch has its own auditor. In each service delivery post there are four employees: manager, loan officer, cashier and accountant. In some service delivery posts, there are two loan officers depending on the number of clients. The total number of employees in the institution is 576, out of which 123 are loan officers and the rest are support staffs. In 2010, there were 192,561 loan/credit clients; on average one loan officer supervises around 1500 loan clients (AdCSI, 2010).

Regarding the program norms, the average loan size differs according to the type of customer; for small enterprises it is about Birr 5,000 and for medium enterprises it is about Birr 50,000. A client obtains the next higher loan after the successful repayment of the first loan. Loan terms of AdCSI are established at different levels for different activities; maximum loan period of 3 years (36 months) for micro and small enterprise loan and 5 years (60 months) for housing loan. In order to cover its operational costs AdCSI charges 10% interest rate per annum on its loan amount. On the other hand, AdCSI pays 6% interest on the amount saved by its clients. The loan repayment rate of AdCSI was high but it started to decline since 2005 (Table 1)

Table 1: Performance of AdCSI since its establishment with respect to number of clients, average loan size and loan repayment collection (AdCSI, 2010).

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
No. of clients	1,521	5,321	7,429	4,500	21,523	26,944	10,858	18,294	27,255	31,487	37,429
Average loan size	1183	1432	1877	1532	2047	4066	4698	5347	6465	7369	8683
Repayment rate (%)	84.4	76.8	70.6	95.2	98.7	98.3	98.1	97.9	97.1	97.3	95.3

Sources: Profile of Addis Credit and saving institution (AdCSI 2010)

AdCSI provides saving service for both borrowers and non-borrowers. In the institution there are two types of saving services, namely, voluntry and compulsory saving. Passbook saving, time deposits, safe box saving and mobile saving (door to door saving mobilization services) are different forms of voluntry saving. On the other hand, compulsory saving is a saving that

loan clients are expected to make to become eligible for the loan services of the institution. It has two forms: 1. *Security saving* –is either to deposit 5% of its loan or deducted from his/her loan. 2. *Monthly saving* –clients are required to save 10 Birr per month together with their loan repayment. Except for time deposits, until December 2010, AdCSI pays an interest of 4.5% per annum for the amount mobilized through saving (AdCSI, 2010). However, in order to motivate the savings culture of the society, the institution is paying an interest rate of 6% for saving from January 2011. This is also one of the strategic plan of the institution for the coming five years.

### ***Requirement for loan clients***

AdCSI is providing loan for customers only who fulfill the following criteria: individuals above the age of 18 years, residence of Addis Ababa, either engaged or ready to engaged in micro and small scale business, has permanent working place, graduates of technical and vocational training (TEVT) in organized form of cooperatives or business group, license for business activities requiring loan size exceeding 5000 birr, business should be implemented in Addis Ababa and loan taken from the institution or similar institution should be settled before hand (AdCSI, 2002).

The main client screening mechanisms of the institutions are business profitability and experience, interest of doing business, and client's behavior. In order to know the behavior of clients specially for group lending, they were collected historical background from different stockholders such as Women, & Youth associations' and small scale enterprise. In addition, they checked the amount of money requested by the client is enough for doing business or not; they have to control under and over finance. AdCSI has been implemented different kinds of loan guarantee and property collateral mechanisms for the loan. The most commonly used are group guarantee (joint liability), salary of permanent employees of different organization, collateral (a house or vehicle), clients of the institution based on their savings or business enterprise can be used as a guarantee (AdCSI, 2010).

### ***Loan approval delegation***

The entry point for all loan services is the services delivery post. Loan of less than 5000 birr can be approved at this level. For loans from birr 5001 to 100,000, the service post makes the necessary business evaluation and writes its comment, which they then transfer to the branch. Based on all the documents and their judgment, the branch office will make the final decision

on the loan amount. Loan greater than 100,000 birr will be transferred to the head office, after making the necessary evaluation by both the service post and branch office; the loan approval will be given at this level. The following table 2 shows the maximum loan term with respect to loan size (AdCSI, 2010).

Table 2: The loan repayment time respect to loan size.

Loan size (in birr)	Mximum loan term (in month)
Up to 2000.00	Up to 18 months
2001.00 – 5000.00	Up to 24 months
Above 5000.00	Up to 36 months
Term loan	Up to 18 months (full amount)

Source: Profile of Addis Credit and Saving institution (AdCSI 2010)

### ***Motivation mechanisms***

There were mechanisms to motivate borrowers to repay on time. Some of the incentives are by informing them that they can access bigger loan, they can get loan in short time and by certifying active clients and acknowledging them in public. Besides, the institutions used to motivate loan officers by providing mobile phone allowance, transport allowance, scholarship, and yearly bonus and salary increment. Once a year, there was a competition between loan officers by the number of clients, the amount of outstanding loan, amount of saving and the repayment performance of specific service delivery center. Then the best loan officers are chosen and promoted and awarded. The institution gives training for loan officers once a year on the area of business evaluation, customer handling, saving mobilization, marketing and delinquent management, and on how to increase loan repayment.

# CHAPTER THREE

## III. Literature Review

### *3.1. Theoretical literature*

#### **3.1.1. The functioning of credit market in developing countries**

The fundamental feature that creates imperfection in credit markets is informational constraints. Ray (1998) stated that informational gap occur at two basic levels. First, there is lack of information regarding the use to which a loan will be put. Second, there is lack of information regarding the repayment decision of borrowers, as well as limited knowledge of the defaulter's subsequent needs and activities. All the important features of credit markets can be understood as responses to one or the other of these informational problems. In addition, Behrman and Srinivasan (1995) stated about the arising of agency problem in the functioning of credit market. This problem exists when there are different goals between creditors, shareholders and management. Financial intermediaries may reduce agency problem by monitoring borrowers and make wise investment choices.

Adverse selection and moral hazard are the two most important problems in the functioning of credit market; both are driving from the imperfect information. Kono and Takahashi (2010) also stated that imperfect information significantly increase default risks caused by adverse selection, moral hazard and strategic default. These are the theoretical micro foundations that have motivated the microfinance movement to fight poverty and promote growth by expanding access to credit. Billions of dollars of subsidies, and countless other resources, have been allocated to such efforts (Karlan and Zinman 2006). According to Armendariz and Morduch, (2010), both problems are made worse by the difficulty of enforcing contracts in regions with weak judicial systems.

The adverse selection occurs when the lender cannot easily determine which customers are likely to be more risky than others. Therefore, the lenders would like to charge riskier customers more than safer customers in order to compensate for the added probability of default. But the problem is the lender does not know who is who, and raising average interest rates for everyone often

drives safer customers out of the credit market (Armendariz and Morduch, 2010). Those who are willing to repay high interest rate may, on average, be worse risky; they are willing to borrow at high interest rates because they perceive their probability of repaying the loan to be low (stiglitz and wiss, 1981).

Moral hazard, arises because banks are unable to ensure that customers are making the full effort required for their investment projects to be successful. Moral hazard also arises when customers try to abscond with the bank's money (Armendariz and Morduch, 2010). In the absence of collateral, the lender and borrower do not have the same objectives because the borrower does not fully internalize the cost of project failure. Moreover the lender cannot stipulate perfectly how the borrower should run the project (Berhanu, 2005).

When the clients' borrow money from the lender, they were made promise to work hard and repay a loan. But, once the loan is disbursed the borrower might not be kept their promise and they were changing their behavior. On the other hand, during the activities the borrower's business was fails and he/she declared as a defaulter. In this case, a lender may not be able to know whether this failure was due to the uncontrollable factors or putting less effort on the business activities and borrowers mishandling of the loan.

Karlan and Zinman (2006) stated that better understandings of information asymmetries are critical for both lenders and policymakers. For instance, adverse selection problems should motivate policymakers and lenders to consider subsidies, loan guarantees, information coordination, and enhanced screening strategies. On the other hand, moral hazard problems should also motivate policymakers and lenders to consider legal reforms in the areas of liability and enhanced dynamic contracting schemes.

Armendariz and Morduch (2010) stated that the information asymmetry problems could potentially be eliminated if lenders had cheap ways to gather and evaluate information on their clients and to enforce contracts. However, lenders typically face relatively high transactions costs when working in poor communities since handling many small transactions is far more expensive than servicing one large transaction for a richer borrower. Another potential solution would be available if borrowers had marketable assets to offer as collateral. In this sense, any problem on the loan was covered by the borrower's asset. Thus, the lender could lend without

risk. But the starting point for microfinance is that new ways of delivering loans are needed precisely because borrowers are too poor to have much in the way of marketable assets. However, Behrman and Srinivasan (1995) stated that one way for the government to improve enforcement conditions for credit markets is to improve the possibilities for usable sources of collateral like implementation of land registration.

In addition, Mohiuddin (1993, cited by Berhanu, 2005) stated that the problem of moral hazard is solved in formal sector poverty lending by tying credit and saving together, by having a built-in mechanism for emergency fund to handle unforeseen shocks due to market failure and price changes, and by its emphasis on borrower-initiated lending to avoid loan use in risky unknown ventures where markets or input supplies are uncertain.

In order to overcome the problems associated with the lack of information, the group lending scheme takes an advantage of local information, peer support, and, if needed, peer pressure. The group members may have better information about individuals' efforts and/or abilities than the lender (Besley and Coate, 1995). Besides, the joint liability element generates individual incentives to screen (mitigating adverse selection), monitor each other (mitigating moral hazard) and enforces repayment (Tsfay, 2009). Moreover, dynamic incentives are also helps to generate information by starting with small loans and gradually increasing loan size as customers demonstrate reliability (Armendariz and Morduch, 2010).

### **3.1.2. Causes and the possible solutions of default**

Default on borrowed funds could be voluntary and involuntary. Involuntary default on borrowed funds could arise from unfavorable circumstances that may affect the ability of the borrower to repay. On the other hand, voluntary default, whereby a borrower does not repay even if he/she is able to do so (Stigliz and Weiss 1981). Therefore, the lender must understand the causes and the possible solutions of default. According to Norell, (2001) the most common reasons for the existence of defaults are the following: if the MFI is not serious on loan repayment, the borrowers are not willing to repay their loan; the MFI staffs are not responsible to shareholders to make a profit; clients' lives are often full of unpredictable crises, such as illness or death in the family; if loans are too large for the cash needs of the business, extra funds may go toward

personal use; and if loans are given without the proper evaluation of the business (Norell, 2001).

In order to achieve self-sufficiency, reducing default rate is very crucial for any MFIs. MFIs can take a number of actions to reduce default rate or the amount of arrears. Norell (2001) writes about some strategies for preventing or reducing default. Giving training to the clients prior to the transaction of each loan and financial incentives for the credit officers can be used to lower the default rates. Vento (2004) also defined the incentives from the promise to access to the subsequent loans is also helps to timely repayment and reducing default.

In addition, quick follow-up visits right after a missed payment and the formation of strong solidarity groups are also key to preventing high default rate. Limiting geographic scope reduces time and money wasted traveling from the office to clients' businesses. If credit officers have a specific geographic region, they can visit clients more often and it helps to develop relationships in their neighborhoods. Loan should be given to the borrowers who have been in business at least twelve months. Businesses are most likely to fail within the first year of operation. If the business existed for at least one year on the Owner's equity, the loan from MFI should be a lower risk than if the business is a start-up. Some MFIs use six months as a minimum, others three. The lower the number of months, the higher the risk for the MFI Norell (2001).

Norell agree on the four categories of client in the MFIs: (1) willing and able to repay, (2) willing but unable to repay, (3) unwilling but able to repay, and (4) unwilling and unable to repay. For very late loans (group loans over five weeks without payment, individual loans at sixty days without payment), credit officers should visit each late payer and the credit officer should classify the client into one of the above four categories of client. Based on the classification of borrowers, the loan officer should take corrective action. The appropriate action taken by loan officer in each category are: (1) having the credit officer and the supervisor visit the client's business, (2) rescheduling should be considered for clients with a very good excuse, (3) the institution can pursue legal action or inform the community and influential persons of clients' unwillingness to repay. Because religious and community leaders can push them to pay. Moreover, their names can be publicly posted and (4) following up on such groups is a

poor use of staff time. They are best referred to debt collectors or written off the loan (Norell, 2001).

### **3.1.3. Characteristics of Microfinance products**

Microfinance gives access to financial and non-financial services to low-income people wishing to access money for starting or developing income generation activities. Murray and Boros (2002) stated that the characteristics of microfinance products include: small amounts of loans and savings, short loan terms, payment schedules featuring frequent installments, easy access to the microfinance intermediary, simple application forms which are easy to complete, availability of repeat loans in higher amounts for clients who pay on time.

Credit is linked to savings, and in most cases loan sizes are related to the amount each borrower has saved. Saving can play a significant role in increasing levels of institutional sustainability and enhancing levels of outreach. Therefore, MFIs that offer savings facilities have a cheap source of funds for further lending to more sustainable operations. On the other side, voluntary saving builds the equity of poor households and protects them against unforeseen economic and personal crisis (AEMFI, 2010). Zeller (1996) also agree with the importance of saving to influence the repayment rate. It is expected that saving services offered by the program improves the repayment rate of the group. Saving may increase the financial discipline of group members and they can also serve as loan collateral.

The Microfinance Information Exchange (MIX) reports that African regional deposits made-up 54% of the MFIs gross loan portfolio. In contrast, voluntary savings represented merely 22% of the Ethiopian microfinance portfolios (AEMFI, 2010). In case of AdCSI, mobilizing voluntary saving is only 10% of their gross loan portfolio. Therefore, the microfinance sector in Ethiopia still depends on donated funds and has not been in a position to finance its future business by generating income operation (NBE, 2010).

One of the important requirements for the success of microfinance institutions is to create awareness among potential clients. The appropriate training has to be provided to new borrowers about loan utilization, loan terms and obligations. Statham (2008) stated that training from MFI to the clients can be broadly classified into two areas; group formation and business development. Group formation training is concerned with the group dynamics of the borrowers.

And business development training is aims to make the borrower's business more effective. In line with this, Admassie et al (2005) agree on the loan utilization and technical training should be given to improve the skill of potential and actual clients. Technical support is important to increase the productivity of borrowers

In addition to clients, it is important to provide training for loan officers. By giving various kinds of training for field officers, it will increase the skill and ability of the field officer. This leads to motivate the loan officers knowing that the MFI is concerned for their welfare and ongoing training requirements; thus they are less likely want to work for a competitor MFIs. The MFI will increase their capacity through training field officers (Statham, 2008).

### **3.1.4. Group lending**

Since 1970s, group lending programs have been promoted in many developing countries (Zeller, 1996). The key feature of group lending is joint liability. This means all group members are treated as being in default if any one member of the group does not repay his/her loan. Therefore, each member is made responsible for repayment of loans of his or her peers (Besley and Coate 1995). Most schemes give subsequent credit only if the group has fully repaid its previous loan. Loan under joint liability shows, 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, and enforcing repayment of their peers' loans (Zeller, 1996).

When performance is measured with a repayment rate, group lending shows a mixed success (Huppi and Feder 1990). Moreover, Besley and Coate (1995) points out that the group lending has both positive and negative effect on repayment rates. The existing theoretical models of peer monitoring assumes that the repayment performance in group-lending program is positively related to the homogeneity of group members with respect to the riskiness of their projects (Stiglitz 1990; Devereux and Fische 1993; Besley and Coate 1995) cited by (Zeller, 1998). However, according to Zeller there is little empirical evidence to confirm or reject this hypothesis. Besley and Coate (1995) argues that if social sanctions are not sufficiently strong, group lending may encourage default by members who would have repaid under individual lending. On the other hand, if social sanctions are sufficiently strong, group lending can improve repayment rates by encouraging borrowers to help each other.

Despite group lending has several benefits; there are many factors that may undermine the repayment performance in group lending. Zeller (1996) discusses that since the risk of loan 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 loan (i.e. adverse selection of risky projects). He further notes that repayment incentives for a good borrower will disappear under joint liability, when he or she expects that significant number of peers will default.

### **3.1.5. Other Challenges of Microfinance**

The first most typical challenges faced by any Microfinance institution is credit risk as mentioned earlier. Moreover, the cost of debt collection per loan amount is, on average, higher than in formal intermediation, specially in developing countries lending (Vento 2004). Similarly, high cost of service associated with the low-value, high volume and cash intensive nature of the business and also high fixed and variable costs (Basu, 2005).

A second source of risk for MFIs is represented by interest rate risk; it can be significant in the case of MFIs that collect deposits too. In most of developing countries, the average higher interest rate is volatil. Similar to interest rate risk, liquidity risk also appears more significant for deposit-taking MFIs; in fact, small savers tend to make frequent withdrawals and deposits, therefore, managing liquidity could become more difficult (Vento 2004). Moreover, Basu (2005) stated that the risk management challenges are associated with the high levels of information asymmetry.

Another sources of challenges in MFIs is ownership and governance risk. This risk concerns the weakness in internal control systems, which play an important role especially in case of lack of external regulation (Vento 2004). In addition, limited management capacity in MFIs and institutional inefficiencies also challenges (Campion, 2002). Moreover, inadequacy of well-trained personnel in their rolls and staff incentives within any formal organisation paradigm (private or public) that seeks to deliver these services is challenges for Microfinnce institutions (Basu, 2005).

## ***3.2. Empirical studies on loan repayment performance***

Loan repayment performance is affected by a number of socio-economic and institutional factors. While some of the factors positively influence the loan repayment, the other factors are negatively affect the repayment rate. Regarding to the loan repayment performance of borrowers several studies have been conducted in many countries by different authors. Some of the studies are summarized below.

### **3.2.1. Studies in Ethiopia**

Berhanu (2005) studied on the determinants of loan repayment performance of smallholder farmers in North Gondar, Ethiopia. In order to analyze the factors that affect loan repayment, he employed the tobit model. A total of 17 explanatory variables were considered in the econometric model. Out of these seven variables were found to significantly influence the repayment performance. These were land holding size of the family, agro-ecology of the area, total livestock holding, number of years of experience, number of contacts, sources of credit and income from off-farm activities. The remaining variables (family size, distance between main road and household residence, purpose of borrowing, loan amount and expenditure for social festivals) were found to have insignificant effect on loan repayment performance of smallholder farmers.

Abafita (2003) analyzed the microfinance repayment performance of Oromia credit and saving institution in Kuyu, Ethiopia. According to his finding; sex, loan size and number of dependants are negatively related to loan repayment. On the other hand age was found to be positive, while age squared turned to be negative. Income from activities financed by loan, repayment period suitability and loan supervision are positively and significantly related to loan repayment performance. Moreover, loan diversion is significant and negatively related to loan repayment rate. The negative sign implies that the use of diverted funds for non-income generating purposes.

Assefa (2002) employed a logit model to estimate the effects of hypothesized explanatory variables on the repayment performance of rural women credit beneficiaries in Dire Dewa, Ethiopia. Out of the twelve variables hypothesized to influence the loan repayment performance

of borrowers, six variables were found to be statistically significant. Some of these variables are farm size, annual farm revenue, celebration of social ceremonies, loan diversion, group effect and location of borrowers from lending institution.

Abreham (2002) studied on the loan repayment and its determinants in small-scale enterprise financing in Ethiopia around Zeway area. The estimation result employing tobit model. He is found out other sources of income, education, and work experience related economic activities before the loan are enhancing loan repayment. While extended loan repayment period is influence the repayment performance negatively.

Retta (2000, cited in Abafit, 2003) employed probit model for loan repayment performance of women fuel wood carriers in Addis Ababa. His finding is frequency of loan, supervision, suitability of repayment period and other income sources are found to encourage repayment hence reduce the probability of loan default. While educational level is negatively related to loan repayment.

### **3.2.2. Studies in other countries**

Bhatt and Tang (2002) studied the determinants of loan repayment in microcredit evidence from programs in the United States. Their study showed that women has low repayment rate because some women entrepreneur in the study might have been engaged in high risk and low return activities. Godquin (2004) also examined the microfinance repayment performance in Bangladesh. His result is female borrowers did not proven to have a significant better repayment performance. The size of loan and the age of the borrower showed the negative impact on the repayment performance. On the contrast, Abreham (2002) showed in his study male borrowers are the undermining factors for repayment.

Zeller (1996) analyzed the determinants of repayment performance of credit groups in Madagascar. His finding is groups with higher level of social cohesion have a better repayment rate. Moreover, the programs that provide saving service to their members have a significantly higher repayment rate. Olagunju and Adeyemo (2007) and Oke et.al. (2007) also analyzed the determinants of repayment decision among small holder farmers in southwestern Nigeria. The result showed that the number of visits made by loan officers to the borrowers, higher level of

education, and time of loan disbursement would have a better repayment performance. Moreover, borrowers with lower number of household members would meet their repayment obligation better than those with high number of household members. And having access to business related information and providing training to the clients are increasing the loan repayment rate of the borrowers.

As mentioned above, various studies were conducted on the determinants of loan repayment performance in different countries. Most of these studies were focused on the credit associated with agricultural activities and they identified the socio-economic factors that affect the loan repayment rate of rural household. However, in the literature review nothing was indicated about the factor influencing the loan repayment performance of urban borrowers. Thus, this research could focus on the borrowers who made various types of business in urban area.

# CHAPTER FOUR

## IV. Data and Methodology

### *4.1. Data source and type*

The survey was carried out between November 2010 and March 2011. During this time data were collected from primary and secondary sources. Secondary sources include published and unpublished materials about microfinance institution activities. These materials were collected from the Association of Ethiopian Microfinance Institution (AEMFI), head office, as well as sub-city and local district posts. In order to assess the determinants of loan repayment performance, primary data were obtained by direct interview with the respondents. The respondents were borrowers and loan officers of AdCSI.

The primary data were collected by interviews using structured questionnaires. The questionnaire includes both closed and open ended questions. The closed-ended questions used to collect background information about the respondent. It covered the personal information, institutional, group lending, loan and repayment related questions. The open-ended questions dealt with the challenges in repayment process and institution, the perception of clients towards the AdCSI and microfinance institution as a whole. All questions were translated into the local language (Amharic). The questionnaire was pre-tested before conducting interview for the whole sample. Besides, discussions were made with selected loan officers and branch managers and relevant documents were reviewed.

Information obtained using the survey questionnaire includes:

- Borrower characteristics like age, sex, marital status, level of education, household size, etc,
- History of loan (loan size, purpose and utilization of loan, etc),
- Information on group lending (group responsibility, group action, group member),
- Information on savings and training,
- Information on borrowers' perception of cost of default, customer service of the institution and other relevant variables,

- Information on business (Business experience, business type, business information, market study),

□ Information obtained from the offices include:

- Information on loan like repayment period, loan term, loan disbursement and collection, availability of training, loan officers visits, and stability etc,
- Information like screening mechanisms, saving services, formation of groups/centres, etc,

## ***4.2. Sampling procedure***

A stratified sampling technique was used to select the respondents. Currently, AdCSI has 10 sub-city branches and 116 service delivery posts in Addis Ababa. The preliminary investigation focused on the two most important services delivery centers in terms of the number of clients. List of loan clients was obtained from the records of the two services delivery centers of the institution. At the outset, the respondents were stratified into two categories, i.e. defaulters and non-defaulters. All borrowers of the microfinance credit that have repaid their loans when the due date were classified as non-defaulters while those who did not repay their loan three months after the due date were classified as defaulters.

The average default rate in 2004 was 1.3%, but in 2010 it was 4.7% (9,050 borrowers) (AdCSI, 2010). This implies that the average default rate is increasing over time. If it continues like this, the institution will not be effective for the future. Therefore, it is necessary to identify the socio-economic factors of defaulters. From each stratum, 100 clients were selected randomly in both services delivery centers, making the total respond for the interview 200 clients. In addition, during data collection, 19 employees (14 loan officers and 5 other supportive staff) were contacted.

AdCSI has divided its clients in to three categories: individual borrowers, group borrowers and co-operatives. For simplicity purpose borrowers in this study are classified into two: individual and group borrowers. In this study, distance between the client's place and the lender's office was measured by minutes; if the distance between the two places takes less than 30 minutes on walking, it was considered as "near to the office", whereas if it takes more than 30 minutes, it was considered as "far from the office".

### 4.3. *The study area*

The study area is located in Addis Ababa, the capital city of Ethiopia, which has a population of 3.5 million and lies at an altitude of 2,440m above sea level. The annual average maximum and minimum temperature is 22.8°C and 10.6°C, respectively. The city consists of 10 sub-cities and has above 100 local districts. The economic activities in Addis Ababa are diverse. According to official statistics 119, 197 (3.5%) people in the city were engaged in trade and commerce including small scale business entrepreneurs. Unemployment rate of the city was 30% in 2005 (CSA, 2008).

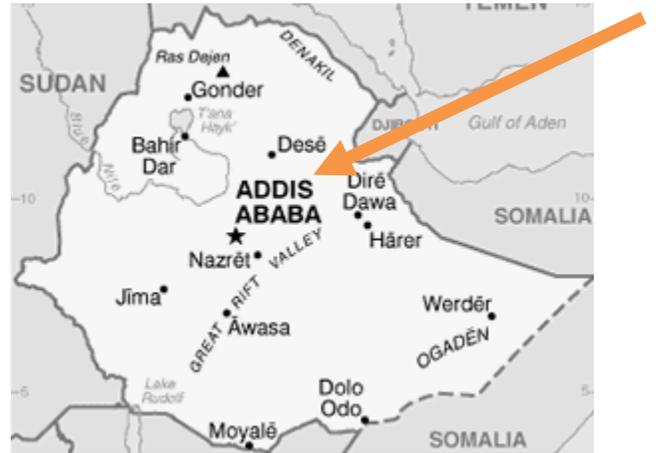


Fig 1: The study Area

The survey mainly considers two service delivery posts namely; local district 1 (Woreda1) and district 8 (Woreda 8). These two areas found at the kirkos sub city. The total population living in both service delivery posts (Woreda 1 and 8) is 65,928 people. Out of these around 6,324 peoples (10% of the population) are engaged in business activities including small scale enterprise. The area covered by both services delivery posts are 312.7ha (AdCSI, 2010).

### 4.4. *Empirical model*

Based on the economic theory and data that we have, the explanatory variables selected for this study were broadly categorized under socio-economic and loan related factors. The loan repayment performance could be affected by these factors either positively or negatively. Therefore, a brief explanation of the explanatory variables and their influence on the loan repayment performance is presented below.

#### *Borrowers' characteristics*

There is a belief that among many Microfinance specialists female are better payers than male borrowers, taking in to consideration their being more entrepreneurial that results from assuming more responsibilities in the internal affairs of a household (Vigano, 1993). Moreover, females in

urban area are relatively independent than rural area. And mostly females are reliable in related to financial aspects. Thus, they can perform their business independently and repay their loan on time.

Education level is expected to have a positive impact on repayment performance. A more educated client is expected to use the loan effectively as compared to a less educated one (Brehanu & Fufa, 2008). Education increases borrowers' ability to get, process and use the necessary information. In line with this, educated borrowers may develop the entrepreneurial skill and they may engage in new business.

The age of borrowers also affects the loan repayment performance of the client. This variable has expected to influence the dependent variable positively. Vigano (1993) noted that with increase in age, it is usually expected that borrowers get more stability and experience on their business. So they may able to generate income and it leads to high repayment performance. Moreover, elder borrowers may accumulate more wealth than youngsters and they feel responsibility for the loan. Therefore, we expect this variable to have a positive impact on repayment performance.

In addition, family size and number of dependents out of the household are also matter the repayment performance of the borrowers. If there are many family members in the household, they need more income in order to cover the expense of their household members. Therefore, the borrower may use the loan directly for their daily consumption and other expense. In this case the default rate will be increased. Dependency ratio is the number of nonworking members compared to working members for a given household. This is computed by dividing the number of dependents to the total number of family size.

Zeller (1996) stated that the presence of voluntary saving service in the Micro-finance institute improve the repayment performance of borrowers. If the borrowers are save money in the institution before the failure, they are willing to repay their loan. Because when they were in default, they lose their saving. Thus, the saving behavior of borrowers may have low default rate (Bhatt and Tang, 2002).

### *Loan specific characteristics*

Von Pischke (1991) noted that efficient loan sizes fit borrowers' repayment capacity and stimulate enterprise. If the amount of loan released is enough for the purposes intended, it will have a positive impact on the borrower's capacity to repay. On the other hand, in case of over and under finance, the expected sign is negative. If the amount of loan exceeds what the borrower needs and can handle, it will be more of a burden than help and extra funds may go toward personal use (Norell, 2001), thereby undermining repayment performance. If the loan is too small, it may also encourage borrowers to divert the loan to other purposes (Vigano, 1993). However, in this case Addis microfinance institution couldn't give excuses loan for the client. Therefore, over finance is not a problem as such. Moreover, the loan usage is also affecting the repayment rate. If the entire loan used for the intended activities, the repayment will be enhanced. By putting the whole loan for running business, it is possible to generate income and performing the business in a better way. While, if the loan used for unintended purpose like consumption, it will hinder the repayment performance of the clients. However, Armendariz and Morduch (2010) stated that moral hazard problem associated with information asymmetry, which means the lenders are not able to ensure that whether the clients are put full effort for the success of the investment.

In group lending there might be more group pressure for defaulters than individual lending. In the one hand, there was a social capital or norms that govern the group members. On the other hand, there was a group liability contract among the group members. Joint liability contract refers to group borrowers as a whole are liable for repayment of their collective loans (Che, 2002). The group members may feel responsibility for the other group member loan. Therefore, they may put social sanctions/capital on the defaulters within the group and enforce them. Hence, group lending has a positive impact on loan repayment. However, Zeller (1996) explain the factors that undermine the repayment rate in the group lending. Such as a group member may choose riskier project compared to individual borrower and good borrowers will disappear under joint liability contract. In addition, borrowers who borrow repeatedly from the institution have a possibility to develop good relationship with the loan officer because they already know the rules and regulations of the institution. In line with this, if they are repeated borrowers, their business

is already established and they need the loan for expansion purpose. Therefore, they may be capable and willing to repay the loan. Thus, this leads to facilitate the repayment rate of the client.

If the repayment period is suitable, the client should perform better. For example, if there is a grace period for some months after the loan disbursement, the borrowers can run their business without shortage of working capital. Thus, the expected sign of this variable is positive. Moreover, if there is a continuous follow up and supervision made by loan officer, the client could efficiently utilize the loan for the intended purpose. There is a possibility to remind the obligation and motivate the borrowers for repaying the loan. Norell (2001) stated that quick follow-up and visits are helpful in preventing default rate. Therefore, we expect a positive relationship with the dependent variable.

Training is one of the important requirements for the success of microfinance institutions (Assefa, et al, 2005). If the lender provides various trainings, the clients will be able to understand the rules and regulations easily. They also develop skills on how to do business and money utilization. Training is needed not only for clients but also for loan officers. In both cases, it has a positive contribution to the repayment rate. Norell (2001) also agrees on the importance of training for the decreasing of default rate.

### ***Business related characteristics***

Business run by an experienced person has an effect on the loan repayment performance. The risk of failure is less, when the business is operated by an experienced person than those who have just started (beginner). Therefore, the more the number of years in a business, the better would be the loan repayment performance (Brehanu & Fufa, 2008). If the borrowers had enough experience in the specific business, they already know the potential risks that they will face in the business. Business information refers to information that is related to the specific business like the demand and supply of the product, the purchasing power of the clients and other things. If the borrowers are able to get the necessary information, they can produce and sell based on the customer need. Moreover, if they have enough information about the market situation of the product, they can try to predict about the future of the business. Hence, it leads to facilitate the repayment rate of the borrower.

Business types are mostly associated to risk. Business risk is uncertainty about the future operating. Business risk is determined by uncertainty about demand, output price, and cost and also price sensitivity of the customer (Sadgrove, 2005). The borrowers who have enough experience and knowledge about the risk and risk coping strategy are engaged in the risky business type. Therefore, a type of business that the clients engaged has also an impact on the repayment rate of the borrowers. If the clients engaged in the profitable business type, they will earn enough money. Thus, this leads to facilitate the repayment rate of the client.

#### ***4.5. Estimation Methods***

For this research descriptive statistics is one of the techniques used to summarize the data collected from the sample respondents. Frequency, table, mean, median, standard deviation, percentages and also T-test and Chi-square test were used for comparing defaulters and non-defaulters in various explanatory variables.

In addition an econometric regression model is applied for analyzing the data. Loan repayment is a dependent variable, while different socio-economic and lender related factors considered as independent variables. In this case the value of this dependent variable is 0 and 1, which stands for 0 if the borrower is a non-defaulter and 1 if the borrower is defaulter. Therefore, loan repayment treated as dichotomous dependent variable.

Loan repayment is, therefore, a non continuous dependent variable that does not satisfy the key assumptions in the linear regression analysis. When the dependent variable to be modeled is limited in its range, using ordinary least squares (OLS) may result in biased and inconsistent parameter estimates. To examine the factors affecting the loan repayment, discrete choice model should be used. Thus, the most widely used and appropriate qualitative response models are the logit and probit models (Verbeek, 2008).

Assume that there exists a latent (unobserved) variable such that:

$$y_i^* = \beta X_i + \varepsilon_i$$

$$y_i = \begin{cases} 1 & \text{if } y_i^* > 0 \\ 0 & \text{if } y_i^* \leq 0 \end{cases}$$

Where:

$y_i^*$  = a vector of the latent variable that is not observed for values less than zero and greater than one,

$y_i$  = the observed variable, representing the proportion of loan repayment,

$\beta$  = the unknown parameters that reflecting the impact of change in variable X,

$X_i$  = explanatory variables that determine the dependent variable,

$\varepsilon_i$  = error terms that is distributed normally with mean 0 and variance  $\sigma^2$ ,

$i = 1, 2, 3, \dots, n$ , represents the number of observations.

The specification would provide us with a Cumulative Density Function (CDF). In practice there are two choices of distribution; such as, standard normal and standard logistic CDF. The probit model is associated with the cumulative normal probability function, whereas the logit model assumes cumulative logistic probability distribution. Maddala (1983) reported that the normal and logistic CDFs are very close in the mid-range, but the logistic function has slightly fatter tails than the normal function. Hosmer and Lemeshew (1989, cited in Assefa, 2002) agree with the advantage of logistic distribution in the analysis of dichotomous outcome. Therefore, the logistic function is selected for this study. The cumulative logistic probability is specified as follows (Verbeek, 2008).

$$Prob(Y = 1) = \frac{1}{1 + e^{-z_i}}$$

Taking the natural logarithm is:

$$Z_i = \ln\left(\frac{P_i}{1 - P_i}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

If the error term ( $\varepsilon$ ) is taken in to account, the logit model becomes:

$$Z_i = \alpha + \sum_{i=1}^k \beta_i X_i + \varepsilon_i$$

The unknown parameters  $\beta^s$  are estimated by likelihood function.

In this case the dependent variable loan repayment is the function of socio-economic loan specific, business and lender related factors. The function specified as:

$$Z_i = LR_i = f(S, Lo, B)$$

Where:

$LR_i$  = loan repayment for the  $i^{th}$  borrower ( $LR_i = 0$ , borrower repaying loan on time;  $LR_i = 1$ , borrower did not repay loan on time)

$f$  = a cumulative density function (CDF)

$S$  = represent the individual client's characteristics that affect the decision whether to repay their loan or not

$Lo$  = stands for the loan specific characteristics of the individual clients

$B$  = represent business specific characteristics of each clients

There are many factors that determine default. In this study the default rate is determined by the following explanatory variables, used to explain repayment performance. These variables are: sex, age, educational level, family size and number of dependents out of the household business type and dependency ratio.

From the above explanatory variables; age and business experience are continuous variables measured in years. Moreover, family size, dependency ratio and number of dependents in the household are also continuous variables measured in numbers. After the estimation of the model, the marginal effects of those continuous explanatory variables will be calculated in order to know the probability of loan repayment.

Binary choice model assume that individuals are faced with a choice between two alternatives and their choice depends on their behavior and action. In this study there are seven discrete explanatory variables which take the value of 0 and 1. Therefore, the literate respondents took the value of 0 if they learned primary education and junior school and 1 if they were learned secondary education and graduated from college and/or university. Respondents were engaged in various businesses, but for simplicity we categorize in to seven main types of business such as;

*baltina*<sup>2</sup> and petty market, kiosk and shop, service provision (like barber, beauty salon, parking, municipality services, and consultancy) construction, urban agriculture, the sixth business type is textile and tailor, and the last category is metal and wood work. All these seven business types are considered as explanatory discrete variables, which takes 0 if they were not engaged in that business and 1 if they were engaged in that specific business. In addition, respondent who are able to get related business information took 1 and 0 otherwise.

The total number of borrowers in the institution is considered as a population such as 9,050 defaulters and 183,510 non-defaulters. Hundred borrowers were randomly selected from each group. However, the probability of being sampled between defaulters and non-defaulters were different. Therefore, in order to get the standard error smaller, it is better to consider the sampling weights. Sampling (probability) weights are adjustment factors applied to each case in tabulations to adjust for difference in probability of selection and interview between cases in a sample. Weights represent the probability that a case (or subject) was selected in to the sample from a population. These weights are calculated by taking the inverse of the sampling fraction (<http://www.ats.ucla.edu/stat/stata/faq/weights.htm>). In this study, for the defaulter group the sampling fraction was 1/90.5 and the inverse of this sampling fraction is known as probability weight. On the other hand, from the non-defaulter group the sampling fraction was 1/1835.1 and the inverse of this fraction is sampling weight.

#### **4.6. *Multicollinearity tests***

Before running the logit model, the explanatory variables were checked for the existence of multicollinearity. Multicollinearity problem arises when two or more variables (or combination of variables) are highly correlated with each other. The existence of multicollinearity might cause the estimated regression coefficients to have the wrong signs, smaller t-ratios and high standard errors (Pindyck & Rubinfeld, 1998).

There are two ways to detect the presence of multicollinearity. These are: Variation Inflation Factors (VIF) for association among the continuous explanatory variables and contingency coefficients for dummy variables. The VIF for each term in the model measures the combined effect of the dependences among the regressor on the variance of term. One or more large VIF

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<sup>2</sup> It is local name means preparing cultural Ethiopian foods and beverage like injera, bread, hot paper...

indicates multicollinearity. Practical experience indicates that if any of the VIFs exceeds 5 or 10, it is an indication that the associated regression coefficients are poorly estimated because of multicollinearity (Paul, n.d).

According to Verbeke (2008) VIF can be defined as:

$$VIF(X_i) = \frac{1}{1 - R_i^2}$$

The VIF values for continuous variables were found to be very small (less than 5). This is to indicate the absence of multicollinearity between those variables (Appendix 2).

In line with this, contingency coefficients were computed to check the existence of multicollinearity problem among the discrete explanatory variables. A contingency coefficient is a measure of the degree of relationship, association or dependence among variables included in the study. The contingency coefficient is calculated as follows (Garson, 2008):

$$C = \sqrt{\frac{x^2}{x^2 + N}}$$

Where: C = contingency coefficients

$X^2$  = the value of Chi-square

N = total sample size

The decision rule for contingency coefficient is the larger the value of this coefficient, the greater the degree of association. The maximum value of the coefficient is never greater than 1.

The results of contingency coefficients reveal that there was no serious problem of association among the discrete variables (Appendix 3). Therefore, five continuous and seven discrete explanatory variables were used to estimate the logit model.

# CHAPTER FIVE

## V. Result and Discussion

### 5.1. Descriptive statistics result

Descriptive statistics analysis is made use of tools such as mean, percentage, standard deviation and frequency distribution. In addition, T-test and Chi-square test statistics were employed to compare defaulter and non-defaulter group in terms of each explanatory variables.

#### 5.1.1. Socio-economic characteristics of the respondents

The average age of the whole respondents was  $38 \pm$  years, ranging between 19 and 80 years old. There was statistically significant (at 5% level) difference between the mean age of defaulter and non-defaulter (Table 3). As we see from the graphs below (Fig.2 & Fig. 3), more than half of the respondents were in the first and second age category, showing that most of the borrowers were young age groups. The proportion of youngsters in the defaulter group was a little bit higher than that in the non-defaulter group.

Table 3: Borrowers characteristics (continuous variables)

Variables	Defaulters (N= 100)		Non-defaulters (N= 100)		Total sample (N= 200)		t-value
	Mean	St.dev	Mean	St.dev	Mean	St.dev	
Age	35.72	11.886	39.45	12.793	37.57	12.453	2.12**
Total no. of family size in the household	3.35	2.969	4.05	3.160	3.70	3.079	1.61
No. of dependents out of the household	0.43	1.297	0.59	1.583	0.51	1.446	0.78

\*\* Significant at 5% level

Sources: Survey results

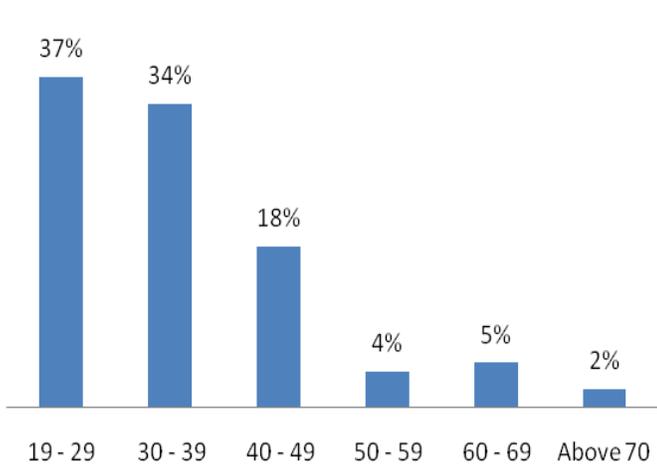


Fig. 2: Age range of the defaulters

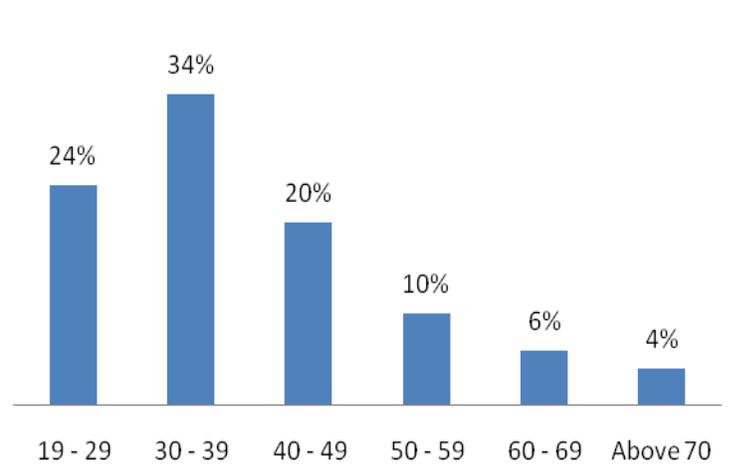


Fig. 3: Age range of non-defaulters

On the basis of sex distribution, half of the respondents were female and the rest half were males both in the defaulters and non-defaulters group. Regarding to the saving behavior of the clients, about 56% of the respondents saved their money for future use. As shown in the Table 4, more than half of the saving service users were non-defaulters, while most of the defaulters were not saving service users. Zeller (1996) also agree with the importance of saving to influence the repayment rate. Most of the service users saved their money in Addis microfinance institution (AdCSI). Others save their money in commercial banks and traditional saving system like *iqueb*<sup>3</sup>. Almost half of the saving service users save their money for the purpose of expanding business.

The survey result revealed that most of the respondents' residence and business place were near to the lender office. This helps to make continuous follow-up and supervision for loan officers of the institution (Table 4). According to the survey result, 47% of the total respondents had only one sources of income which is from the business financed by the loan.

<sup>3</sup> where people agrees to put their money on weekly or monthly basis like rotating saving

Table 4: Socio -economic characteristics of the sample respondents (discrete variables)

Variables	Defaulters	Non-defaulters	Total Sample		X <sup>2</sup> -value
			No.	Percent	
Sex Female	49	51	100	50%	0.00
Residence place Near to the lender office	76	77	153	76.5%	56.18***
Business place Near to the lender office	79	87	166	83%	87.12***
Saving money Yes	39	72	111	55%	2.42*
Saving place AdCSI	24	56	80	72%	142.5***
Income sources Only one business	48	45	93	47%	241.7***

\*\*\* represent the level of significant at 1%

\* represent the level of significant at 10%

Sources: Survey results

The survey result showed that 85% of the sample respondents were literate with different educational level. Figures 4 and 5 show that as the level of education increases the borrowers become defaulters with significant difference at 1% level.

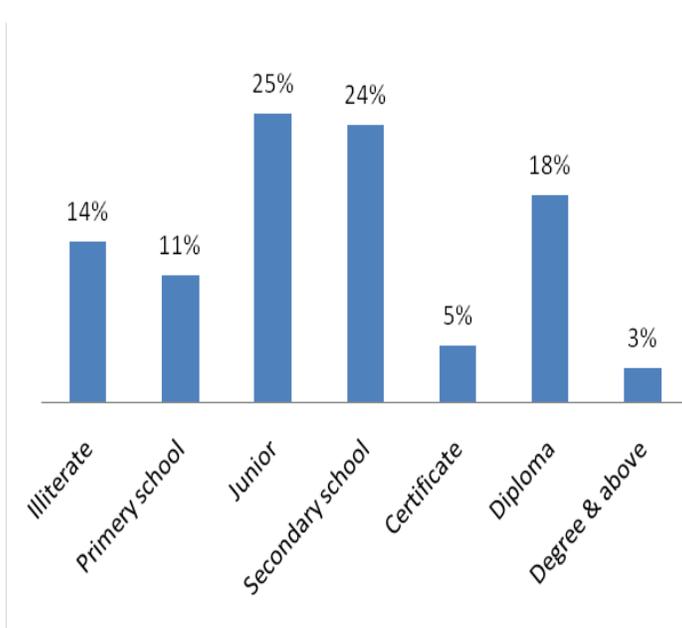


Fig. 4: Educational level of defaulters

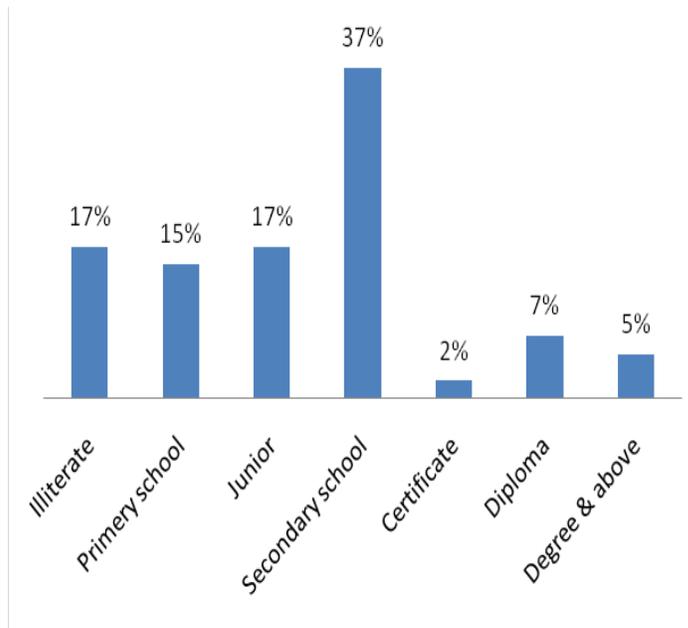


Fig. 5: Educational level of non-defaulters

As indicated in the following chart (Figure 6 and 7), the percentage of married respondents were high in non-defaulters group than defaulters group. Non-defaulters were significantly more likely to be married.

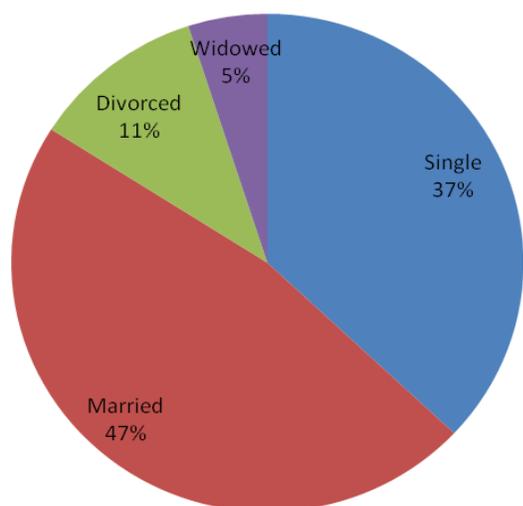


Fig. 6: Marital status of defaulters

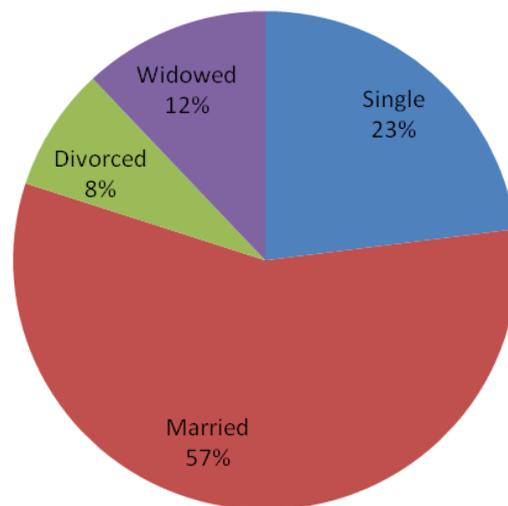


Fig. 7. Marital status of non-defaulters

Sources: Survey results

### 5.1.2. Loan specific characteristics

About 60% of defaulters were involving in the group lending, while the rest were individual borrowers. The reverse happened in the case of non-defaulters (Table 5). The finding indicates that there are more defaulters in the group borrowers than in individual borrowers. Besley and Coate, (1995) agree on the positive and negative effect of group lending on the repayment rate. In this institution group lenders have better opportunity to get loan easily. Without collateral and personal guarantee they can get loan from the institution, with joint liability used as collateral.

Table 5 shows that the sample respondents were borrowing money for the purpose of either expanding already existing business or doing new business. More than half of non-defaulters were borrowing for the purpose of expanding existing business. Norell (2001) stated that if the business existed for at least one year on the owner's equity, the loan from microfinance should be a lower risk than if the business is a start-up, because businesses are most likely to fail within

the first year of operation. This apparently indicates that borrowing for the purpose of running the existing business is relatively better loan repayment performance.

Table 5: Loan specific characteristics (discrete variables)

Variables	Defaulters	Non-defaulters	Total Sample		X <sup>2</sup> -value
			No.	Percent	
Loan scheme Group lending	60	40	100	50%	0.00
Reason for involving in group Easy to get loan	44	30	74	74%	36***
Group member relationship Neighbors	45	32	77	77%	32***
Purpose of loan Expanding existing business	42	63	105	52.5%	0.50
Loan usage For the business	65	87	152	76%	54.08***

\*\*\* Significance at 1% level

Sources: Survey results

Borrowers who didn't divert the loan had a better loan repayment performance than the loan diverter (Table 5). Out of the total 24% respondents who diverted their loan, only 4% used it for productive purpose.

The survey result indicates that, only 15% of the respondents were trained on business and financial management and different microfinance aspects like saving, repayment and insurance. These are the long lasting clients and they took the training within three years since establishment of the institution (Table 6).

The average number of visits made by loan officers per 3 months was about 1.7 (Table 7). Some of the borrowers stated that nobody came to their business and residence place since loan disbursement time. According to respondents the main reasons for unsuitability of repayment period are starting time to repay is too early (24%), monthly repayment (4%), and repayment period is short (3%). The reasons for lag of loan disbursement are long procedure, officials not available at working hours and borrower's problems (Table 6).

Table 6: Characteristic of loan (discrete variables)

Variables	Defaulters	Non-defaulters	Total Sample		X <sup>2</sup> -value
			No.	Percent	
Availability of training Yes	8	22	30	15%	98***
Loan officer stability Stable	51	41	92	46%	26.44***
Unstable	17	17	34	17%	
Customer services Good	92	94	186	93%	158.04***
Loan officer age range Similar with clients	67	58	125	62.5%	12.5***
Loan officer sex The same with clients	28	47	75	37.5%	12.5***
Repayment period Suitable	64	69	133	66.5%	21.78***
Loan disbursement time Timely release	63	62	125	62.5%	12.5***

\*\*\* Significance at 1% level

Sources: Survey results

Table 7: Summary of continuous variables

Variables	Defaulters (N= 100)		Non-defaulters (N= 100)		Total sample (N= 200)		t-value
	Mean	St.dev	Mean	St.dev	Mean	St.dev	
Business experience (year)	5.95	5.564	7.45	6.644	7.12	8.432	-1.73*
Number of times borrowed	1.52	0.893	2.33	1.682	1.92	1.403	-4.25***
Number of visits made by loan officer	1.49	1.501	1.89	2.146	1.69	1.858	-1.53
Number of group members	5.15	3.848	5.78	5.356	5.4	4.497	-2.92***

\*\*\* represent significance at 1% level

\*represent significant at 10% level

Sources: Survey results

### 5.1.3. Business related characteristics

As indicated in table 8, clients of AdCSI are engaged in various business activities. Large numbers of borrowers were involving in *baltina* and petty market, kiosk & shop and service providing activities with significant difference. Service providing includes beauty salon, barbers, computer maintenance, consultancy and secretarial and municipality services.

Table 8: Business types of defaulters and non-defaulters

Types of business	Defaulters	Total Sample	
		No.	Percentage
Animal husbandry	5 (38%)	13	6.5%
Horticulture	1 (33%)	3	1.5%
Weaving and tailoring	5 (36%)	14	7%
Food processing	4 (36%)	11	5.5%
Metal work	2 (50%)	4	2%
Wood work	6 (86%)	7	3.5%
Construction	16 (89%)	18	9%
Baltina and petty market	29 (48%)	60	30%
Kiosk and shop	18 (45%)	40	20%
Service provider	14 (47%)	30	15%
Total	100	200	100

Sources: Survey results

With regard to information, most of the non-defaulters were able to access business information. According to them, the sources of information were friends and media like TV and radio. From the market assessment perspective, more than half of the respondents did not assess the market before they were doing business (Table 9). The finding of the survey indicates that the reasons for not conducting market study before starting business are:

- they already had an experience before,
- they started business when they had no choice of income generation, and
- no idea about market study.

About 61% of defaulter's business was successful but due to many reasons they were not willing to pay their loan. As Norell (2001) described this is one category of clients 'unwilling but able to repay'. On the contrast 9% of non-defaulters' business was not successful; however they were paying their loan from the other income sources. There was significant percentage difference (Table 9).

Table 9: Business specific characteristics (discrete variables)

Variables	Defaulters	Non-defaulters	Total Sample		X <sup>2</sup> -value
			No.	Percent	
Market study Yes	26	38	64	32%	25.92***
Business information Yes	30	62	92	46%	1.28
Business status Successful	61	89	150	75%	53.83***

\*\*\* represent the level of significance at 1%

Sources: Survey results

About 68% of non-defaulters repaid their loan in full amount on the due date and 32% of them paid their loan partially on time. According to non-defaulters, they benefited by fully and timely paying their loan. Some of the benefits are:

- access to the next higher loan (28%),
- to make the family stable (17%),
- build good relationship with the loan provider (12%) and
- freedom from penalty (7%).

On the other hand, according to defaulters the reasons for not repaid their loan are:

- cost of doing business is higher than revenue/ loss (42%),
- low supervision by the loan officer of the institution (9%),
- personal problem of borrowers like illness (14%), Norell (2001) also stated in his article this is one of the reason for default,
- improper use of loan (7%), this is also the other reason for default (Norell, 2001),
- shortage of working capital and problem in working place (18%).

#### 5.1.4. Difference between individual and group borrowers

As the test statistics shows (Table 10) there was significant (at 1% level) mean difference between individual and group lending scheme in terms of the number of dependents and loan size. With respect to loan size there was similar result in the defaulter and non-defaulter group while number of dependents was not found to be similar findings. As explained in the above section age, business experience and number of times borrowed were found to be significant

mean difference between defaulters and non-defaulters group. However, these variables had no significant mean difference between individual and group lending scheme. Family size and number of visits made by loan officer had no significant mean difference between the group and individual borrowers. This result is similar with the loan repayment status group of borrowers.

Table 10: Summary of continuous variables by loan scheme

variables	Individual lending		Group lending		t-value
	Mean	Sta.dev.	Mean	Sta.dev.	
Age	38.05	12.16	37.08	12.77	0.54
Family size	3.97	3.35	3.43	2.76	1.24
No. of dependents	0.77	1.81	0.25	0.86	2.57***
Business experience	7.36	6.37	6.04	5.88	1.52
No. of times borrowed	2.08	1.48	1.77	1.3	1.56
Visits	1.87	2.01	1.51	1.67	1.37
Loan size	16,965	34,902	5,596	5,800	3.21***

\*\*\* represent the level of significance at 1%

Sources: Survey results

### 5.1.5. Challenges and difficulties

#### *Internal and External challenges of the institution*

The most typical challenges faced by any microfinance institution is credit risk. Moreover, the cost of debt collection per loan amount is, on average, higher than in formal intermediation, specially in developing countries lending (Vento 2004). In addition to this AdCSI as an institution has many internal and external challenges, such as:

Internal challenges:

- shortage of loanable funds for further expansion,
- high turnover of employees to other organizations, they are mainly attract by better salary scales and benefits provided by these organization. Compared to government organization salary scale of the institution is higher. But the problem is that AdCSI's employees are attracted by the private commercial banks and NGOs.
- there is no enough employees in the institution specially loan officers,
- all activities in the institution done manually /don't use computerised system

- insufficient working place/office in most of service delivery posts, staff of the institution were share one office with the employees of other government organization,
- Poor documentation

External challenges:

- competition- there is very strong competition faced with conventional banks in mobilization of savings and increasing withdrawal. People trust formal banks specially commercial bank of Ethiopia. Moreover, the other sources of competition is NGO's, women's fund and other institutions who give loan without interest.
- improper interference of third party in the decision of loan approval. In this regard Norell (2001) also reported that if the loan given without the proper evaluation of business, the default rate may increase.

### ***Challenges for loan repayment***

The sample respondents identified many problems that hinder the loan repayment process. The summary of most frequently mentioned challenges are the following:

- About 51 respondents said that there is high interest rate and monthly penalty in the institution. As microfinance institution AdCSI's interest rate is low but the clients still demand low interest rates taking into combined service charges, insurance premium and compulsory saving with the interest rate. This might be due to lack of proper orientation.
- Insufficient loan size specially for group lending (30),
- No grace period (22),
- Weak in following up to retrieve loans and on business (17),
- Lag of loan disbursement (13)
- Poor customer handling specially the manager of the services delivery center (11),
- Third party services tend to interfere with their primary services because employees, becomes busy specially the cashier (10),
- No training is given by the institutions (8),
- They do not provide the necessary information like interest rate, insurance, etc. (17),

Some of the above challenges are associated with the limited financial capacity of the institution, and insufficient employees specially loan officers. Moreover, they couldn't consider the customer complaints and don't take corrective action.

## 5.2. Econometrics result

In this section econometric analysis was carried out in order to identify the most important and significant factors that affect the loan repayment performance of borrowers. As explained in the previous chapter, a logit model was employed to estimate the effects of hypothesized explanatory variables on the loan repayment performance.

### 5.2.1. The goodness of the model

The measure of goodness-of-fit used in the binary choice model is the pseudo  $R^2$ . A pseudo  $R^2$  measure is a measure that has the same kind of interpretation as the OLS- $R^2$  in the linear model, and so at least lies in the  $[0, 1]$  interval (Windmeijer, 1995). Usually not very high value in range 0.1 - 0.5 is normal in binary models (Pindyck & Rubinfeld, 1998). The relevant behavior of several pseudo- $R^2$  measures is analyzed in a series of misspecified binary choice models, the misspecification being omitted variables or an included irrelevant variable (Cameron and Windmeijer, 1997). As shown in table 12, the pseudo  $R^2$  is 0.1 in this logit model. On the other hand, the model result reveals that the logistic regression model correctly predicted 72% and 59% of the sample borrowers in the non-defaulter and defaulter group respectively (Table 11). This prediction is only slightly better than just randomly assigning (50%) so that the model is not very good in predicting defaulters. In addition to the main model, there are two separate regressions for each sub sample. The two separate samples are grouped based on the loan scheme which is individual lending and group lending. This leads to identical regression equation so that the chow test statistics is helps to test the equality of two models. The result of this test was significant so that the two separate models are more appropriate for regressions.

Table 11: The Logistic model for loan repayment

Logistic model for RL

Classified	True		Total
	D	~D	
+	59	28	87
-	41	72	113
Total	100	100	200

Sources: Survey results

### **5.2.2. Discussion on the effect of explanatory variables**

The estimated of logit model are shown below in table 12. A total of 11 explanatory variables were considered in the economic model. Out of these, 6 variables were found to be significantly influence the probability of being defaulter at different significance level. Age and all the five business type included in the model were found to be statistically significant. Such as; baltina & petty market, kiosk & shop, services providing, weaving & tailoring and urban agriculture. However, the remaining 5 explanatory variables namely, sex, education level, family size, business experience and dependency ratio had no significant effect on the probability of being defaulter.

On the other hand, 8 variables were found significant on the group lending scheme. These are sex, business experience, dependency ratio and all the five business types. While in individual lending scheme only four variables (baltina & petty market, waving & tailoring, services providing and urban agriculture) were statistically significant.

Age of the borrowers' was found to be negative as expected, which means as age increased, the probability of being defaulter is decreased (Table 12). The implication is that the borrowers were becomes elder, they might be more aware on the financial management and they feel responsibility. This variable was significantly influence on the loan repayment performance at 10% level of significant. This result is in line with the study made by Abafita (2003). However this is not agreed with the econometric result of Berhanu (2005) and Godquin (2004). As indicated in table 12, in the group lending model the positive sign for sex indicates that female borrowers were worse loan payers than male borrowers. This variable was significant at 5% level in the group lending scheme only. It is not consistent with the prior expectation. This result is supported by the finding of Bhatt and Tang (2002), Godquin (2004) and Abafita (2003) they also reported men were most likely to repay than women.

Table 12: The maximum likelihood estimates of the probability of default.

Variables	Loan repayment (Whole sample)	Loan repayment (Group lending)	Loan repayment (Individual lending)
Sex	0.414 (0.470)	4.311** (1.736)	-0.0387 (0.563)
Age	-0.0238* (0.0133)	-0.0379 (0.0248)	-0.0152 (0.0212)
Education level	-0.596 (0.440)	-0.519 (1.014)	-0.545 (0.586)
Family size	-0.0307 (0.0723)	-0.103 (0.153)	-0.0783 (0.119)
Baltina & petty market	-2.104*** (0.767)	-5.132** (2.121)	-2.540** (1.132)
Kiosk & shop	-1.866*** (0.666)	-5.464*** (1.726)	-1.439 (0.968)
Service providing	-1.743*** (0.644)	-2.037* (1.111)	-1.990** (1.005)
Weaving & tailoring	-2.418*** (0.782)	-2.935** (1.309)	-2.019* (1.189)
Urban Agriculture	-2.308*** (0.745)	-3.097** (1.312)	-2.305** (1.140)
Business experience	-0.0355 (0.0265)	-0.0953** (0.0403)	0.0148 (0.0511)
Dependency ratio	-0.0735 (0.137)	-1.585* (0.834)	-0.119 (0.150)
_cons	6.166*** (0.858)	7.399*** (1.713)	5.631*** (1.439)
N	200	100	100
Log pseudolikelihood	-35.59	-11.86	-23.64
Pseudo R-sq	0.1	0.2	0.1

Standard errors in parentheses

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01

Sources: Survey results

According to the result, borrowers who engaged in the above business type were best loan payers. Moreover, all business types were found to be significant in the first two regressions, while in the third model four business types were significant. The maximum likelihood estimates of the logit regression model shows that borrowers engaged in baltina & petty market and kiosk & shop have a better repayment performance than borrowers who engaged in the construction; it

is significant at 1% level (Table 12). This could be the fact that it is low risk business type compared to the other type of business (construction) because this can be preparing at home/ residence place of the borrowers. It is not needed some other special place for running the business. In addition, these were not required large amount of money for start up the business as compared to the construction business.

Table 13: The marginal effects of continuous variables after logit

Continuous Variables	Loan repayment (Whole sample)	Loan repayment (Group lending)	Loan repayment (individual lending)
Age	-0.0008153	-0.0005765	-0.0007886
Family size	-0.0010515	-0.0015606	-0.0040663
Business experience	-0.0012125	-0.0014486	0.0007685
Dependency ratio	-0.0025132	-0.0240758	-0.006157
Pr (RL)	0.96454256	0.98456747	0.94507524

Sources: Survey results

The econometric model result shows that weaving and tailoring business type was also significant (at 1% level) negative influence on the probability of being defaulter. These borrowers were better loan payers than borrowers who engaged in construction, metal and wood work. Most of the borrowers engaged in the weaving and tailoring activities were made cultural cloths. Nowadays, in Addis Ababa the demand and price for cultural cloths become higher. Therefore, this might be the reason for the positive significance of this business type over the repayment rate of those clients. Urban agriculture has a negative significant influence in the probability of being defaulter. The possible explanation is that they could have enough demand for their vegetables and animal products like milk, egg. In addition, they can also provide fresh vegetables for the market. Therefore, in this type of business they might not face the market and transportation problem.

Borrowers engaged in various services providing activities like barber, beauty salon, parking, municipality services, and computer maintenance, consultancy and secretarial services. This variable was negatively and significantly (at 1% level) related to the probability of being defaulter. It has also similar effect in both group and individual lending. This could be explained

that most of the activities categorized in this business type do not required large amount of working capital. As indicated in the descriptive part one of the main challenges in the repayment process is insufficient loan size. Borrowers engaged in this type of business do not face shortage of working capital. Thus, they were able to start their activity in the available amount of money.

The result of logit model reveals that in a group lending business experience has a negative significant effect, which means as the borrower's business experience increased by one year, the probability of being defaulter is decreased by 0.15% (Table 13). the This might be due to the fact that as the borrowers had enough experience in the specific business, they already know the potential risks that they will face in the business and able to make corrective action. In addition, the cumulative effect of business experience within the group is helps to make the business effective. This leads to enhance the loan repayment performance of the group. This is agreed with the prior expectation and with the result of Berhanu (2005) and (Brehanu & Fufa, 2008). In the group lending scheme dependency ratio was negatively and significantly (at 10% level) related to the probability of being defaulter. This could be explained that borrower's family in the group lending might be involving in productive activities.

## CHAPTER SIX

### VI. Summary, conclusion and recommendation

#### 6.1. Summary

Currently, poverty becomes a major problem in many developing countries. In these countries poverty is sever which has left millions of people out of basic needs for survival. In Ethiopia, there are many poor people living in rural and urban areas. The availability of financial services plays an important role in creating self-employment opportunities for the majority of low income population. The main problem of the poor performance of financial institutions in many developing countries is high rate of non-repayment of loan. The default rate of Addis microfinance institution is increasing from time to time. This study was intended to identify the determinants of loan repayment performance of Addis microfinance institution. A total of 200 clients were including in this survey. In order to identify the socio-economic factors of the clients, descriptive statistics and weighted logistic regression were employed. Many variables were analyzed in the descriptive statistics while due to endogenous problem only 11 variables were included in the econometric model.

The proportion of youngsters in the defaulter group was more than in non-defaulter groups. More than half of the respondents' residence and business place were located near to the lending office. Most of the respondents were literate with different educational level. Half of the respondents were married and the percentage of married respondents was high in non-defaulters group than defaulters group, whereas, the number of single defaulters was higher than that of single non-defaulters. Borrowers who save money in the institution were more in non-defaulter group than defaulter group.

According to the descriptive result, half of the respondents were group borrowers and half of them were individual borrowers. In case of group lending joint liability is used as collateral. Most of the group borrowers engaged in the group due to the inability of getting personal guarantee or collateral. More than half of the non- defaulter borrowers invested their loan on expanding already existing business. Most of the borrowers in the non-defaulter group used the entire loan for running the proposed business.

Currently, due to the increasing number of clients and higher cost, the institution does not give any kind of training for the borrowers. Therefore, except few long lasting clients, the whole borrowers were not trained. Continuous follow-up is needed for facilitating the repayment behavior of the client. However, on average loan officers were supervising once within three months. The rule of the institution stated that the clients (especially group borrowers) should be oriented about the credit and related issues by loan officers. But, many respondents had no clear information about interest rate insurance and the like.

Most of the borrowers engaged in *Baltina* & petty market, kiosk & shop and service providing types of business. More than half of the sample respondents did not conduct market study before starting business. Half of the defaulters business was successful but they were not willing to repay their loan. They were changing their behavior after the loan disbursement. Moreover, borrowers were disappearing by changing their business type and location. This is due to the adverse selection problem. Almost half of the defaulters 'did not pay their loan due to loss. However, the institution was unable to ensure this loss did not occur due to making low effort on the business or misuse of the loan (moral hazard problem).

Respondents were identifying the major challenges in the loan repayment process. These are insufficient loan size, unavailability of grace period and weak in following up to retrieve loans. In line with this the institution has many internal and external challenges such as; financial problem, high turnover of employees, insufficient working place, competition and improper interference of third party in the decision of loan approval.

## ***6.2. Conclusion and Recommendation***

In the group lending female borrowers have performed worse loan repayment performance than male. Moreover, the percentage of female defaulters was higher than non-defaulters. So the institution should give special attention on the current female borrowers in the group lending. Business experience helps to enhance the loan repayment rate of the group borrowers. The cumulative effect of borrower's experience has a positive contribution on the success of business and also loan repayment. Thus, the institution focuses on screening of the group members with respect to this.

*Baltina* & petty market, kiosk & shop, service providing, weaving and tailoring, urban agriculture business types were found to significantly enhance the loan repayment performance compared to construction, wood and metal work business. The other factor that is related to the business type is loan size. In order to make business effective, the availability of sufficient loan size is one important factor. Thus, it is recommended to compare loan size with the business proposal of the client before loan disbursement and should revise the rule and regulation of the institution based on the current economic condition of the country.

Age of the borrowers is also significant determinant of loan repayment performance. The elder borrowers have taken responsibility to repay their loan. It is not recommended to exclude the young age groups but the institution should give special attention to those borrowers by continuous follow up and supervision.

The borrowers who save their money in the institution have good repayment performance. Therefore, the institution should motivate the saving behavior of the clients by using different incentives like increasing interest rate for saving and work more on promoting their services. There are more defaulters in group lending than individual lending. The institution also should have strict selection criteria for specially group borrowers. Further investigation is needed to identify the real factors behind.

Although continuous follow up and supervision is important for loan repayment, there is not enough supervision made by loan officers. This is due to the increasing number of clients in the institution. Therefore, it is recommended to make the number of clients and loan officer comparable. In recent years the institution does not give training for the clients. Thus, the institution should work more in this regard by collaborating with different associations. And loan officers should also give the clients the necessary orientation. There are large numbers of borrowers who are able but unwilling to repay. So the institution should identify those unwilling clients and peruse legal action or inform the community and influential persons of unwilling defaulters.

Finally, the institution should focus on the repayment challenges which are stated by the borrowers and take corrective actions. In order to solve the internal and external problems of the institution, the main thing might be improve the financial capacity of the institution and expand

the services. Taking the recommendation in to consideration Addis microfinance institution should strive to increase the loan repayment rate of the borrowers.

This study has its own strength and weakness in terms of the methodology used. The way the sample was selected in both defaulter and non-defaulter groups were random; it is not subject to biasness. In addition each response was weighted with respect to the population size of defaulter and non-defaulter.

The primary data was collected by the researcher itself so that we have confident about the accurateness of the data. Joppe (2000 cited by Golafshani, 2003) stated that the validity of the research is determined on the truthfulness of the research result. The conclusions and recommendation was drawn from the result of the study. On the other hand, mostly survey data is associated with the endogenous problem. Due to this problem, only few variables were used for the econometric model regression. Most of these variables were business types that the borrowers engaged in the institution. The limitation is that we couldn't generalize the findings in the broader sense like in the case of other country's microfinance with respect to some business specific explanatory variables. The variables which have potential to endogenous problem were discussed in detail at the descriptive part rather than in the econometric model.

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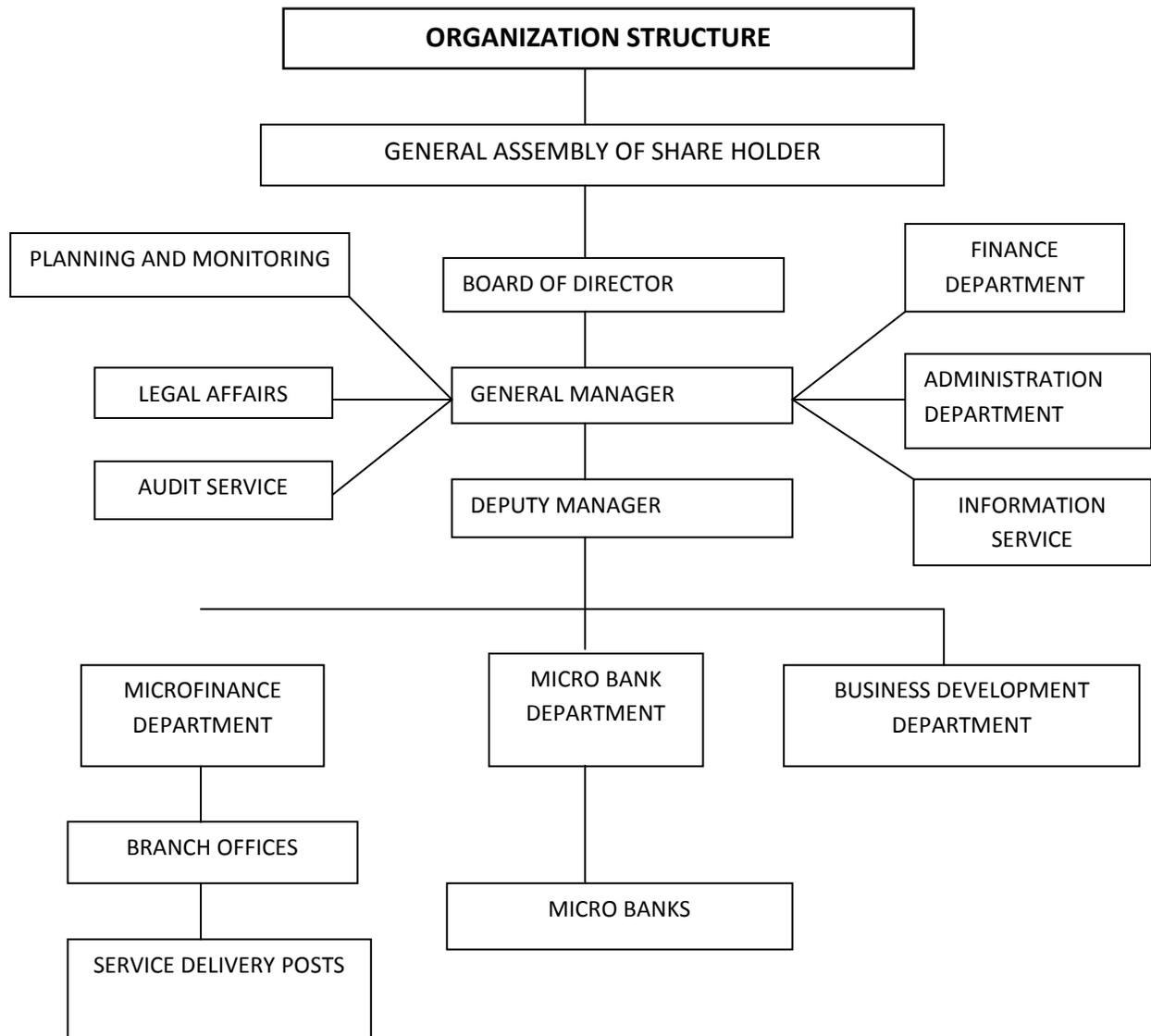
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# Appendix:

Appendix 1: Organizational structure of Addis Microfinance institution (AdCSI, 2002).



Appendix 2: VIF of the continuous explanatory variables used in this study

Variables	R-square	VIF
Age	0.247	1.33
Family size	0.319	1.47
No. of dependents	0.742	3.88
Business experience	0.113	1.13
Dependency ratio	0.743	3.88

Appendix 3: Contingency coefficients for dummy variables

	Sex	Education level	Baltina & street market	Kiosk & shop	Service providing	Weaving & tailoring	Urban Agriculture
Sex	1	-.158	.611	.000	-.224	-.136	-.074
Education level		1	-.152	.006	.091	-.094	-.013
Baltina & street market			1	-.327	-.275	-.247	-.193
Kiosk & shop				1	-.210	-.189	-.147
Service providing					1	-.159*	-.124
Weaving & tailoring						1	-.111
Urban Agriculture							1

## **Determinants of loan Repayment Performance: A case of Addis Credit and Saving Institution, Addis Ababa, Ethiopia**

### **Questionnaire**

#### **I. Personal Details**

1. Sex         Male                     Female
2. Age \_\_\_\_\_
3. Are you literate?     Yes                     No
4. If yes, your educational level is  
 Primary school completed         Junior completed         Secondary school completed  
 Certificate                             Diploma                     Degree & above
5. Marital status  
 Single                     Married                     Divorced     Widowed
6. Total number of family members (Family size) \_\_\_\_\_  
 Age 1- 10    Male \_\_\_\_\_ Female \_\_\_\_\_  
 Age 11- 20    Male \_\_\_\_\_ Female \_\_\_\_\_  
 Age 21- 40    Male \_\_\_\_\_ Female \_\_\_\_\_  
 Age 41- 60    Male \_\_\_\_\_ Female \_\_\_\_\_  
 Age 61 and above Male \_\_\_\_\_ Female \_\_\_\_\_
7. Number of dependants out of the household:  
Children Male \_\_\_\_\_ Female \_\_\_\_\_  
Adults    Male \_\_\_\_\_ Female \_\_\_\_\_
8. Is your business and residence place similar?                     Yes     No
9. Is your residence place near to Addis microfinance institution?  Yes     No
10. Is your business place near to Addis microfinance institution?  Yes     No
11. What is/are your sources of income in the household?  
 From one business  
 From additional (more) business  
 From husband/ wife's monthly salary  
 From more household member salary  
 Others \_\_\_\_\_
12. Do you have saving account?     Yes     No
13. If Yes, where do you save?  
 Addis Credit and Saving institution  
 Other microfinance institution  
 In formal banks  
 Others \_\_\_\_\_

14. For what purpose do you save?

- For expand business
- For personal needs
- For consumption
- For emergency
- For repayment
- Others \_\_\_\_\_

## II. Institutional related questions

1. Is the repayment scheme set by Addis microfinance suitable?  Yes  No

2. If No, what are the reasons?

- The starting time to repay is too early
- The repayment period is short
- The amount of repayment in each month is too much
- Others \_\_\_\_\_

3. What do you suggest to make the repayment scheme suitable?

- To give enough time before starting to repay
- To make the repayment period longer
- Others \_\_\_\_\_

4. Interest rate for credit set by Addis microfinance is:

- High
- Medium
- Low

5. What happens if someone does not repay the loan (default)?

- Loss of personal asset
- Loss of social relationship
- Losing second time loan/repeated loan
- Others \_\_\_\_\_

6. Do you know any people who are not repaying the loan?  Yes  No

7. If yes, what are the characteristics?

- Male  OR  Female
- Youngsters  OR  Adults
- Business borrower  OR  Consumption borrower
- Others \_\_\_\_\_

8. Why would some one not repaying the loan?

- Lack of follow up by loan officer
- Weak legal enforcement for defaulters
- Improper use of the loan
- Lack of interest for doing business
- Others \_\_\_\_\_

9. Did you take training from Addis microfinance?  Yes  No
10. If yes, what kind of training do you take?
- Business training
  - Training on different microfinance service (credit, saving, insurance)
  - Other \_\_\_\_\_
11. By whome this traning was given?
- By loan officer
  - By managers
  - By external bodies
  - Others \_\_\_\_\_
12. Was the traning usefull?  Yes  No
13. How many times the loan officer visits your business and checks your repayment status?
- Two times a month
  - Once a month
  - Once within two month
  - Once within three month
  - Others \_\_\_\_\_
14. Is the loan and repayment supervision made by one loan officer throughout the process (from loan application to final repayment)?
- Yes  No
15. If No, do you know the reason? \_\_\_\_\_
16. Are you served in a good manner by the loan officer and other employees of Addis Microfinance?  Yes  No
17. If No, what is/are the reason(s)?
- There is information gap
  - The loan officers are busy
  - The loan officers are not deciplined
  - Others \_\_\_\_\_
18. Is your and loan officer age lies in simillar age range?  Yes  No
19. If Yes or No, is this matters on the interaction?  Yes  No
20. If Yes, what is/are the impact(s)?
- Easy to communicate
  - Easy to understand each other
  - Others \_\_\_\_\_
21. If No, is it  Above  Below
22. What is/are the impact(s) of this age gap? \_\_\_\_\_
23. Do you have the same gender (sex) with the loan oficer?  Yes  No
24. If Yes or No, is this matters on the interaction?  Yes  No

25. If Yes, what is/are the impact(s)?

- Difficult to communicate
- we have different perception
- Others \_\_\_\_\_

### III. Group lending related questions

1. Are you involved in a group lending?  Yes  No

2. If Yes, why did you engaged in group lending?

- Easy to get loan in a group
- By initiative with one of the group members
- Others \_\_\_\_\_

3. How many members does the group have?

- 5  10  15  Other \_\_\_\_\_

4. How was the group formed?

- Based on the group member interest
- Based on the loan provider (Addis microfinance) interest
- Others \_\_\_\_\_

5. How many of the group member that you know before?

- All of the group member
- Half of the group member
- One forth of the group members
- Others \_\_\_\_\_
- None of them

6. How many of the group members are:

- A. Family members \_\_\_\_\_
- B. Friends \_\_\_\_\_
- C. Neighbors \_\_\_\_\_

7. Do you feel responsibility to the other members of your group related to loan repayment?

- Yes  No

8. If Yes, what are the main reasons?

- Social capital i.e. trust, cooperation, personal ties
- Fear of default
- Others \_\_\_\_\_

9. What actions do you take when the group members didn't repay their loan?

- Put social sanction,
- Inform to the loan provider,
- Repay for someone else
- Others \_\_\_\_\_

**IV. Business related questions**

1. In which types of business currently engaged?
  - A. Urban Agriculture
    - Animal husbandry
    - Horticulture
    - Poultry
    - Bee farming
    - Others \_\_\_\_\_
  - B. Small enterprise
    - Textile
    - Food Processing
    - Metal work
    - Construction
    - Others \_\_\_\_\_
2. How long have your business experiance?
  - 1 year    2 years    3 years    4 years    others \_\_\_\_\_
3. Did you conduct market study (servey) before starting your business?
  - Yes       No
4. If No, why? \_\_\_\_\_
5. Are you able to get (access) business information related to your business?
  - Yes       No
6. If Yes, how to get this information?
  - From various media (TV, radio, newspaper, etc.)
  - From friends
  - From the loan provider (Addis microfinance institution)
  - Others \_\_\_\_\_
7. Is your business successful?  Yes    No
8. If No, what do you use to repaing your loan?
  - From my personal asset (building, equipment...)
  - From other income source
  - Don't want to repay
  - Others \_\_\_\_\_

## V. Loan & Repayment related questions

1. Why do you borrow from Addis microfinance?
  - For doing new business
  - For expanding already existing business
  - Others \_\_\_\_\_
2. How many times did you borrow from Addis microfinance institution?
  - 1     2     3     4     Others \_\_\_\_\_
3. How long it takes the first application and loan collection?
  - One week     Two week     One month     other \_\_\_\_\_
4. What is/are the reason(s) for these?
  - loan officers are qualified
  - Speedy procedure (short process)
  - Due to long procedure (process)
  - Many people apply for credit at one time
  - The loan officers are not willing to finish within short time
  - Others \_\_\_\_\_
5. How much money do you borrow from Addis MFI? \_\_\_\_\_
6. Did you spend the entire loan for running your business?  Yes     No
7. If No, for what purpose do you spent?
  - Consumption
  - Education for children
  - Health
  - Others \_\_\_\_\_
8. Do you take the preferred amount of loan from Addis microfinance as you requested?
  - Yes     No
9. If No, is it  Lower     Higher
10. Is the amount of loan taken from Addis microfinance enough for doing all your business?
  - Yes     No

11. If No, what solution do you take?

- Borrow from other Microfinance institutions
- Borrow from family or friends
- Borrow from informal money lenders
- Borrow from formal banks
- Used by the available amount of money
- Others \_\_\_\_\_

12. Do you borrow from other sources for various purposes (consumption, emergency...)?

- Yes     No

13. If Yes, from where do you borrow?

- Borrow from other Microfinance institutions
- Borrow from family or friends
- Borrow from informal money lenders
- Borrow from formal banks
- Others \_\_\_\_\_

14. Which loan do you repaid first and why?

- Loan from Addis microfinance?
- Loan from other Microfinance institutions
- Loan from family or friends
- Loan from informal money lenders
- Loan from formal banks
- Others \_\_\_\_\_

15. Are you repaying your loan?     Yes     No

16. If Yes, what is your repayment status?

- A. Fully repaid
  - On time     Too late
- B. Partially repaid
  - On time     Too late

17. Are you benefited by fully repaying your loan?     Yes     No

18. If yes, what are the benefits?

- Access to the next higher loan
- Build good relationship with the loan provider
- To make the family stable
- Others \_\_\_\_\_

19. If your answer is No for # 12, what is/are the reason(s)?

- The cost of doing business is higher than the revenue
- Weak legal enforcement for defaulters
- Low supervision by the loan officer of ADCSI
- personal problem (like sick.....)

- Improper use of the loan
- Others\_\_\_\_\_

**VI. General questions**

1. If you face any difficulties and challenges during the repayment process, please mention the major challenges

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2. What is your overall opinion about Addis microfinance institution credit scheme?

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