



**WOKITE UNIVERSITY**  
**COLLEGE OF AGRICULTURE AND NATURAL RESOURCE**

**DEPARTMENT OF AGRICULTURAL-ECONOMICS**

**DETERMINANTS OF LOAN REPAYMENT PERFORMANCE OF SMALLHOLDER  
FARMERS IN CASE OF CHEHA WOREDA**

**A Senior Research Project Submitted to Department of Agricultural-  
Economics**

**PREPARED BY:**

- 1. TIRNGO GASHAW:.....ID NO AGR 296/09**
- 2. TIRUSET GIZAW.....ID NO AGR 300/09**

**ADVISOR; Mr. DESALEGN. (PHD)**

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## **ABBREVIATIONS AND ACRONYMS**

ADLI	Agricultural Development Led Industrialization
CSA	Central Statistics Authority
CWOARD	Cheha Woreda Office of Agricultural Rural Development
MFI	Micro-financial institutions
NGOs	Non-Governmental Organizations
PPS	Probability Proportional Sample
UNDP	United Nations development Program
SMFI	Small micro-financial institutions

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## **ABSTRACT**

*The aim of this study was to analyze determinants of loan repayment performance of smallholder farmers in Cheha Woreda SNNPRs. As a specific objective, this study describes the barrier of farmer's loan repayment performance and factors affecting loan repayment performance in the study area. Purposive sampling technique was used to select Cheha woreda and simple random sampling technique was used to select the sample kebele. For this study a total of 150 households were selected purposively and from these 60 households were selected randomly followed by probability proportional sample from each kebele. Both primary and secondary data were collected for this study. Primary data were collected by direct interview of sample respondents; whereas, secondary data were also collected from published and unpublished documents. The data were gathered both qualitative and quantitative nature and it was analyzed by using econometric model and descriptive statistics like percentage and frequency. The smallholder farmer who do not participate in loan repayment have many constraints like:-Lack of education, inadequate extension contact and access of land. In general as these research indicates most samples smallholder farm are who are defaulter of loan are on the problem of low land holding size, small family size , inadequate extension service and their livelihood is not sufficient for their family this lower repayment capacity of the farmers and the higher the probability to be default*

**Key words:** Loan repayment performance; credit Logit Model, Default, non Default.

# 1. INTRODUCTION

## 1.1. Background

Many financial institutions in developing countries provide financial services such as saving and credit to aid several smallholder enterprises. This is an effort in line with the “Millennium development goals” which seeks to reduce poverty by 50% by the year 2015 (Solomon, 2013). The provision of loan has increasingly been regarded as an important tool for raising the incomes of urban as well as the rural populations, mainly by mobilizing resources to more productive uses (Kibrom, 2010).

Improved financial access focusing on rural credit was one of the crucial points of the Agriculture Development Led Industrialization (ADLI) Policy (Samson, 2003) and one of the development strategies that should be implemented and supported to attain the ambition of reducing world poverty by half (UNDP, 2005). Generally, the accessibility of a good financial service is considered as one of the engines of economic development and the instruments to break the vicious circle of poverty (Sisay, 2008).

Ethiopia's agricultural sector to produce at subsistence level with incomes not adequate to cover the farmers' consumption and expenditures and allow them to invest back in to their farms. Where subsistence agriculture prevails and where small-holder farming dominates the overall national economy, farmers often face a scarcity of capital (saving) to adopt new agricultural technologies. Hence, short-term credits with favorable terms for seasonal inputs like fertilizer, improved seeds, pesticide and herbicides would generally be favored because better return would be achieved quickly within the crop season. The use of credit has been envisaged as one way of promoting technology transfer, while the use of recommended farm inputs is regarded as key to agricultural development (Tomoya and Takashi, 2010).

In subsistence agriculture and low-income countries like Ethiopia, where smallholder farming dominates the overall national economy, smallholder farmer's work on 96.3 percent of the total cultivated area and produce over 95 percent of the national crop production (CSA, 2007). However, smallholder farmers face severe shortage of financial resources to purchase productive agricultural inputs. The prices of inputs rise very rapidly every year. Consequently, the hope of the subsistence farmers on financial institutions for credit has become substantially higher in the recent times (Milion *et al.* 2012). Smallholder farmers in Cheha woreda also face such severe problem of shortage of financial resource to purchase productive

agricultural input like improved seed, fertilizer and other agro-chemicals that used for rapid growth of agricultural productivity.

Development and adoption of new agricultural technologies and the use of credit facilities is vital for rapid growth in agricultural productivity. However, with the introduction of new production technologies, the financial needs of farmers increased by many-fold (Ayalew and Lemma, 2013).

Smallholder farmers face severe shortage of financial resources to purchase productive agricultural inputs. The prices of inputs rise very rapidly every year. Consequently, the hope of the subsistence farmers on financial institutions for credit has become substantially higher in the recent times (Million *et al.* 2012). Generally, the accessibility of a good financial service is considered as one of the engines of economic development and the instruments to break the vicious circle of poverty (Sisay, 2008). There is no doubt about the crucial roles of credit in economic development. But the increasing default rate is one of the major problems of the lending institutions (Mohammad, 2009). Failure by a farmer to repay their loans on time or to repay them at all has been a serious problem faced by both agricultural credit institutions and smallholder farmers. Loan default problem has been a tragedy as it leads to a system failure to implement appropriate lending strategies and credible credit policies. In addition, it discourages the financial institutions from refinancing the defaulting members, which put the defaulters once again into vicious circle of low productivity (million *et al.*, 2012).

## **1.2. Statement of the problem**

Financing of agricultural inputs and labor wages requires liquid cash that often is not readily available with the smallholder farmers. Therefore, it is essential to expand the status of rural credit at large to improve agricultural productivity (Sisay, 2008). There is no doubt about the crucial roles of credit in economic development. But the increasing default rate is one of the major problems of the lending institutions (Mohammad, 2009). However, poor loan repayment in developing countries has become a major problem in agricultural credit administration, especially to smallholders who have limited collateral capabilities (Okorie, 2004).

It is obvious that many rural credit schemes have sustained heavy losses because of poor loan collection. And yet a lot more has been dependent on government subsidy to financially cover the losses they faced through loan default (Firafis, 2014).

According to Abreham (2002), borrowers involved in the agricultural sector are more defaulters compared with other sectors like industry and service

According to Jamal's (2003) research result shows that urban borrowers have better repayment rate than rural borrowers. The loan default problem has had bad effects leading to systems failure in the implementation of appropriate lending strategies and credible credit policies. In addition, it discourages the financial institutions from refinancing the defaulting members, which pits the defaulters in a vicious cycle of low productivity. Therefore, a thorough investigation of various aspects of loan defaulting is important for both the policy maker and the lending institutions. Since there is low repayment performance in rural borrower, it discourages the lender to promote and extend credit to large and fragmented farm households. Although there are such severe problems related to loan repayment in Cheha woreda factors that affect loan repayment performance of small holders farmers had not been studies in this area. Therefore, to fill appropriate lending strategies and procedures, information on relative importance of the factors, which affect smallholder farmers' loan repayment performance, is necessary in Cheha Woreda

### **1.3. Objective of the study**

#### **1.3.1. General objective**

- ❖ The overall objective of the study is to analyze the determinants of loan repayment performance of smallholder farmers in Cheha woreda.

#### **1.3.2. Specific objectives**

- To describes the barrier of farmer's loan repayment performance.
- To identify factors influencing loan repayment performance in the study area

### **1.4. Research questions**

- ✓ This study was answered the following basic research questions
- ✓ What is the source of credit use in the study area?
- ✓ What are the factors influencing loan repayment performance in the study area?

### **1.5. Significance of the study**

Other researchers may use the research outcome because it helps them to identify the problem related to credit repayment performance. It was give them background information on smallholder farmers, marketing and production activities of their products, and other social

and economic variables influencing the repayment ability. As output of the analysis, identifying factors that contribute to successful loan repayment was help policy makers to formulate successful credit policies and programs that again help in allocating financial resources effectively and efficiently.

#### **1.6. Scope and limitation**

The study conducted in Cheha Woreda in Guraghe Zone. The study focused on to describes the barrier of farmer's loan repayment performance and factors influencing loan repayment performance in the study area. This study was targeted only formal financial institution but not informal institution. Also it was conducted only in three Kebele of Cheha Woreda because of lack of budget, time and other opportunity costs.

## **2. LITERATURE REVIEW**

### **2.1 Theoretical review**

#### **2.1.1 Credit definition and concepts**

According to the free on line dictionary, Encyclopedia, credit means Faith and it comes from the Latin credito. An agreement, by which something of value-goods, services, or money-is given in exchange for a promise to pay at a later date.

According to Aryeetey (1995) as cited in Gerald and Deogratus (2013) the terms loan and credit are used interchangeably and defined as credit is an arrangement in which a lender gives money to a borrower, and the borrower agrees to repay the money, usually along with interest, at some future point(s) in time. He also adds that, there is a predetermined time for repaying a loan, and generally the lender has to bear the risk that the borrower may not repay a loan.

Credit is a transaction between two parties in which one, acting as creditor or lender, supplies the other, the debtor or borrower, with money, goods, services, or securities in return for the promise of future payment. As a financial transaction, credit is the purchase of the present use of money with the promise to pay in the future according to a pre-arranged schedule and at a specified cost defined by the interest rate (Sisay, 2008).

Credit is defined as an exchange of goods and services for a promise of the future payment. It also indicates that credit is necessary in a dynamic economy because of the time that elapses between the production of a good and its ultimate sale and consumption and credit bridges this gap (Amare, 2005).

According to Abebe (2011) it is the power or ability to obtain money, through the borrowing process, in return for a promise to repay the obligation in the present. According to these authors, credit represents the actual or prospective debtor's power or ability to affect an exchange by offering his promise for future payment. Credit is necessary in a dynamic economy because of the time that elapses between the production of a good and its ultimate sale and consumption.

#### **2.1.2 Purpose of credit**

Finance is central to establish and operate productive activity, a prerequisite to proper organization of production, acquiring of investment assets and/or raw materials and development of marketing outlets etc. (Abreham, 2002).

Credit is necessary in a dynamic economy because of the time that elapses between the production of a good and its ultimate sale and consumption (Solomon, 2013). Credit is the key input in every development program; this is particularly true for rural development because so long as sufficient credit is not provided to the development programs of poor sections of the society, the goal of development cannot be achieved (Abebe, 2011).

According to Amare (2005) high population pressure in rural areas of developing countries like Ethiopia, bringing of additional productive land under cultivation is difficult, implying the need for improving farm level productivity through intensification. This involves the use of improved farm inputs such as fertilizers and selected seeds besides improved tillage and husbandry practices. These inputs are not available on the farm and some farmers are not able to purchase them due to their meager resources. Moreover, most of the commercial inputs are expensive and hence smallholder farmers cannot afford to buy them from their own cash earnings. It is, therefore, generally acknowledged that rural credit can improve smallholder's farm productivity through use of purchased farm inputs. Generally, credit removes a financial constraint and helps accelerate the use of new technologies, increases productivity, and improves national and personal incomes (Abebe, 2010).

### **2.1.3 Sources of credit**

#### **Formal financial institutions**

The formal sources are financial institutions that are set up legally and engaged in the provision of credit and mobilization of savings. These institutions are regulated and controlled by the National Bank of Ethiopia. In the Ethiopian context formal financial sector includes National Bank of Ethiopia (NBE), commercial banks (owned by private and public), Development Bank of Ethiopia , credit and savings cooperative, insurance companies (both public and private) and microfinance institutions (owned by regional governments, NGOs, associations and individuals), Construction and Business Bank , and the recently proliferating private commercial banks like Dashin, Wogagen, Abysinia, Awash International, Nib-International, etc; and the nonbanking financial institutions like the public and private insurance companies (Anbes,2003)

#### **Micro-financial institutions**

Microfinance is defined as the provision of financial services to low-income clients, including Consumers and the self- employed, who traditionally lack access to banking and related

services (Mohad, 2010).The objective of microfinance institutions as development organizations are to service the financial needs of un-served or underserved markets as a means of meeting development objectives such as to create employment, reduce poverty, help to develop existing business or diversify their activities, empower women or other disadvantaged population groups, and encourage the development of new business ( Bayeh, 2012).

While the end of 2011, the total number of MFIs has risen to 31 with 433 branches and 598 sub branches. At the same year the study shows 10 – 25% of the total micro finance demand in the country. The institutions have extended total credit of 6.9 billion ETB to 2,470,611 active borrowers (Shaik and Tolosa, 2014).

### **Informal financial institution**

The informal financial sector often embraces a wide group of individuals and institutions whose financial transaction are generally not subject to direct control by the country's key monetary and financial policy instruments. Individual economic entities in the informal sector include moneylenders, money keepers, tradesmen, friends and relatives, neighbors, etc. (Amare, 2005)

According to G/Yohannes (2000), compared with the formal financial institutions, informal lending is by far the most important source of finance to the rural and urban population and it has increased prominence mainly due to restrictive rules and regulations of the formal financial sector. The operations of the informal sector derive their rules and regulations from the country's culture and customs. Informal sector transactions are conducted on the basis of trust and intimate knowledge of customers.

#### **2.1.4 Loan default and its problems**

Loan default is defined as failure to pay a debt or a loan at the right time. On the contrary, non-default is defined as payment of a debt or a loan at the right time (Solomon, 2013).According to Samuel (2011) as cited in Asnake (2014), also divided the causes of default into two categories: (i) weaknesses from the lender side such as absence of post-disbursement monitoring system, lack of technical assistance given to the microfinance recipients, inexperienced field workers, burdensome immediate weekly payment system, lack of common accessible database of the microfinance recipients. (ii) moral hazard problem on the borrower side such as hiding business, family member's illness.

Increasing defaults in the repayment of loans may lead to very serious implications. For instance, it discourages the financial institutions to refinance the defaulting members, which put the defaulters once again into vicious circle of low productivity (Zelalem *et al.*, 2013).

## **2.2. Empirical literature review**

### **2.2.1 Factors affecting loan repayment performance**

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

According to Abreham (2002) Source of income, education, and work experience related economic activities before the loan affected loan repayment positively. On the other side, extended loan repayment period was influenced the repayment performance negatively.

Samuel (2011) also recommended that education, income, loan supervision, suitability of repayment period and availability of other credit sources were important and significant factors that enhance the credit repayment performance, while credit diversion and credit/loan size were found to be significantly increase credit default.

According to Bekele (2001), in his Ethiopian case understand, revealed that off-farm income influenced the loan recovery of farmers negatively. According to him, larger proportion of defaulter households participated in off-farm activities than the non-defaulters. Households who exercise off-farm activities probably gave less attention to farm affairs as income was generated from different angles. In other words, households who generate income form off farm sources tend to be will full defaulters, because the punishment, which could be inhibition of access to credit in the following season, may be less painful to them as they are less dependent on farm activities. The other possible explanation is that households who take part on off-farm activities may divert input loans to supplement the off-farm business.

According to Belay (2002), used maximum likelihood estimates of the logistic regression model and showed that farm size was important factor influencing the loan repayment performance of rural women in Eastern Ethiopia. That is, the total farm size, which is a proxy for a host of factors including wealth and income, has a significant and positive impact on loan repayment performance. Likewise, Matin (1997) by his study of repayment performance

in Grameen Bank, reported that the total operated land holding of the households was negatively associated with default after a certain level.

Bekele *et al* (2003), in his Ethiopian case study revealed that, even if the variable was statistically insignificant there was a negative relationship between educational status of household head and household's loan repayment performance. According to him the reason was that literate farmers were on average younger than the illiterate ones and that older farmer have the tendency to accumulate more wealth and were better able to pay the loans they borrowed.

### 3. RESEARCH METHODOLOGY

#### 3.1. Description of the study area

##### Location of Cheha woreda in Gurage zone

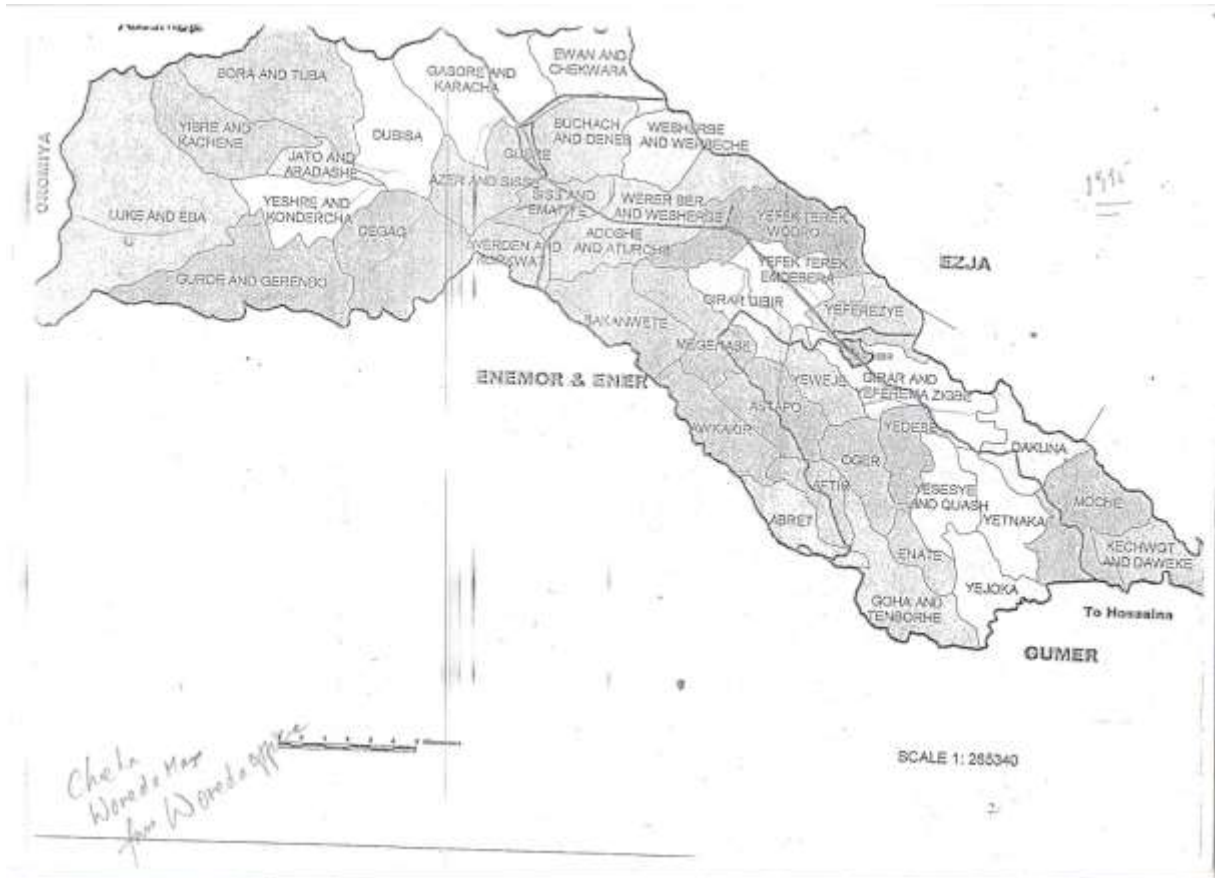


Figure 1 map of Cheha woreda in Gurage zone

Cheha Woreda was one of the woreda in Gurage zone of (SNNPRS) in southern Ethiopia. It has common boundaries with Abeshge Woreda at north, Geta and Enemor Woreda at south, ezha and Gumer Woreda at east and yemspecial Woreda and Oromiya region at west. It located 180 km, south west of Addis Ababa and 22 km south west of Wolkite town. Population of the area male 67509 and female 70156, which total was 137665, from this rural population male 62079 and female 64865 which total was 126,944. Economic activity of the area was concern with agricultural activity, the main animal are 110280, equine 2427, goats and sheep 12672, then total animal population was 125379. topgraph of the area, attitude of this woreda range from 1710-2800 Mater above sea level. From the total area of woreda

distribution of land use in hectare cultivated land 25792(13106 annual crop and 12686 perennial crop), grazing land 1465, forest land 5877, miscellaneous land 5163, potential cultivated land 3171 and uncultivable land (degraded land) 2504 hectare, which total land of woreda in hectare was 43972. The main crops of the woreda are divided in two categories: one is perennial crop (ensset, coffee, mango etc.) and other annual crop (teff, wheat, maize, etc.) Agro climate of the woreda was dega 20% and weynadega 80%. The temperature of this maximum 27 C° and minimum 18 C°. Cheha woreda is 39 rural Kebele and 2 towns Kebele, total 41 Kebele and estimate its total population of the area are male 67509 and female 70156, which total population are 137665(CSA, 2007).

### **3.2 Sampling Size and Sampling Procedures**

According to the basic principle, the availability of prior information about the target population in the study area and the overall objective of a given study determine the decision of choosing a specific sampling technique. For the achievement of the objective of this research, sampling techniques were used to select Cheha Woreda from Gurage zone purposively.

We have selected target population from three kebeles (Endebara, Awan, and Yefereziye) using simple random sampling technique. Accordingly, 150 households are randomly selected. In order to obtain the sample size that could represent these targeted populations, we have used Yamane's formula of sample size.

A stratified sampling procedure is used to select sample households. At the first stage three kebeles randomly selected from 3 kebeles using probability proportion to size. From these three kebeles, a total of 60 households randomly selected using the probability proportion to size. From the total sample households, 30 and 30 are defaulter of loan and non-defaulter of loan respectively using every household in the selected kebeles given equal chance of being selected.

Due to a number limitation like time constraint, transportation cost, and others facilitation problems, we minimize the number of household respondents to 60 by simple random method in order to simplify such limitation.

Then by using proportionality the number of respondent from the three available kebele as follows

$$n_1 = \frac{N_1}{N} \times n = \frac{50}{150} \times 60 = 20$$

$$n_2 = \frac{N_2}{N} \times n = \frac{50}{150} \times 60 = 20$$

$$n_3 = \frac{N_3}{N} \times n = \frac{50}{150} \times 60 = 20$$

$$n = n_1 + n_2 + n_3$$

$$n = 20 + 20 + 20 = 60 \text{ households}$$

$$N = 50 + 50 + 50 = 150 \text{ households}$$

Where  $n_1$  = sample size from Endebera Kebele

$n_2$  = sample size from Yefereziye Kebele

$n_3$  = sample size from Awan Kebele

$n$  = total number of sample size in the three kebele

$N_1$  = total number of households in Endebera Kebele

$N_2$  = total number of households in Yefereziye Kebele

$N_3$  = total number of households in Awan Kebele

$N$  = total number of households in the three kebele.

#### Proportionality of the three Kebele

Kebele	Credit user	Proportional
Endebara	50	20
Yefereziye	50	20
Awan	50	20
Total	150	60

Then to determine determinants of credit user were interview 60 households based on their proportionality and finally to analyze determinants of loan repayment performance we were only targeted credit users purposively

### 3.3 Methods of data collection

The primary data was collected through structured questionnaires by household interview schedule. Thus, primary data was obtained from sample respondents using household interview survey method to get firsthand information about determinants of loan repayment performance. Secondary data were gathered through reviewing, examination of documents, reports and records of published documents.

#### 3.4.1 Method of Data Analysis

The data has been collected from community of Cheha Woreda by using questionnaires and interview using primary and secondary source of data. The data was analyzed using descriptive analysis such as mean, frequency, and percentage.

### 3.4.2 Econometric Model

The econometric model that was used to empirically identify the factors behind formal sources of credit loan repayment was Logit Model. This model was selected because credit loan repayment performance, in which the dependent variable is binary, takes the value 0 and 1 for defaults and non-defaults respectively. Hosmer and Lemeshew (1989) indicated that the logistic distribution (logit) has the advantage over the others in the analysis of dichotomous outcome variables; it is very flexible and the most easily-used model from a mathematical perspective, given its simplicity of calculation. Its probability lies between 0 and 1 and results in a meaningful interpretation. Hence, the logistic model was chosen for this study. The cumulative logistic probability model is econometrically defined as follows (Pindyek and Rubinfeld, 1981):

$$Y_i = a + \sum_{i=1}^n \beta_i x_i + u_i$$

Where  $Y_i$  = the dependent variable that means probability of Loan default Rate

$X_i$  = Vector of explanatory Variables.

$\beta_i$  = Vector of Unknown parameters.

$U_i$  = Disturbance or Error term, that represent all factors that affect the probability loan Default rate but those which are not taken in to account explicitly.

## 3.5 Variables Specification

### 3.5.1 Dependent Variable

The dependent variable of this study was the probability of loan repayment performance. It is a binary or dichotomous variable representing the payment status of households. This study was coded 0 for defaulter household and 1 for non-defaulter households

### 3.5.2 The explanatory variables.

The following independent variables were identified as the principal ones in discriminating between non-defaulters and defaulters

**Age:** This variable can be measured in years in which the younger the age the higher may be his/her productivity and/or knowledge, and the higher the age the lower his/her productivity may be. These situations lead to non-default and default respectively. On the other hand, the older person may have a lot of experience in farm business, which may lead to non-default, and the younger one may have limited experience attributed to his age which may lead to default. Hence, either a positive or a negative relationship was expected

**Sex of Borrower:** There are controversial statistics among many microfinance specialists that uphold that females are better payers than male borrowers, taking into consideration their being more entrepreneurial, which results from more responsibilities in the internal affairs of a household. However, others expect that female headed households are less knowledgeable in formal credit and hence could be defaulters for they know little about the punishment of loan default. Hence this variable was expected to have either a positive or a negative relationship with loan default rate.

**Education:** is the number of years of schooling attained by the borrowers. There were illiterate borrowers, borrowers in the primary educational level, borrowers in the secondary educational level, and borrowers in the tertiary educational level. This factor was expected to have a negative relationship with loan default rate, because higher educational levels enable borrowers to realize more complex information, go on business records, perform basic cash flow analysis, and make the right business decisions. Hence, borrowers with higher level of education were expected to have higher repayment rates. So this variable would have a negative relationship with loan default rate.

**Extension Contact:** This refers to the number of contacts with extension agents that the respondent made in the month. Farmers who have a frequent contact with extension agents are expected to have more information that influence farm household's demand for credit from the formal sources. Therefore, it was hypothesized that this variable positively influences farmer's access to use formal credit.

**Total family size:** is the total number of family members in the household. The higher the number of family members, the greater was the accessible workforce for production purposes, and therefore the probability to default was expected to be less. Therefore, families with sufficient labor force were expected to be non-defaulters and families with inadequate labor force were expected to default. So this variable was expected to have a negative relationship with loan default rate.

**Loan size:** If the amount of loan released is enough for the purposes intended, it has a positive impact on the borrower's capacity to repay. If, on the other hand, the amount of loan exceeds what the borrower needs and can handle, it is more of a burden than a help, thereby undermining loan repayment. Therefore this variable was expected to have either a positive relationship with loan default rate.

**Fertilizer use:** The wise usage of fertilizer is one of the best investments a farmer can make. That means, with efficient use of fertilizer, the farmer expects a higher return on each unit of money spent on fertilizer. Therefore, this variable was expected to have a negative relationship with the loan default rate.

**Land size :** It is continuous variable. The total farm size (in hectares) owned by the family. Farmer with more hectares of land is expected to be better off in terms of loan repayment performance. This was because, of other factors of production increase, large farm size was give higher production that was enable the borrower to repay his/her loan. Therefore, this variable is expected to have a positive relation with the dependent variable. On the other hand people who have small land holding, no repayment performance.

It was expected that farmers with larger farms to participate less frequently in loan repayment performance activities since farmers with large farm size where going to participate in agriculture activities

**Saving habit:** Farmers usually save from their proceeds for the purpose of consumption facilitation throughout the year, accumulation of wealth, and for contingency purposes in case of bad harvest or accident. Saving in the form of livestock, grain, jewelry and cash enables the farmers to easily liquidate them and fulfill the contract entered when prices of agricultural products are not conducive. The lower the amount of savings, the lower the capacity to repay, as opposed to the case in which farmers have a higher amount of savings. Therefore this variable was expected to have a negative relationship with loan default.

**Number of livestock owned:** Refers to the total livestock owned by the respondent. In farming area livestock are part of the operation. It may serve as a proxy for oxen ownership, which is important variable have a positive influence on loan repayment performance.

**Non - farm income:** Was defined as the amount of income (in Birr) generated from activities other than crop and livestock production. These include petty trading, charcoal selling, firewood selling and others. These additional sources of income would encourage the borrowers to settle their debt even during hard times. On the contrary, non farm income may increase willful default, as income is generated from various sources, the borrowers may become reluctant and not give more emphasis to loan repayment (Zeller and Sharma, 1996).Therefore, non farm income, as a variable is hypothesized to have either positive impact on the loan repayment

**Table1: Hypothesized predictor variables on loan repayment**

No	Factors(determinants)	Variable type		Impact on loan repayment
		Continuous	Categorical	
1	Age	✓		+
2	Sex of borrower		✓	+
3	Education		✓	-
4	Fertilizer use		✓	-
5	Total family size	✓		-
6	Land size	✓		+
7	Extension contact		✓	+
8	Non- farm income	✓		+
9	Loan size		✓	+
10	Saving habit		✓	-
11	Number livestock owner ship	✓		+

## 4. RESULTS AND DISSCUSION

In this part the result of the study are discussed and presented. The result of the study presented by using descriptive statistics and econometric model. The descriptive analysis made by using tools such as tables, percentage and frequence distribution. Loan repayment performances of smallholder farmers are influenced by demographic, economic and social characteristics of households. To determine the best subset of explanatory variables that are good predictors of the dependent variable, used the logistic regressions were estimated using by STATA. This section report is on the background and the difference between defaulters and non-defaulters of loan repayment performance on variables. Loan repayment performance by smallholder farmers to the context of this study is measured in terms of defaulter and non-defaulter of loan.

### 4.1 Demographic characteristics of sample households

#### 4.1.1 Sex of the Respondents

**Table 1: Loan repayment performance of sex of borrower**

Sex of the borrower	Loan repayment performance					
	Non defaulter		Defaulter		Total	
	No	%	No	%	No	%
Female	14	40	4	16	18	30
Male	21	60	21	84	42	70
Total	35	100	25	100	60	100

Source own survey (2019)

The sample was composed of both male and female-headed households. The total sample household heads 70 percent were male household heads and 30 percent were female household heads. And also from the total of households 40% of the non-defaulters' and 60% of the defaulters were female households and also 16% and 84% of the male households were non-defaulters and defaulters respectively. From this study the loan repayment performance

of females were very low. So governments to encourage female's participations in the loan repayment performance.

#### 4.1.2 Education of the Respondents

**Table 2: Loan repayment performance of education**

Education	Loan repayment Performance					
	non default		default		Total	
	No	%	No	%	No	%
illiterate	14	40	12	48	26	43.33
primary school	9	25.72	7	28	16	26.67
secondary school	5	14.28	3	12	8	13.33
tertiary school	7	20	3	12	10	16.67
Total	35	100	25	100	60	100

Source own survey (2019)

Education is an important determinant of loan repayment. From the total survey, 43.33% of the household heads were illiterate, 26.67% of primary, 13.33% of secondary and 16.67% tertiary school education. About 40%, 25.72%, 14.28% and 20% percent of non- defaulters were illiterate, primary, secondary and tertiary school education level respectively. While 48%, 28%, 12% and 12% of defaulters were illiterate, primary, secondary and tertiary school educational level respectively. Therefore, the survey result shows that the difference between non-defaulters and defaulters with regard to educational level of household head educated group were largely participate in the loan repayment.

### 4.1.3 Extension contact

**Table.3 Extension contact of the respondent**

Extension contact	loan repayment performance					
	Non defaulter		defaulter		Total	
	No	(%)	No	(%)	No	(%)
Yes	26	74.28	11	44	37	61.67
No	9	25.72	14	56	23	38.33
Total	35	100	25	100	60	100

Source own survey result, 2019

According to the above table, from 35 loans Non-defaulter, 74.28% can get access of extension contact and the rest 25.72% have not get access of extension contact. Whereas from 25 loan defaulter 44% only get access of extension contact and 56% does not get access of extension contact as a result they cannot repay loan. As the number of contact days of the household head increase, the repayment capacity of smallholder farmer's attitude also increases. And also increase the contact day of stallholders' farmers with the extension agent increases the probability of being a non-defaulter. This implies that, farmers with more access to technical assistance on agricultural activities were able to repay their loan as promised, more than those who had less or no assistance at all. The reason for this is that, farmers who have frequent contact with development agents are better informed about markets and production technologies. As a result, they are motivated to repay their loans on time.

#### 4.1.4. Fertilizer use of respondent

**Table 4; Fertilizer use of respondent**

Fertilizer use	Loan repayment performance					
	non default		default		Total	
	No	%	No	%	No	%
yes	15	42.85	16	64	31	51.67
no	20	57.15	9	36	29	48.33
Total	35	100	25	100	60	100

Source own survey result, 2019

The total sample household get 51.67 percent were the fertilizer use and 48.33 percent were . And also from the total of households 42.85% of the non-defaulters' and 64% of the defaulters were a fertilizer use and also 57.15% and 36% of the fertilizer use households were non-defaulters and defaulters respectively.

#### 4.1.5. Saving habit of the respondent

**Table 5; saving habit of the respondent**

Saving habit	Loan repayment performance					
	non-default		default		Total	
	No	%	No	%	No	%
yes	8	22.86	6	24	14	23.33
no	27	77.14	19	76	46	76.67
Total	35	100	25	100	60	100

Source own survey result, 2019

The result in Table5 showed that the saving habit of the loan repayment performance non defaulters was 8 or 22.86% had saved and 27 or 77.14% non defaulters had not saved and the total saved not saved was 35. The number of defaulters who had saved was 6 or 24% and defaulter not saved was 19 or 19% total 25. Finally the total number of defaulter and non

defaulter having saving habit were 14 or 23.33% and the total number of default and non default were 46 or 76.67% shows not saving habit.

#### 4.1.6 Loan repayment of respondent

**Table 6: Loan size of the respondent**

Loan size	Loan repayment performance					
	Non-default		Default		Total	
	No	%	No	%	No	%
yes	22	62.86	11	44	33	55
no	13	37.14	14	56	27	45
Total	35	100	25	41.67	60	100

Source own survey result, 2019

The result in Table6 showed that the loan size of the loan repayment performance non defaulters was 22 or 62.86% had loan size and 13 or 37.14% non defaulters had not loan size and the total saved not saved was 35 or 100%. The number of defaulters who had loan size was 11 or 44% and defaulter not loan size was 14 or 56% total 25 or 100%. Finally the total number of defaulter and non defaulter having get loan size were 33 or 55% and the total number of default and non default were 25 or 45% shows not get loan size.

#### 4.1.7 Land size of the respondents

**Table 7. land size of the respondents**

Land size in ha	loan repayment performance					
	Non defaulters'		defaulters'		Total	
	No	(%)	No	(%)	No	(%)
<1	21	60	12	48	33	55
1-2	7	20	8	32	15	25
2-3	6	17.15	5	20	11	18.33
3-4	1	2.85	0	0	1	1.67
Total	35	100	25	100	60	100

Source own survey result, 2019

According to the above table the proportion of land size owned by non-defaulters house hold is greater than the proportion of land owned by defaulters household. To see this variation, land size owned by household type was categorized under different sizes. The majority of both households have less than 2 ha of land. Even though the majority of both households owned less than 2 ha, the proportion of households who owned less than 1 ha is different across house hold type. This indicate borrowers with large farm size were non-defaulters

#### 4.1.8 Family size of the Respondents

**Table 8 . Family size of the household respondent**

Family size	loan repayment performance					
	Non defaulter		Defaulter		Total	
	No	(%)	No	(%)	No	(%)
1-3	5	14.3	15	60	20	33.3
4-6	10	28.5	6	24	16	26.7
7-9	19	54.3	4	16	23	38.3
Above 9	1	2.9	0	0	1	1.7
Total	35	100	25	100	60	100

Source own survey result, 2019

From the above table results also revealed that 54.3% percent of non-defaulter household heads had family size of (7-9) and 60% of defaulter household heads had family size of (1-3). As indicated in the above table as family size increase the number of loan non defaulters also increase. This is because as number of family increase the household ability to repay the loan increase. As result of these the family size of defaulters is less than those of the non-defaulters.

#### 4.1,9 Age of the respondents

**Table 9; Age of the respondents**

Age	loan repayment performance					
	Non defaulters'		Defaulters		Total	
	No	(%)	No	(%)	No	(%)
20-40	24	68.6	4	16	28	46.7
41-60	9	25.7	8	32	17	28.3
>60	2	5.7	13	52	15	25
Total	35	100	25	100	60	100

Source own survey result, 2019.

According to study result age is one of the factors that affect loan repayment performance of the study area. From the sampled households, the majorities (68.6%) have an age category between 20 to 40 years are loan Non defaulters. From loan Defaulters age category above 60 years old are 52%. As age of small holder farmer increases the loan repayment performance become decrease. Because as they became old and old their interest to work is decrease. While in younger age they need good change and in order to ensure these they interested to repay the loan. As a result the numbers of young loan non-defaulter performance are greater than old loan non-defaulter performance.

#### 4.1.10 Total livestock ownership and non farm income of the respondents

**Table 10; Total livestock ownership and non farm income of the respondents**

Variable	Obs	Mean	Std. Dev.	Min	Max
Total live stock ownership	60	5.688017	3.265715	1	17.5
Non farm income	60	13553.88	16920.14	900	80000

**The total livestock owned:** This means Number of livestock owned by the respondents. The respondent get the incomes from selling livestock were the minimum and the maximum amount of livestock, 1 and 17.5 respectively and the total average mean was 5.688017 units.

In farming area livestock are part of the operation. It may serve as a proxy for oxen ownership, which is important variable have a positive influence on loan repayment performance because the number of livestock increase the repayment capacity the farmer also increase.

**Nonfarm income:** The income generated from non-farm activity ranges from a minimum of 900 incomes and a maximum of 80000 The mean annual non-farm income of sample households was found to be 13553.88 of the sample household heads reported that at least one of their family members was engaged in non-farm activities, which helped them to earn additional income.

#### 4.2 Barriers of loan repayment performance in the area

Besides, attempt was made to know the reasons of defaulting. The responses from the borrowers indicated that the main reason for not repaying loans were low gross farm income, risk and uncertainty, the short payback period, natural hazards, high interest rate, distance from the source, non-profitability and various other reasons as indicated in table 12 below.

**Risk and uncertainty:** The risk influences of the household's access to formal credit are their attitude towards risk. Many farmers, as can be expected, were very risk-averse that even when credit is available, they do not like to venture into activities. This was due to risks of repaying loans that come from loss of crops due to seasonal changes, hail, pest, erratic rain fail, excessive rain fail and insect damage.

**Short payback period:** Credit institutions have rules and regulations that limits the time at which the borrower should repay the loan. So the farmers fail to repay on time they sent to the court or their property were controlled by government.

**Low gross farm income:** This refers to the total value of crops and livestock products were low. The income generated from these activities was helps for farmers not adapt to new technologies. The farmer’s crop loss or animal loss leads to a reduction of the total income generated from agriculture.

**High interest rate:** This indicated that the interest rate of lending institution high the repayment capacity farmers low. And also farmers do not participate in credit use.

**Far distance from the source:** This was the time that takes the household to reach the credit source. The distance is far from the source there is problem of transportation, so they not pay on time. Therefore, location advantage is expected to increase the loan repayment performance. From the main reason for repaying loans was not profitability were (12), short payback period (16), low farm gross income of the loan (24%), High interest rate (8%), risk and uncertainty (32%) and far distance from source (8%).

**Table11: Borrowers’ responses on main reason for not repaying the loan**

Main reason not Repay	Defaulters	
	No	(%)
Risk and uncertainty	8	32
Short payback period	4	16
Low farm gross income	6	24
Not profitability	3	12
High interest rate	2	8
Far distance from the source	2	8
Total	25	100

### **4.3 Socio-Economic and institutional factors affecting loan repayment in smallholder farmer**

As discussed earlier, the logit econometric model was selected for analyzing the factors influencing the loan repayment performance of the borrowers. Here, econometric analysis was carried out in order to identify factors that affect the loan repayment performance of Cheha microfinance institutions. As previously explained, binary logit models were employed to estimate the effect of hypothesized explanatory variables on the loan repayment performances of smallholder farmer.

The result of binary logistic model on socio-economic factors affecting loan repayment performance of the borrowers is presented a total of eleven explanatory variables were considered in the econometric model. Out of which six variables were founded to be significant at 10% probability level. These were age, sex of borrower, total family size, saving habit, extension contact, and fertilizer use. The coefficients of these significant variables were negative and the positive variable age, sex of borrower and extension contact, saving habit and the coefficient of negative variables are total family size and fertilizer use.

On the other hand, five variables were found insignificant on dependent variables namely education, loan size, land size, nonfarm income and number of livestock ownership. Over all, the binary logistic model successfully predicted factors contributing to micro credit loan repayment problem among SMFI.

#### **Table 12: Results of binary logistic model**

To determine the best subset of explanatory variables that are good predictors of the dependent variable, the logistic regressions were estimated using the STATA.

Logistic regression	Number of obs = 60
	LR chi2 (11) = 58.45
	Prob > chi2 = 0.0000
Log likelihood = -11.5269	Pseudo R2 = 0.7171

Logistic recreation				Marginal effect
variable	Coef.	P-value	dy/dx	P-value
age	.5030755	0.009***	.0499025	0.091
Education	-.5798316	0.414	.02957	0.541
Extension contact	4.802278	0.010**	.4763615	0.114
Total family size	-1.18493	0.007***	-.1175391	0.162
Fertilizer use	-3.792852	0.053***	-.3762316	0.107
Loan size	.6270199	0.653	.0621972	0.627
Land size	-.6773347	0.396	-.0671882	0.472
Saving habit	-3.613277	0.075*	-.3584187	0.163
Sex of borrower	6.007974	0.014**	.4306761	0.034
Number of livestock	.2594248	0.267	.0257336	0.331
Nonfarm income	.0000235	0.583	2.33e-06	0.559
_cons	-13.53353	0.083		

\*\*\*, \*\* and \* means significant at the 1%, 5% and 10% probability levels, respectively

Source: own survey 2019.

The logit model results used to study factors influencing the loan repayment performance of smallholder farmers are shown in Table 12. Among the 11 variables used in the model, 6 variables were significant with respect to the probability of loan default of smallholder farmers with less than 10% of the probability level in the study area.

#### **4.3.1 Elaboration of significant explanatory variables on determinants of loan repayment**

**1. Age of the household (age)** is positively related with credit use and statistically significant at  $p < 0.1$  probability consistent with prior hypothesized. It is an important determinant of credit user those household head having a higher age, due to life experience have much better association with formal credit institutions and provide better information about the institutions and that can facilitate access to use credit from the formal sources. If the age of house hold is increased by one year, the marginal effect in favor of being non-defaulter of loan repayment was by 0.0499025 or 4.9% factors.

**2. Sex of Borrower (sex):** There are controversial statistics among many microfinance specialists that uphold that females are better payers than male borrowers, taking into consideration their being more entrepreneurial, which results from more responsibilities in the internal affairs of a household. However, others expect that female headed households are less knowledgeable in formal credit and hence could be defaulters for they know little about the punishment of loan default. Hence this variable was expected to have either a positive relationship with loan default rate. If the sex of borrower was increased by the marginal effect value of the house hold sample by 0.4306761unit or 43%.

**3. Saving habit (savhab):** It is expected that the saving behavior of the household influences the loan default rate negatively and significantly. The study also shows that saving can negatively influence the probability of loan default rate at greater than 5% significance level. This result suggests that those farm households who developed increased saving habits have a decreased probability of loan default. Sampled households who have an increase in saving behavior but where all other factors remain constant have a marginal effect of loan default rate that is reduced by 0.3584187 or 35.8%; this indicates that households who save their money had a greater ability to repay their loan on time than households who do not save. This result confirms the study done by Abebe (2011).

**4. Fertilizer use (fertu):** Fertilizer means any substance which is intended or offered to be used for improving or maintaining the growth of plants or the productivity of the soil. The wise usage of fertilizer is one of the best investments a farmer can make. That means, with efficient use of fertilizer, the farmer expects a higher return on each unit of money spent on fertilizer. It is expected that fertilizer use by household has influenced the loan default rate negatively and significantly. The study was also negatively influenced by the probability of loan default rate at less than 10% significance level. This result suggests that, for those farm households that are fertilizer users, the probability of loan default was decrease. This means that sampled households that are fertilizer users, where all other factors remain constant, the marginal effect of loan default rate will reduced by 0.3762316 or 37.7%. This indicates that households who use fertilizer have a greater ability to repay the loan on time than households who do not use fertilizer.

**5. Extension Contact (ext):** This refers to the number of contacts with extension agents that the respondent made in the month. Farmers who have a frequent contact with extension agents are expected to have more information that influence farm household's demand for credit from the formal sources. Therefore, it was hypothesized that this variable positively influences farmer's access to use formal credit. This shows that when the extension contact increases by 1% the loan repayment performance of the household also increased by 0.4763615 or 47.63%.

**6. Total family size (totalfa):** is the total number of family members in the household. The lower the number of family members, the higher the probability to repay the loan. Because if the members of household are small, and the family expenditure is also low. This implies that the household with the lower family size has the lower probability to be defaulter than the household within higher family size. Therefore if the probability to non- default was expected to be higher. So this variable was expected to have a negative relationship with loan default rate. It is shown on above table that, as the family size reduced by -1.18493 unit, the probability to be defaulter reduced by -0.1175391 unit or -11.75%.

## **5. SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Summary and Conclusion**

The objective of this finding is to describe the barrier of farmer's loan repayment performance and to identify factors influencing for small holder loan repayment performance. Microfinance services are considered as one of the tools for fighting poverty in rural societies through providing efficient saving and credit services. Access to finance in rural areas creates opportunity for rural dwellers especially to small holder farmers to increase their productivity and income through purchase of farm inputs, accessing seed capital to start income generating activities etc. with possibility of reduction in poverty and improvement in standard of living. There are lots of options to deliver financial services to the rural poor smallholder farmers of which micro finance are the one. Cooperative societies as part of the rural finance providers is a cost - effective model for providing financial services to those segments of the population that have little or no access to other formal financial services. The source of data used for both primary and secondary data source, primary source formally through structured questionnaires that was collect face to face and direct interview of respondents and secondary data sources were gathered through reviewing, examination of documents, reports and different books. The descriptive statistics results showed that out of 60 households 35 (58.3%) were Non-defaulters (able to pay their loan on time) and 25 (41.7%) households were defaulters that were unable to pay their loan on time. Under this method of data analysis, descriptive statistics including frequency and percentages. The result of the log it econometric model showed that, from a total of 11 explanatory variables used in the model, six variables age, sex of borrower, total family size, extension contact, fertilizer use and saving habit had statistically significant influence on the loan repayment performance of the sample households.

### **5.2. Recommendation**

- ❖ Age: This variable was positively associated with credit access and repayment performance, facilitation on experience sharing and selective training to younger household is essential. An increase the family members, the more the labor force available for production purpose. Therefore, there is a possibility to have more alternative sources of income to overcome credit.

- ❖ Encouraging younger people's participation on loan by facilitation on experience sharing and selective training to them
- ❖ Sex of borrower: From this study the participations of females were very low. So governments should be to encourage female's participations in the accesses of credit.
- ❖ Implementing family saving program
- ❖ Saving habit: Saving significantly important for reducing poverty, it was the portion of income not spent on current expenditure. Because person does not know what will happen in the future, money should be saved to pay for unexpected events or emergencies, without saving, unexpected events can become large financial burdens. Therefore, extension worker, government and financial institution motivate respondent to save.
- ❖ Extension Contact: Using credit access and increase the contact of extension agent is important to the loan repayment performance of the households, and also kebele education office should provide adult learning program for illiterate households.
- ❖ To access credit use and increase the contact of extension agent important to the loan repayment performance of the households, and also kebele education office should provide adult learning program for illiterate households
- ❖ Fertilizer use: Increase the awareness of the farmers on the wise usages of fertilizer. Family size has significant and negatively affects of loan repayment performance of small holder. Based on this government and other responsible bodies teach the performance credit or loan and the person used to family planning.

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## 7. APPENDICXS

### APPENDEX:A

## Logistic regression

ploanrp	Coef.	Std. Err.	z	P> z	[90% Conf. Interval]	
age	.5030755	.1936437	2.60	0.009	.18456	.821591
edu	-.5798316	.7101228	-0.82	0.414	-1.74788	.5882165
ext	4.802278	1.868148	2.57	0.010	1.729448	7.875108
totalfa	-1.18493	.4392758	-2.70	0.007	-1.907475	-.4623861
fertu	-3.792852	1.963588	-1.93	0.053	-7.022666	-.5630374
loans	.6270199	1.395532	0.45	0.653	-1.668427	2.922466
lans	-.6773347	.7979193	-0.85	0.396	-1.989795	.6351257
savhab	-3.613277	2.031178	-1.78	0.075	-6.954267	-.2722873
sex	6.007974	2.438158	2.46	0.014	1.997561	10.01839
no1s	.2594248	.2335793	1.11	0.267	-.124779	.6436286
nfi	.0000235	.0000428	0.55	0.583	-.0000469	.0000939
_cons	-13.53353	7.796768	-1.74	0.083	-26.35807	-.7089848

### APPENDEX B

variable	dy/dx	Std. Err.	z	P> z	[ 95% C.I. ]		X
age	.0499025	.02957	1.69	0.091	-.008054	.107859	36.9667
edu	-.0575163	.0942	-0.61	0.541	-.24214	.127108	1.03333
ext	.4763615	.30165	1.58	0.114	-.114871	1.06759	1.38333
totalfa	-.1175391	.084	-1.40	0.162	-.282177	.047099	5.86667
fertu	-.3762316	.23371	-1.61	0.107	-.834294	.081831	1.48333
loans	.0621972	.1281	0.49	0.627	-.188869	.313263	1.45
lans	-.0671882	.09337	-0.72	0.472	-.250184	.115808	1.66667
savhab	-.3584187	.25713	-1.39	0.163	-.862392	.145555	1.76667
sex*	.4306761	.20352	2.12	0.034	.031786	.829566	.7
no1s	.0257336	.02644	0.97	0.331	-.026097	.077565	5.68802
nfi	2.33e-06	.00000	0.58	0.559	-5.5e-06	.00001	13553.9

### APPENDEX C

#### Questionnaire on “determinants of loan repayment performance of smallholder farmers in Cheha woreda.

1. Name of Kebele\_\_\_\_\_

2. Age\_\_\_\_\_ (years)

3. Sex 1. Male 2. Female

4. Educational level \_\_\_\_\_ 0. Illiterate 1. Primary education 2. Secondary education 3. Tertiary education 4. Others (specify)

5. How many your family sizes? Male \_\_\_\_\_ Female \_\_\_\_\_ Total \_\_\_\_\_

**Source of household Income**

7. Do you have cultivation of crops? 1. Yes 2.No, if yes total land size in hectar \_\_\_\_\_ and fill the following..

Crop	Amount of income obtained
Barely	
Wheat	
Teff	
Sorghum	
Maize	
Bean	
Pea	
Castor bean	
Others	
Total Income	

9. Do you have a loan size? 1). Yes or 2) No

If Yes How much?

10. Did the household involve in any non-farm activities in 2009/10E.C.? 1. Yes 2. No. If yes, in what type of activity?

1. Petty trade (poultry & egg, milk & milk products, hides & skins, crop residue, honey)
2. Construction work
3. Handicraft
4. Sale of Charcoal and Fire wood (collection)
5. Sale of local drink and f 6. Others /Specify \_\_\_\_\_

For credit access and loan repayment

11. Did you take any credit 2009/2010? 1. Yes 2.No if yes, fill the following

No	Sources of credit	Loan amount(in cash)	Loan period In months	No of years credit use	Purpose of loan
1	OMO				
2	Development bank				
3	Commercial bank				
4	Private commercial bank				
5	Construction bank				
6	Business bank				
7	Buna bank				
8	Private moneylenders				
9	Relatives				
10	Neighbors				
11	Others specify				

Note: Purpose can be 1.Payment for hired labor 2.Purchase of fertilizer & seeds 3. Purchase of farm implements 4.Payment for rented oxen 5. Purchase of food 6.Purchase of livestock 7.Purchase of household goods 8.To start off farm business 9.Payment of taxes 10.Debt repayment 11. Health expenses 12. Education expenses 13.Social ceremonies 14.Housing 15. School fee 16. Clothing 18. If other (specify)\_\_\_

12. Did you get the amount of credit you request? 1. Yes 2. No

13. Did you get credit service in time? 1. Yes 2.No

1. Fully repaid 2. Repayment in arrears 3.Not repaid

14. If in arrears what is the balance remaining? \_\_\_\_\_

15. What was the problem for the loan to be in arrears?

1. A) The interest rate large B) The repayment period near

C) List other reason? \_\_\_\_\_

16. Do you perceive the cost of default to be high? \_\_\_\_\_ 1. Yes 2. No

17. If yes, which of the following is the most important in forcing you to repay the loan in time?

1. Claim against personal wealth
2. Claim against guarantors
3. Social sanctions (e.g. loss of social status)
4. Fear of losing another loan in future 5. Other (specify) \_\_\_\_\_
- 5 Do you get a fertilizer use? 1).Yes 2).No

#### Institutional and Social Factors

18. Do you get a fertilizer use?

19. Was credit received adequate and timelines? 1. Yes 2. no

20. Do you get extension service? 1) Yes 2) No

21. Did you participate in agricultural extension package program in the 2009/2010?

1. Yes 2.No if yes, what was the type of the training you used? 1. Crop production 2. Animal rearing
3. Animal fattening 4. small-scale irrigation 5. credit use 6. Others specify \_\_\_\_\_