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The Determinants of Institutional Credit Access of Smallholder Farmers in woreda Raya Alamta. Southern zone of Tigray, Northern Ethiopia

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A Thesis
Submitted in Partial Fulfilment of the Requirements for the Master of Science Degree in Economics

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DECLARATION

This is to certify that the thesis prepared by Muleta Amare Redda, entitled **The Determinants of Institutional Credit Access of Smallholder farmers in woreda Raya Alamta. Southern zone of Tigray, Northern Ethiopia** and Submitted in Partial Fulfilment of the Requirements for the Master of Science Degree in Economics, complies with the regulations of the University and meets the accepted standards with respect to originality and quality. Approved by board of Examiners

Name of Advisor	**Signature**	**Date**
Name of External Examiner	**Signature**	**Date**
Name of Internal Examiner	**Signature**	**Date**

Chair of Department of Graduate Program Coordinator

Abstract

This study aimed to analyse the determinants of access to formal credit by smallholder farmers in Raya Alamata Woreda. Preferences of smallholder farmers towards financial credits was scored and ranked, sources of financial credit for smallholder farmers were assessed and factors affecting formal credit access of small holder farmers were analysed and identified in the study areas. A stratified random sampling procedures were employed to select three rural Kebele administrations and 167 farm household heads were selected using probability proportional to size. Semi-structured interviews were employed for collecting quantitative data from the sampled farm households in the study area. Three Focus group discussion, fifteen key informants' interview and field observations were held to generate qualitative data. Ranking techniques of credit sources were applied to know the preferences of all respondents and focus group participants for credit sources. Descriptive statistics and binary logit model were employed for analysing the quantitative data. STATA version 14 was used for data analysis. The results of the study were indicated that, out of 167 respondent house hold heads, 74 of the sampled farm households were formal credit users, whereas the remaining 93 of the respondents were non-users. Relatives, friends and neighbours were preferred as the best credit source for borrowers in the study area than other sources due to its interest free, low transaction cost and adjustments of repayment time. In the study areas, access to formal credit services of smallholder farmers was limited due to some-times inconvenience of group lending in which group members took responsibility of paying the defaulters risk, high interest rate charged on borrowers and some respondents having external financial supports. But, the logit model results reveal that sex of household heads, attitudes of household heads towards credit risks, preference of household heads for group lending, age of the household heads and experience of the household heads in credit using are important factors significantly affecting access to formal credit by smallholder farmers.

Key words: -Access to credit, binary logit model, formal credit-users and non- users

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List of acronyms

ATA **Agricultural Transformation Agency**

BOARD **Bureau of Agriculture and Rural Development**

CGAP **Consultant Group to Assist the Poor**

CSA **Central statistics Agency**

DA **Development agent**

FACASI **Farm Mechanization and Conservation Agriculture for Sustainable Intensification**

FGD **Focus group discussion**

FCA **Federal Cooperative Agency**

MFEDPPD **Ministry Finance and Economic Development Program Policy Department**

MOA **Ministry of agriculture**

MOARD **Ministry of Agriculture and Rural Development**

OARD **Office of Agriculture and Rural Development**

SSA **Sub-Saharan Africa**

SACCO **Saving and Credit Cooperative**

Contents

page no

List of Tables

page no

Chapter 1: INTRODUCTION

1.1. Background and Justification

Agriculture is the backbone of Ethiopia's economy. It accounts for the lion's share of the total GDP, employment creation and foreign currency earnings. The sector accounts for about 40.2 percent of national GDP, 80 percent of employment and, 70 percent of export earnings (African Economic Outlook, 2015). In Ethiopia, about 83.9 % of total population is lives in rural area and agriculture is main source of their livelihood. Since 2010, Agriculture become the second most dominant next to service sector of the country's economy (CSA, 2013). Small scale peasant farming is the most predominant mode of cultivation, and it is the peasant farmer who has suffered the most from the lack of capital, lack of technology and deterioration of the soil (Haileleul, 2001). Smallholders make decisions on what to cultivate, what inputs to use, when to harvest and how much to sell or keep for in-house consumption, how much to store or purchase, in line with their productive capacity and the transaction costs they face. This subsistence agriculture and low level of rural household income is socially and economically could make unstable the rural society. Therefore, it is significantly important to identify the factors that affect access of credit for agricultural productivity and find the methods of the rural household income improvements (Tessema, 2015).

African is not only the continent naturally endowed with vast agricultural farm land, but also conducive geographical condition that favours agricultural production throughout the year. Agriculture is the largest contributor to Africa's Gross Domestic Products (GDP) for most of the African countries (i.e., except the oil producing) and agriculture is also the major source of income (Adeleke et al., 2013). The low investment in agriculture has been perpetuating in the continent in the form of vicious circle. According to Adeleke et al. the peasant farmers cultivate small farm land, harvested low yields and remain poor. Access to credit facilities has also been identified as the direct solution to increasing investment agriculture in Africa. Credit is a crucial

factor in agricultural production and in many cases may be a limiting factor in small holder agriculture.

Agricultural credit plays a pivotal role in the adoption of improved technologies in the farming sector (Yehuala, 2008). The agricultural credit is normally used as a working capital to purchase farm inputs such as seeds, fertilizers, pesticides, and equipment. Farmers need finances immediately after the period of harvesting for the next cropping season for financing the variable farm inputs (Akram et al, 2008). Agricultural credit has been considered necessary for smallholder farmers with little capital, as means of getting access to improved agricultural technology and increases their productivity. Therefore, a number of agricultural dependent, Low Income Countries (LICs) external financing to smallholder farmers has been seen as one of the major means of bringing about the agricultural transformation (Rabo et al., 2001).

Adoption of improved agricultural technologies by smallholders is considered as the main pathway for breaking poverty trap. Applied correctly, adoption should, increase productivity and provide additional income to farmers. In this way, technology adoption can accelerate economic growth, create marketing opportunities, and help millions of farmers to move out of poverty (Africa Progress Panel Policy Brief, 2010). However, adoption rates for improved agricultural technologies have been rather disappointing and far from complete and proper identification of the main barriers of adoption remains a challenge. A strong and efficient agricultural sector has the potential to enable a country feed its growing population, generate employment, earn foreign exchange and provide raw materials for industries (Carlos E. 2016).

The Agricultural Development Strategy in Ethiopia is based on the building of the productive capacity of the people, making the maximum use of the enhanced capacity, and innovative application of the country's inadequate financial resources. Shortage of finance is particularly acute among the millions of farmers. (MFED PPD 2003) They need to buy improved agricultural inputs and implements to increase their income and break the perpetuity of the

poverty cycle they are entangled with. But they cannot do this because they lack finance. The credible solution for this seems to improve vastly farmers' access to rural financial services, notably credit. It is unlikely to achieve sustained agricultural development without sustained use of improved agricultural technologies by small farmers. Farmers' investment in these technologies cannot be real without having in place organizations and system that are capable of adequately providing rural financial services to farmers (Africa Progress Panel Policy Brief, 2010)

1.2. Statement of the problem

Continuous Agricultural finance support in rural area indicates short and unsafe. Smallholder farms face considerable difficulties in accessing credit as banks are often reluctant to lend to them due to poor collateral and lack of information. Women farmers face even greater disadvantages than their male counter parts. They have less access to assets, social capital and market information (George, 2015).Most of the credit that is available to the Ethiopian subsistence peasant sector comes from the informalfinancialsector.Some70%-80%per cent of the small farmers in Ethiopia either do not borrow or depend on the private money lender .Though accurate data is difficult to find, it is estimated that about one per cent of the total number of farmers use institutional credit. Farmers require credit to procure seeds and other inputs, as well as to harvest, process, market, and transport their crops (Getahun,Haileleul,2001).

Availability and access to financial resources is the key to the transition to commercial farming. Expansion of rural demand for goods and services, increasing rural savings, accelerating rural investment and accumulation of capital depend on this. Financial institutions should play a special role in this respect (MFEDPPD: 2003). Policies that promote access credit for productivity growth and investment need to go hand-in-hand with social protection interventions targeting nutrition, health and education. Access to credit can help subsistence smallholders to escape poverty traps and enter into a virtuous cycle of higher productivity and income generation (ibid).

In the Sothern Tigray until a few years ago land was not a problem. But labour is in short supply and is expensive especially during peak weeding and harvesting periods. Farmers mostly use hired labour. This indicates that there is a high demand for cash during the peak periods for labour. According to Germidis et al. (1991) comparing formal and informal sector, the fact that the formal sector is not in a position to satisfy the credit requirements of the farmers during the periods, they depend on the informal sector for their credit needs. Most informal lenders provide cash advance before the crop is harvested, farmers are then obliged to repay the loan in cash or in kind based on previous commitment made with the lender.

Evidence in the district show that in the past years formal credit institutions failed to reach the poor, particularly women and the very poor households (Kiros, 2012). This study is undertaken, to fill the information gap on the factors affecting smallholder farmers' access to formal credit in Woreda Raya Alamta.

1.3 Research Objectives

1.3.1. General Objective

The overall objective of this study is to investigate determinants of farming households' access to formal credit for agriculture production.

1.3.2 Specific Objective

In attaining this general objective, the study tried to examine the following specific objectives.

- To assess socio economic and institutional factors that affect credit demand of smallholders farmers in Raya Almata Woreda
- To examine factors that distinguish smallholder farmer credit constrained from those who are not

1.4. Research Questions

The study is guided by the following research questions

- To what extent are smallholder farmers in Raya Alamta woreda credit constrained?
- Do smallholder farmers in Raya Alamta woreda get access credit facility at various times in a farming calendar year?
- What socioeconomic factors influence credit access for smallholder farmers in Raya Alamta woreda?
- What are the major constraints faced by farmers when seeking access to credit facilities?

1.5 Research Hypothesis

The following hypothesis were tested in the study

H_O: Socio-economic and institutional characteristics have no difference on users and nonusers of credit in Raya Alamata woreda

H_O: Socio-economic and institutional factors do not affect smallholder farmer demand of credit

1.6 Scope of the study

The study focused on identifying determinants of formal credit by smallholder farmers. This study was limited to three Kebele administrations of Raya Alamata Woreda which is found in southern administrative Zone of Tigray .Therefore, the findings and recommendations of this research were limited to this woreda.

1.7 Delimitation of the study

Credit constraint in countries with highly fragile and informal rural credit markets just like Ethiopia is not an easy task. But giving up for these difficulties and neglecting the issue at all will undoubtedly undermine future development prospects of the sector and the economy at large. Therefore, besides the mentioned limitations, the paper will play an important role. Respondents are expected to remember the whole things in which the questionnaire is intended to grasp. But farmers in rural areas are not familiar with record keeping about theirday to day lives (including their production and consumption decisions). So using the data which ultimately depend on their recall may have some arguable problems. Therefore, the conclusions and its resultant policy recommendations should be considered cautiously when we are think of nationally and in other settings with different institutional and agro-ecological setup (Cuevas, Jamie, 2016).

1.8. Significance of the study

A formal and well-functioning financial sector (institutional credit cooperatives) in rural area is a necessary. To transform traditional smallholder farmers to modern agricultural production, can help to build a prosperous economy. Studies that deal with rural finance (institutional credit cooperatives) and its link with the agricultural sector will have a much greater role. Therefore, studies like this one can provide information that will enable financial institutions to understand how credit is related with agricultural production and thereby formulate appropriate lending policies accordingly. And also better understanding of constraints towards agricultural credit may assist policy makers in designing sustainable financial systems that can serve resource poor farmers escape from poverty and its complements (Tilahun, 2015). Financial institutions will understand the credit needs of the farmers and their demand, and this will enable them to come up with tailor-made credit facilities addressing their financial needs. Finally, the findings of this study can assist policymakers to come up with better ways to design, implement smallholder farmer financing models (Elly, 2019). Besides filling the existing gap, the results of this study provide useful information on the status of smallholder farmers in accessing agricultural credit from formal credit institutions as cooperatives. This information is vital for policy makers in taking appropriate actions toward facilitating better policies for the establishment and operation of comprehensive and sustainable financial institutions for the development of agriculture and other rural sectors.

1.9. Organization of the thesis

Organization of the thesis was organized in to five chapters. Chapter one constituted the introduction under which background of the study, statements of the problem, research questions, objectives of the study, scope and limitations of the study and significances of the

study were included. In chapter two, reviews of theoretical and empirical literatures to the concerns of the thesis were presented. Chapter three describes methodology which includes study area descriptions; method of data collection and systems of data analysis. Chapter four reports the results and discussion of the study and chapter five reports summary of major findings, general conclusion and recommendations forwarded

Chapter 2: LITERATURE REVIEW

2.1. Concepts and definitions

Agricultural (Rural credit); is an economic activity of borrowing funds by farmers from lending agencies for the organization and operation of farm activities. All parts of agriculture, including producers, input suppliers and those Involved in output marketing, have difficulties in obtaining bank credit. The commercial banks are unwilling to lend because of the risks involved in small loan size, the absence of marketable collateral, and lack of a rural branch network. There are unexploited opportunities for offering credit to, and through, cooperatives and to groups which take responsibility, jointly and severally, for repayment. (Dalberg, 2012).

Institutional credit (Formal credit): are those credit which are provided by the institutions like saving and credit. These loans are provided after its specified procedure and concerned terms and conditions (Alamgir et al., 2015).

Non-institutional credit (Formal Informal credit): mostly comprise of loans taken from friend's relative money lenders others commission agents. These loans have no proper documentation or others rule and regulations that's why most of the time farmers facing a tough time while getting these loans. The interest charges against such loans are also higher as compare to others. (Waqas et al., 2015)

Cooperatives: a cooperative is an association of women and men who come together to form a jointly owned, democratically controlled enterprise where generating a profit is only part of the story. Cooperatives put people before profit. They also help their members achieve their shared social, cultural and economic aspirations. A cooperative is a social enterprise that promotes peace and democracy (FAO, 2012).

The idea of Cooperation is older than man himself. Human being is a social animal who needs support from each other in order to make nature suitable for his existence. Ancient people engaged in a collective manner to gather their food and to protect them from Harmful wild animals. Civilization is the result of collective effort of people conducted to win social and economic problems. Traditional cooperation was the spring board for the emergence of modern cooperatives. But cooperation as a form of economic organization is of recent origin (Erika, Diana, Aritom, et al, 2019).

Agricultural Multi-Purpose Cooperative Societies: multipurpose cooperatives unlike single Purpose cooperative undertake diversified activities. Multipurpose cooperatives, which Functions on the basis of a fully integrated framework of activities, planned according to Member's requirements identified at the grass root level, taking the socio-economic life of the farmer members in its totality (Diana, et al, 2019).

Microfinance: As Tesfaye MegisoBegajo (cited in Chreinerand Colombet2001, p.339) define microfinance as" the attempt to improve access to small deposits and small loans for poorhouse holds neglected by banks. Therefore, microfinance involves the provision of financial services such as savings, loans and insurance to poor people living in both urban and rural settings who are unable to obtain such services from the formal financial sector. When properly harnessed, micro finance offers a variety of benefits to the African people.

Smallholder farmers: Smallholder farmers are defined to include subsistence farmers and semi-commercial farmers. Subsistence farmers comprise the largest group of the rural population, who are still poor, but actively trying to earn a significant part of their livelihood from farming activities, whose cultivation system is predominantly traditional technology i.e.

hand hoe (Emerole, 2004). According to Manganhele (2010), subsistence farmers do not strive to produce saleable surplus from their farming activities. Therefore, subsistence farmers are the most challenging potential client segment for providers of financial services.

According to Manganhele (2010), it is likely that a large number of semi-commercial farmers, on the other hand, comprise a minority of rural population but are the most promising target group of smallholder farmers (Tefera, 2004). According to Tefera, majority of the smallholder farmers in this category still use traditional farming technologies like the subsistence farmers. However, semi-commercial farmers are oriented to serve the markets and have progressed in scale of their operations or, if not have at least already demonstrated an ability to manage improved technology farmers would combine part-time on farming and non-farming activities i.e. working in small business including trading farming products and inputs. Unlike subsistence farmers, many semi-commercial farmers are less risk averse and more prone to demand financial services (Nwaru et al, 2010).

2.2. Concepts, characteristics and role of SACCOs

SACCOs are user-owned financial institutions that offer both savings and credit services to their members. Members of these financial institutions can be both net savers and net borrowers. Members have the right to decide on its issues and to benefit from its service.

They are formed initially for the poorer to provide financial services such as safe place for savings and providing easy accessible loans to members (Getnet, 2014).

SACCOs is t differentiates them from banks. They are user-owned financial intermediaries.

Their principal products are savings and credit, however some offer money transfers, payment

Services and insurance. Sometimes join together to create second-tier associations for the purposes of building capacity, liquidity management and refinancing (CGAP, 2005).

As Zerfeshewa Betru (2010), a SACCOs reach out to low savings and income individuals by offering products geared towards their unique needs within a secure and accessible structure. In order to ensure appropriate financial intermediaries for the poor to exist, appropriate external and internal incentives must exist. High performance standards required by regulatory authorities and effective supervision will necessarily translate into higher management capabilities, especially with regard to cost, liquidity and risk management. Access to secondary structures is another key issue for all financial institutions under consideration.

SACCOs need to be strongly supported in political terms by secondary structures such as the Cooperative offices and the Local Government. In addition, government need to facilitate alliance formation between SACCOs and MFIs so SACCOs are able to delegate functions to their respective secondary structures in order to benefit from economies of scale and scope also provide their clients with the opportunity to upgrade in order to access larger loans (Robinson, 2004).

2.3. Rural Savings and Credit Cooperatives in Ethiopia:

Recent Developments Rural Savings and Credit Cooperatives (RuSACCOs) have a long and turbulent history in Ethiopia. They have passed through different political regimes and have been at times perceived as extended arms of the state in certain regimes, which results in sizable dissolution during the transition period. It is only after the economic reform in the 1990s that RuSACCOs received renewed interest and were revitalized as self-standing financial institutions that provide microfinance services to rural population. RuSACCOs in Ethiopia are commonly formed through government initiatives, and sometimes through local

initiatives, for the purpose of mobilizing savings and credit facilities, distributing farm inputs and marketing farm outputs (Kibrom .A, Bethlehem, Gashaw, Guush, 2017).(FDRE, 2002; Emana, 2009; Bernard et al.

Most of the financial cooperatives in Ethiopia provide only the basic financial intermediation services, savings and credit, which is commendable given their limited institutional and managerial capabilities. Some of the RuSACCOs in Ethiopia recently started providing credit insurance services, albeit in the form of pilot /experiment. In general, these institutions have been integrated into government agricultural policies and are ambitiously trusted to facilitate financial inclusion of the rural poor. The Government of Ethiopia oversees the functioning of these institutions through the Federal Cooperatives Agency (FCA)established in 2002 (Kibrom, Bethlehem, Gashaw, Guush, 2017).

Rural savings and credit cooperatives in Ethiopia are smaller than banks and microfinance institutions and deal with a member clientele that most banks would not be willing to serve. They generally cover a smaller geographic area, usually a kebele. In principle, very few farmers, as small as ten, can form a rural savings and credit cooperative in Ethiopia. As a result the average size of a primary saving and credit cooperative in the country is not that large (Getnet, 2014).

2.4. Theories of Agricultural Credit

Theories of agricultural credit reveal various aspects that are internationally discussed by theoretical economists. Following are some selected theories of agricultural credit. Availability of credit is closely related to risks created to uncertainties

2.4.1. A Risk and uncertainty theory of Agricultural Credit:

The farm risks are not as protected as the commercial and industrial enterprises. Agriculture has to suffer many hazards like earthquakes, floods, droughts, famines, damage of crops due to insects and diseases, loss of cattle due to infectious diseases loss of property due to fire and wide fluctuations in prices of farm products create uncertainty that leads to risks. Increasing hazards in farm sector is one of the most significant caused for low availability of agricultural credit from institutional Sources as Jackline, (2013) (cited inJuggled, 1991)

2.4.2. Demand and Supply Theory of Agricultural Credit:

Requirement of farmer's credit depends on his Size of operating unit Efficiency, Farm productivity ,Control over production and price Economic conditions Knowledge of modem technology and Need for long-term investment in agriculture etc. Unfortunately, poor and ignorant farmers having very small holdings show no interest in long term investments in their farms. However, today, our agriculturists are undertaking both subsistence and commercial activities. So, the demand for credit in agriculture for long run practices is steadily increasing. But supply of funds is inadequate. However, after independence, various types of policy measures are being introduced to solve the financial in adequacy.Individual credit demand is better identified by non-institutional agencies through individual contacts. Demand for credit also varies according to the season. If access to credit is easy and the interest rate is low, the demand for credit is high. Though, the Institutional credit sources charge low rate but their conditions for obtaining loan are difficult and time consuming. However, the formal sources of agricultural credit do not impose difficult conditions of credit, but they charge higher rate of interest (Jorgenson, 1967).

2.5. Empirical Review

2.5.1. The Need for Credit

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. Access to capital in the form of either accumulated savings or a capital market is necessary in financing the adoption of many new agricultural technologies (Marina et al., (2015).

According to Marina(2015) credit is important for development. It capitalizes Farmers and entrepreneurs to undertake new investments or adopt new technologies. It helps Smooth consumption by providing working capital and reduces poverty in the process. Both Formal and informal lenders are active in rural credit market. Collateral-free lending, proximity, timely delivery and flexibility in loan transactions are some of the attractive features of informal credit. However, informal finance may not be as conducive to development as formal finance because; It is expensive It is short-term and largely used for consumption It is not generally large enough to spur investment and growth. Recent theoretical and empirical work in economics has established that credit markets in developing countries work inefficiently due to a number of market imperfections. The literature cites a number of market imperfections which lead some potential borrowers to be rationed out of the credit market. Interest rate ceilings usually imposed by the government .Monopoly power in credit markets often exercised by informal lenders Large transaction costs incurred by borrowers in applying for loans Moral hazard problems. In many cases a number of these imperfections combine to ration farmers out of the loan market.

Alforte A, Matias D, Munden L, Perron J. (2013) stated that credit is important 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. Access to capital in the form of either accumulated savings or a capital market is necessary in financing the adoption of new agricultural technologies.

Studies undertaken in Ethiopia show that credit provision to small farmers increases their productivity and improves their standard of living. For instance, Assefa (1987) reported the need for the expansion of rural credit to all areas of the country. Likewise, David (2008) pointed out the need for agricultural credit to increase productivity and accelerate adoption rates. Generally, credit removes a financial constraint and helps accelerate the adoption of new technologies, increases productivity, and improves national and personal incomes. However, financial risk occurs when money is borrowed to finance the farm business. This risk can be caused by uncertainty about future interest rates, a lender's willingness and ability to continue to provide funds when needed, and the ability of the farmer to generate the income necessary for loan repayment. According to Dalberg (2012), smallholder farmers who borrow money at high interest rates may have particular difficulty making debt repayments. Lower than expected prices, combined with low yields, can make debt repayment difficult and even lead to the sale of the farm.

2.5.2. Agricultural credit in developing countries

Agricultural cooperatives established to perform a variety of activities.One of the main sources of input credit for the small holders. Contribution of members, saving and income obtained from other activities of the cooperatives are the main source of credit funds. Some

cooperatives also depend on external fund sources like the agricultural or commercial banks. Although cooperatives in the developing countries have a mixed record regarding their performance in input credit administration, it is believed that they can efficiently administrate input credit.

Extension activities at the gross root levels can be run by educated members, resolve organizational problems, ensure adequate infrastructure management, and avoid government interference; if bottom-up planning and decision making approach is followed (Egerta, 2016).

2.5.3. Access to Finance

Smallholders need credit to invest in production. The very nature of agriculture makes lending to the sector a risky business. Weather conditions, crop diseases, as well as market access and price fluctuations, make harvests and income, and consequently the reimbursement of loans is uncertain. The reasons why most banks and microfinance institutions hesitant to lend money to farmers and smallholders (Cord aid, 2015). Lack of Access to finance is a problem for suppliers of agricultural raw materials, mainly small-scale farmers, and face in Africa. African smallholding famers are constrained by low- productive and backward technologies; and lack of access to modern inputs, such as fertilizers, improved and drought-resistant seeds, and modern storage facilities. One of the most important factors that hinder farmers from improving their farm practices through adoption of modern technologies is their access to finance (Andinet et al., 2017).

Gender and age bias to inclusive agricultural finance is also of a great concern. Access to credit is limited for women who do not have or cannot hold title to assets, such as land and property, or must seek male guarantees to borrow. These limitations often extend to a woman's ability to open a savings account and accumulate assets under her own name. In

Addition, age factors also constitute impediment to financial inclusions. Financial service providers usually target the middle of the economically active population, often overlooking the design of appropriate products for older or younger potential customers (Adamson, Anthony, et al, 2017). Formal institutions deny the landless people access to credit for lack of tangible collateral as well as transactions costs of institutional credit (FAO, 1995).Collateral plays a big role in accessing credit. It assists in determining the creditworthiness of the borrowers; gives assurance to the credit institutions regarding the safety of loans and solves theasymmetric information problems another problem to access to credit is limited education in utilization of credit. Most farmers in developing countries are illiterate while borrowers need at least a reasonable level of literacy to understand loans conditions and sign loan agreements (ibid).

2.6. Major Problems confronted by small-scale farmers

It is important to understand why lending to small farmers is so difficult and why they prefer borrowing from informal sources even though rate of interest for such borrowed capital may be higher. Lending institutions refuse loans to poor farmers because they do not have the necessary collateral. Most lending agencies are urban- based and urban-biased. They prefer dealing with industrial and commercial enterprises in urban areas and centre of population. (World Bank 2007).Most financial institutions are afraid that there may be failures of farmers to repay their debts on time, or repay at all furthermore, the transaction costs of dispensing and supervising small loans are very high thus limiting the access of small cultivators to institutional source of credit. Agricultural productivity can be improved if financial institutions are willing to modify the rules and regulations that govern the requirements for

collateral and the procedures involved for borrowing by small farmers (Lawlawrence, Julus, Ibrahim, 2013).

2.6. 1. Group Lending

wide variety of borrowers are denied access to institutional credit, some developing countries have initiated innovative credit schemes based on group lending or group guarantee which have contributed to the reduction of both the risks and administrative costs. This cohesive group serves as intermediary between its members and formal financial institutions by depositing savings, which serve as collateral with the latter. It then obtains group loans from the financial institutions for on- lending to its members.

The loan is used for income generating activities of the group or the individual. To avoid loan delinquency and create mutual trust between farmer groups and financial institutions, emphasis is always placed on developing group responsibility for individual borrowing. This emphasis on group discipline and financial responsibility is instilled through training and strict enforcement.

Lending agencies should open more Branches in the rural areas to facilitate the transformation of the rural subsistence sector, as well as promote the banking habit through the provision of credit and deposit facilities. In establishing saving credit programs, considerable emphasis should be placed on training credit program field staff and beneficiaries. Beneficiaries should be given high priority in training that should include farmer–trains-farmer methods (Climate policy initiative, 2018).

2.6.2 Lending procedures

Access to financial services by smallholders is normally seen as one of the constraints limiting their benefits from credit facilities. However, in most cases the access problem, especially

among formal financial institutions, is one created by the institutions mainly through their lending policies. This is manifested in the form of prescribed minimum loan amounts, complicated application procedures and restrictions on credit for specific purposes (Yehuala, 2008). For small-scale enterprises, reliable access to short-term and small amounts of credit is more valuable, and emphasizing as it may be more appropriate in credit programmes aimed at such enterprises.

2.6.3 Savings mobilization and agricultural credit

Conventional approaches to agricultural credit have often overlooked the importance of Savings mobilization, which is the other half of financial intermediation (ICA, 2001) many government-sponsored agricultural and development credit institutions provide no deposit service (ICA, 2001).In the past, policy-makers did not believe that the rural poor could save and only in recent years there has been growing awareness that deposit mobilization must receive priority and be considered as an integral part of financial building (ILO, 200

Chapter 3. Research Methodology

3.1 Description of the study Area

The study is conducted in Southern zone of Tigray Regional State, Raya Alamata Woreda. It is located about 180km South of Mekelle the capital City of Tigray Region and 600 km North of Addis Ababa. It shares a border with Amhara region (north Wollo) to the south and south West, Raya Azebo Woreda to the East and north East and Ofla woreda to the north and west. The wereda lies within the kola agro-ecology and plains, and undulating mountains dominate the terrain

According to Southern Zone Developmental Corridor data (2010), it has total area of 75318.5 ha (covers 61% is flat low lands and 39% is steep topography). It is situated at an altitude ranging between 1400 and 1800 m.a.s.l. Sorghum, Teff, maiz, wheat and barley are the dominate crops of livelihood zone. The mean annual rain fall of the area is about 728 mm; the short rain ranges from March/April and the main season from June to September. The area has a temperature of 25 – 27oC. Most of the dominant soils covered are clay and sands.

The farming system of the area is mixed farming system mostly crop production and livestock production. Cattle, goats and sheep (shoats) are reared in the zone. Livestock are important as a source of draught power, income and food. Donkeys and camel are hired out and also serve as a source of transportation. The occupation of the people includes farming, trading and civil service. About 70% of the residents are engaged both in crop farming and livestock rearing.

In woreda Raya Alamata there are 13 kebele administrations including town .but for purpose this study the focus is on 3 kebeles. In the study area, there is like RuSACCOs, Commercial Bank of Ethiopia, and Dedebit Microfinance Institution. These microfinance institutions are giving financial credits for smallholder farmers in the study area according to their rule and regulations. There are also very few informal lenders in the study areas.

Table.1. Beneficiary of SACCOs in woreda Raya Alamata

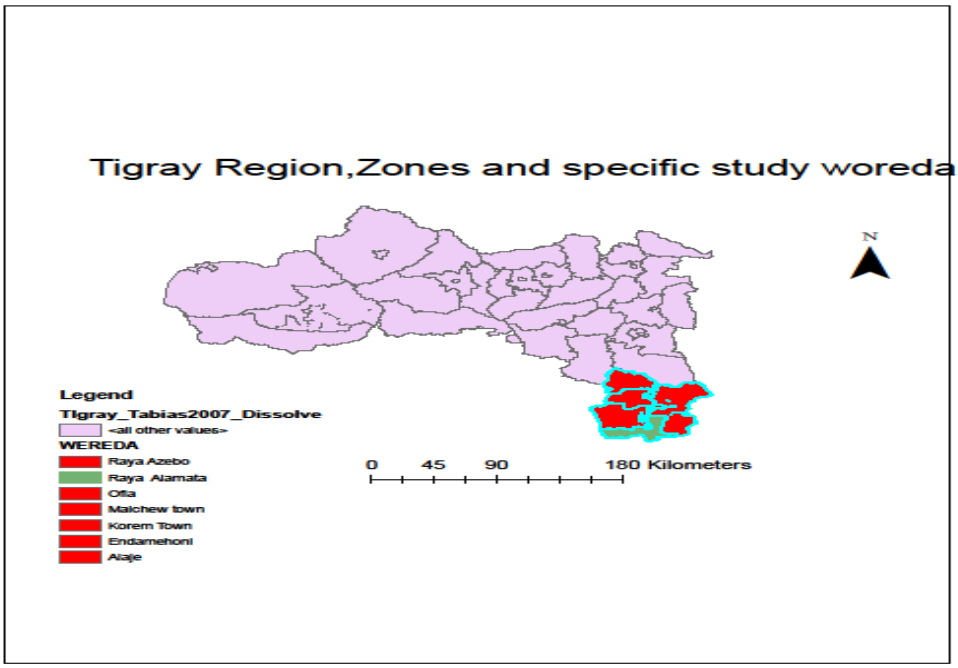
s/no	Name of kebele	Name of SACCOs	House hold head/members/			Current active borrowers		
			Male	Female	Total	Male	Female	Total
1	Tsetsera	Bruh Tesfa	568	397	965	110	35	145
2	Gejelle	Lemelem Raya	233	228	461	60	15	75
3	Limat	Alem Brhan	451	318	769	50	20	70
4	Merewa	Dilet	157	126	283	32	21	53
5	Sorya	Brhan	117	39	156	14	7	21
6	Timuga	Zelialem Hiwet	323	266	589	204	195	399
7	Selen wuha	Hulu Gize Hiwet	62	183	245	15	5	20
8	L/dayu	H/brhan	115	88	203	20	12	32
9	Akujira	Tesfa	209	175	384	65	54	119
10	kulugizelemlem	Jihan	41	72	113	11	5	16
11	Harlle	Limaeat Harle	81	58	139	7	6	13
12	Selam bkalsi	Tinkish	102	94	196	21	15	36
13	Awdukulu	Hadash Tesfa	38	34	72	8	2	10
		sum	2497	2078	4575	617	392	1009

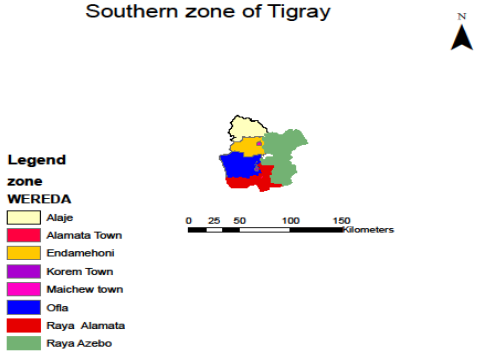
Source: BOARD, 2011 E.C

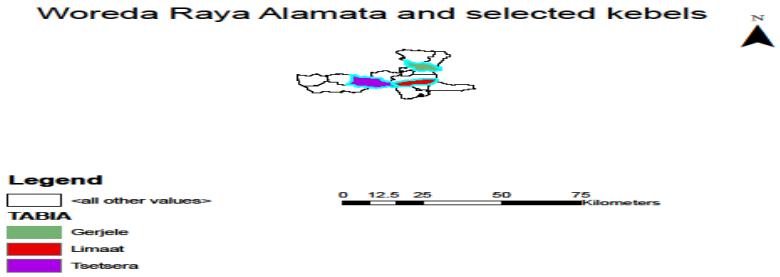
Table.2. Financial status of SACCOs in woreda Raya Alamata

s/no	Name of kebele	Name of SACCOs	Financial capacity			Establishment Year E.C
			Capital	Liability	Asset	
1	Tsetsera	Bruh Tesfa	1823378.06	5431073.79	7254451.85	2002
2	Gejelle	Lemelem Raya	962761.59	2594134.29	3556895.88	1997
3	Limat	Alem Brhan	1601421.07	5667213.25	7268634.32	1997
4	Merewa	Dilet	281501.9	530896.245	812398.145	2003
5	Sorya	Brhan	133539.59	271728.55	405268.14	2004
6	Timuga	Zelialem Hiwet	1490172.76	6758015.74	8248188.5	1995
7	Selen wuha	Hulu Gize Genet	491189.991	754610.928	1245800.919	2003
8	L/dayu	H/brhan	225288.372	323378.84	548667.212	1997
9	Akujira	Tesfa	282936.73	1665042.05	1947978.78	2003
10	kulugizelemlem	Jihan	112599.861	319639.147	432239.008	1997
11	Harlle	Limaeat Harle	109351.1986	303007.707	412358.9056	2003
12	Selam bkalsi	Tinkish	147843.3493	395709.671	543553.0203	1997
13	Awdukulu	Hadash Tesfa	92441	241115.75	333556.75	2002
	sum		7754425.4719	25255565.958	33009991.4299	

Source: BOARD 2011 E.C







ture to generate the desired data.

Table.3.Total house hold heads/members/ in selected Kebele Administrations of woreda Raya Alamata

s/no	Name of kebele	Total HH/members/ in sample kebele	Credit users	Non users
		Total	Total	Total
1	Tsetsera	965	145	540
2	Gerjelle	461	75	296
3	Limeat	769	70	530
		2195	**290**	**1366**

Source: own survey data from kebele 2012

Yamane (1967) provides a simplified formula to calculate sample sizes. This formula was used to calculate the sample sizes at 90% and 95% confidence level and for precision (e) of 10% and 5% respectively. The formula was expressed as:

$n = \frac{N}{1+N(e)^2}$ where n= sample size
N=population size
e= error term

When this formula is applied at 90% confidence level and precision (e) of 10%, the sample data was calculated from non-credit users and population proportion to size on.

n= $N/1+N(e)^2$ = $1366/1+1366\ (0.1)^2$=1366/14.66=93 non-credit user sample of kebele

Table 4, Sample household heads from none-users and their proportion from each kebele

kebele	Non-credit users	Proportion	Sample taken
Tsetsera	540	0.40	37.2
Gerjelle	296	0.21	19.53
Limeat	530	0.39	36.27
Total	1366	1	93

Table 5 sample house hold heads from credit users

kebele	Credit users	Proportion	Sample taken
Tsetsera	145	0.50	37
Gejelle	75	0.26	19.24
Limat	70	0.24	17.76
total	290	1	74

3.3. Sources and methods of data collection

Both qualitative and quantitative data were collected from primary and secondary data sources. Qualitative data were collected through focus group discussions and key informants 'interviews and semi-structured questionnaires were used. Structured interview schedule was prepared to collect quantitative data for the study. Primary data sources were collected from both male and female sample household heads and other key informants like development agents and model farmers. Secondary data were collected from office of agriculture, credit and saving cooperatives,

3.4. Techniques of data analysis

Based on the objectives of the study, descriptive statistics and econometric model were used to analyse the data.

3.4.1. Econometric analysis

Different studies were employed to identify factors that determine access to credit. This study is intended to analyse how much the hypothesized explanatory variables can determine small holder farmers' access to credit. The dependent variable is a dummy, which takes a value of one or zero depending on whether or not smallholder farmers, access to credit sources.

According to Amemiya (1981),(NOT ON REFERANCE) the statistical similarities between logit and probit models make the choice between them difficult. But this study has justification for using logit (binary logit model) due to its simplicity of calculation and that its probability lies between 0 and 1. Moreover, its probability approaches zero (0) at a slower rate as the value of explanatory variable gets smaller and smaller, and the probability approaches to one (1) as the value of the explanatory variable gets larger and larger (Gujarati, 1995) (NOT ON REFERANCE). Hence, the logistic model was selected for this study. By using odd ratio formula, the significance of each explanatory variable on access to credit by small holders was analysed. Therefore, the probability of using credit for smallholder farmer as a function of associated explanatory variables and can be stated as:

$Pi=Z(y=1/xi)=\alpha+\beta ixi$ --------- (1)

Representation of using credit is given by:

$Pi = F(Z) =\alpha+\sum_i^n \beta ixi$ -------- (2)

Where: Pi is the probability that an individual will use credit or does not use given Xi

e - Represents the base of natural logarithms (2.718).

Xi - Represents the explanatory variables

n- Represents the number of explanatory variables, i = 1, 2, 3 …, n. and α and βi- are parameters to be estimated. For ease of exposition, it can be written as: But

1-pi = $1/\ 1+e^{-zi} = e^z/1+e^z$ where Zi=α+βixi ------- (3)

This is logistic distribution function

If pi-is the probability of using credit, then: (1-Pi) is the probability of not using credit. Thus,

1-Pi = $1/e^{zi}$

By rewriting this formulae,

$Pi/\ 1-Pi=1+e^z/1+e^z=e^{zi}$ ---------(4)

The ratio of Pi to 1-pi- is termed as the odds ratio in the favour of access to credit.

The ratio of the probability that HHHs access to credit to the probability that will not.

Taking natural logarithm of this equation Li-Is the log of odd ratio and linear in x called logit.

$Pi/1-Pi= 1+e^z/1+e^z = e^a + \sum^n_{i=1}\beta i x i$ ---------- (5)

Therefore, to get linearity, take the natural logarithms of odds ratio in equation (5), which results in the logit model as indicated below.

$Z=\ln Pi/\ 1-Pi=\alpha+\beta 1x1+\beta 2x2+\beta nxn$ ---------- (6)

As P goes from 0 to 1, the logit goes from - ∞ to ∞. That is, although the probabilities lie between 0 and 1, the logit are not so bounded (Gujarati, 1995). If the disturbance term ui is taken into account,

The logit model becomes, $Z=\alpha+\sum^n_{i=1}\beta i x i+ux$ ---------- (7)

This log-odds ratio is a linear function of the explanatory variables which is used to test whether an explanatory variables are significantly affecting access to credit use of small holder farmers or not and the parameters is called logit model.

Multi collinearity problems among the hypothesized explanatory variables were tested by using VIF. If the result of VIF is greater or equal to ten, there will be multi collinearity problems and no if less than ten (10).

VIF= $1\ /1-r2$ ---------- (8)

Where $r2$ is the adjusted multiple correlation coefficient.

3.5. Definition of variables and hypotheses

Dependent variable:

The dependent variable has dichotomous nature representing access to credit by smallholder farmers. This is to distinguish between those users or non-users of credit in different sources in the study area. It takes a value of 1 for users and 0 for non-users.

Explanatory variables: Different theoretical and empirical studies on factors influencing access to credit by smallholder farmers, past research findings and the author's knowledge of the credit schemes of the study are used to establish working hypotheses of many studies. Among a number of factors demographic, socio-economic, communication, institutional and psychological factors are hypothesized to determine the dependent variable.

1. Age of the household heads; it is a continuous variable representing the age of the household head in years. Age is hypothesized to have positive association with farmers' access to credit. As the age progress, farmers acquire experience and knowledge in credit use. Those farmers who had a higher age, due to life experience might know different source of credit than young farmers and had better access to different sources of credit. There is a negative relation between age and access to credit, stated that as age progresses the production performances of farmers decreases they become elder and weak. Therefore, it has been expected that age of the household head influence access to credit both positively and negatively.

2. Sex of the household heads: This is a dummy variable that assumes a value of 1 if the head of the household is male and 0 otherwise. Female-headed households may face some cultural barriers in dealing with the cash economy and lack of control over economic resources. Male headed households have mobility, participate in different meetings and have more exposure to

information. The distribution of credit user female headed households is lower as compared to the credit users of male headed households. Hence, it is hypothesized that male headed households have more access to different sources of credit.

3. Educational level of household heads: It is a continuous variable defined as the level of grades or years of schooling completed by the respondent. A farmer who is educated is expected to have more exposure to the external environment and accumulate knowledge and they have the ability to analyse costs and benefits. Education is a social capital, which could impact positively on household ability to take good and well-informed production and decisions on access to credit. Therefore, it is expected that those farmers who are educated have better access to credit.

4. Family labour of households: This refers to the total number of family members of household measured in man equivalent. The larger the number of family labour, the more the labour force available for production purpose. The more the labour force available, the lower is the demand for hired labour, this means no or low cost for hired labour. Contrary to this, many studies indicate that labour surplus households are most often rent in land or enter into share cropping arrangements and they are more likely demand credit to finance input purchase. Therefore, it has been expected that family labour in man equivalent influence access to credit either positively and negatively.

5. Participation of households in extension package program: This is a continuous variable which takes a frequency of participants in extension package program per week or month or year. If a household participation in extension package program increases, his/her credit demand would increase for the purchase of farm inputs or technologies. Therefore,

participation of households in extension package program expected to influence access to credit positively.

6. Land holding of household heads: It is the total cultivated land holding by the households in hectares. It is a continuous variable. The larger the cultivated land size the more the labour and additional capital required that might be obtained through credit. Therefore, it is hypothesized that larger size of land would affect access to credit positively.

7. Total livestock ownership of households: This refers to the total number of animals possessed by the household measured in tropical livestock unit (TLU). As the total number of livestock holding of household's increase, the household will less likely to go for credit. This can be attributed to increase wealth and income base of farm households which makes more money available in the households that minimizes demand for credit. Therefore, livestock ownership has been hypothesized to influence access to credit negatively.

8. Participation of household heads in non-farm activities: This is a continuous variable which takes a value in monetary terms generated by non-farm activities. Researchers found out the negative relationship of non-farm activities and access to credit. Those households, who participate in non-farm activities, would earn additional income which leads to less demand for credit. Therefore, this variable influences access to credit negatively.

9. Attitude of household heads towards credit risk: This is a dummy variable which takes 1 if the respondents are risk averse to take loans and 0 otherwise. Many farmers were very risk-averse even when credit is available. They do not like to venture into activities due to risk of repaying loan that come from loss of crops and livestock due to seasonal changes, pest and insect damage. It would be measured based on the farmer's positive or negative perceptions

towards risk. Therefore, it was expected that farmers who are risk averse would not demand credit and it affects access to credit negatively.

10. Experience of the household heads in credit use, i.e., credit history of the farmer: It is a continuous variable. It is the total number of years of experience that the household head has obtained and use of credit from different sources. Farmers who have experience in use of credit and who lived to the best expectations of the lenders would develop reputation (standing) and they might have demonstrated their credit worthiness and become trustworthy. Similarly, farmers who had experience in credit use have developed confidence and standing in loan acquisition and repayment. Therefore, it was hypothesized that experience would affect access to credit positively.

11. Preference of HHHs for group lending: It is a dummy variable which takes a value 1 for those who prefers group lending 0 otherwise. Different lending institutions have their own lending arrangements some follow individual and others use group method that can serve as collateral. Some farmers perceived that group lending is difficult to access credit since every individual in a group responsible to repay the loan, if loan default occurs in one of the individuals. Contrary to this; group lending is the best solution for those who have no other alternative to get credit from any sources individually. Therefore, it has been expected that group lending influence access to credit both positively and negatively.

12. Distance of farmers' residence from lending institutions: It is a continuous variable and distance is measured in terms of kilo meters. It refers to the distance in kilo meters from the farm household head residence to lending institutions. Farmers near the lending institutions have a location advantage in saving farm resources (time, labour and money) which otherwise

would have been spent to access credit and can contact the lender easily and have more access to information than those who live at more distant location. Therefore, distance of farmers' residence from lending institutions has been expected to affect farmer's access to credit negatively.

13. Adequacy of loan repayment period: This is a dummy variable which takes a value 1 for those who perceive it as adequate and 0 otherwise. It refers to the time period at which the borrower should repay the loan. Different financial institutions have their own rules and Regulations that limit the time at which the borrower should repay the loan. If farmers fail to repay on time, they may be liable to some measures based on previous obligation made with the lender. Due to these reason, farmers fear taking loans from lending institutions. Adequacy of loan repayment period, therefore, has been hypothesized to influence access to credit negatively.

14. Transaction costs of lending: It is a dummy variable which takes a value1 for those who Perceive transaction cost of lending as a constraint and 0 otherwise. It is cost related to search for information bargaining and communication etc. Because lending structure of different lending institutions turns out to be time-taking, burdensome, and sometimes difficult to understand and incur extra costs. Due to complicated application procedures, tedious bureaucracy and restrictions, borrowers mostly do not get credit at the required time or they did not get at all. Therefore, transaction cost of lending has been hypothesized to influence access to credit negatively.

Table 6: List of explanatory variables, type, measurement and expected signs

No	Explanatory/ Independent variables	Type	Measurement	Expected signs
1	Age of household heads	Continuous	Years	+/-
2	Sex of household heads	Dummy	1, if M and 0 if F	+/-
3	Level of Education	Continuous	Years	+
4	Family labour	Continuous	Number	+/-
5	Participation in extension package programme	Continuous	Number of contact/month/yr	+
6	Land holding size of household heads	Continuous	Hectares	+
7	Land holding size of household heads	Continuous	Number	-
8	Participation of households on non-farm activities	Continuous	Monetary/ month / yea	-
9	Attitude towards credit risk	Dummy	1,if Risk averse, 0 if N	-/+
10	Experiences of house hold heads in credit use	Continuous	Years	+
11	Preference for group lending	Dummy	1if prefer,0if N	-/+
12	Distances of households from lending institutions	Continuous	KILOMETERS	-
13	Adequacy of loan repayment periods	Dummy	1,If Adiquate,0 if in adequate	-
14	Transaction cost of lending		1,if yes and 0 if N	-

Chapter Four

4. Results and Discussion

This chapter presents and discusses the results of the analysis that has been conducted to address specific objectives of the research. It is divided into three major sections. The first section presents preferences and attitudes of smallholder farmers towards financial credits; the second section explains the sources of financial credit for smallholder farmers and the third one deal with factors affecting formal credit access of small holder farmers.

4.1. Preferences and attitudes of smallholder farmers towards financial credits

4.1.1. Preferences and attitudes of credit users and non -users for financial credits

The objective of respondent's credit source preference ranking was to assess the reasons why one credit source could be scored highest over the other. Many reasons were identified for the assignment of a higher rank for one credit source over the other. In the study area, there were two formal financial institutions which have been providing credit services for the local community. These are RuSACCOs and Dedebit Micro Finance Institution. The credit source preferences of respondents for different sources of credit were achieved through questioners, focus group discussion and key informant's interviews.

This order and rank of preferences was done depending up on rate of interest they have been charging on borrowers, adjustments of loan repayment time, transaction costs of lending and loan size provision. Non-credit users also have the same credit source preferences and ranked the available credit sources.

Focus group discussion on preferences and ranks of credit sources was done at each Kebele administrations. Hence, the three Kebeles focus group participants compared credit sources with each other. Depending upon this, their credit source preference and ranks was the same with that of formal credit users and non-user respondents having the same reason for order of preferences and listed.All respondents replied their preferences by ranking as: first, second, third and fourth. Then identified the existing credit sources available in the study area as: Commercial Bank of Ethiopia (CBE), Rural Credit and Saving Cooperatives (RuSACCO) and Dedebit Microfinance Institution (DMFI) and informal credit source RFNs (Relatives, Friends and Neighbours). As shown by table 7 below, formal credit users and non-users were preferred RFNs, RuSACCOs, DEDEBIT micro finance, and CBE as first, second, third and fourth preferred credit sources, respectively.

Non-credit users also have the same credit source preferences and ranked the available credit sources RFNs, RSACCO, DEDEBIT and CBE as first, second, third and fourth credit sources, respectively even though, there were no sufficient informal financial credit service providers in the study areas. Both groups ranked and preferred RFNs as best credit sources due to being its interest free, adjustments of loan size and repayment time and low transaction costs of lending. The second and third ranks and preferences were done depending up on: none collateral pre-requisite, fixed loan sizes and repayment times and better loan size than informal credit sources. Both groups did not prefer Commercial Bank of Ethiopia due to its pre-requisites of tangible and strong collaterals for service provision.

Table 7 Respondents' preference ranking for credit sources

Credit sources	Formal credit users(74)			Non users(93)		
	Preference/ responses	Rank	%	Preference scores	Rank	%
RSACCOs	19	2	25.7	20	2	21.5
DEDEBIT	16	3	21.6	18	3	19.4
CBE	-	4	-	-	4	-
RFNs	39	1	52.7	55	1	59.1

Source: RuSACCO = Rural credit and saving cooperatives, DEDEBIT =DEDEBIT microfinance, CBE = Commercial bank of Ethiopia, RFNs = Relative, Friends and Neighbours.

Focus group discussion on preferences and ranks of credit sources was done at each Kebele administrations. Hence, the three Kebeles focus group participants compared credit sources with each other (Dedebit MFI with RSACCO, RFNs with RuSACCO and Dedebit MFIs with CBE). Depending upon this, Their credit source preference and ranks was the same with that of formal credit users and non-user respondents having the same reason for order of preferences and listed as RFNs, RSACCO, Dedebit microfinance and CBE as first, second, third and fourth credit sources, respectively (Table 8). Dedebit MFI was ranked as third sources of credit due to its high interest rates i.e. 17 % per annual or 1.4 % per month. When compared with RSACCOs which charges12_15 % per annual on borrowers.

Table 8. Preferences and ranks of credit sources by FGD participants at 3 KAs

Credit source preference in 3KAs	Score	rank
RuSACCOs	5	2
CBE	0	4
DEDEBIT MFI	2	3
RFNs	7	1

RuSACCO = Rural Saving and Credit Cooperatives, DEDEBIT =Dedebit Micro finance, CBE = Commercial Bank of Ethiopia, RFNs = Relative, Friends and Neighbours, FGD =Focus group discussion, KAs = kebele administrations

Contrary to the above discussion, few of the respondents in the study areas were not interested to get loan at all because they have external financial supports from their relatives, son and daughters living in Saud Arabia. They said that 'our son, daughters and Relatives were supporting us at two agricultural peak seasons like: for the purchases of agricultural inputs and for the costs of harvesting and purchases of chemicals for post- harvest storages of grain crops.

4.1.2. Smallholder farmers view of group borrowing from MFIs

Smallholder farmers understood that, in the cases of group borrowing, group members were jointly accountable for the loan repayments and therefore the whole group provides monitoring, and enforcement mechanism on members to repay their loans on time. In the event of a group member being incapable of repaying the loan, the group members have responsibility to pay the loan. They replied that, if the money borrowed from any credit sources is properly invested on productive works, it is good and profitable, there would be no default. Smallholder farmers acknowledged RuSACCOs for their services of group lending

that solves their cash needs without limiting them by strong collateral pre-request like CBE. However, in the study areas majority of the very poor and female headed respondent farmers replied that group borrowing was a constraint to access credit from RuSACCOs which required group formation as a pre-condition to access credit service.

They face problems to form a group because the better-off farmers do not want them in their group. This is due to some farmers thought that the very poor have no enough assets which serve as guarantee in case of default. Even though theoretically, the poor can form a group among themselves; in practical cases those farmers reported that they were sometimes limited from forming a group as they want. Female headed households in the study areas were characterized with low level of livestock and landholding size. From female headed household's perspective these assets were indirectly seen as a guarantee to access credit from the formal credit institutions by the Kebele credit and saving committee. Due to this, female headed households and the very poor farmers sometimes unable to form group with better- off farmers.

When there is a natural disaster, the very poor farmers were unable to repay their loans on time due to very low liquidity assets and in that event members pay the loan on behalf of defaulting members.

4.1.3 Types of saving in the study areas

Two types of savings by smallholder farmers are observed in the area, i.e.: traditional saving (rearing livestock for wealth accumulation and security against emergencies), and savings in RuSACCOs. There are also two kinds of savings in RuSACCOs: voluntary and compulsory (obligatory) savings. In both ways of savings clients receive a record book where their deposits and withdrawals are entered. In the case of voluntary, clients have no obligation to save money and can save the amount of money they wanted and they can also withdraw their money at any time at their request. In compulsory savings, which is a prior saving required from borrowers, clients have obligatory savings in which all members contribute regularly throughout their membership with the institution, i.e., cooperative.

4.1.4. Repayment period

The maximum repayment period or the loan duration form has been limited to one year for agricultural credits as stated by the district level institutions. Moreover, the principal repayment time for agricultural loans (smallholder farmers) was immediately after one year of credit provision. There were no repayment time adjustments at all and are conducted strictly as per signed agreement. There is no time giving for crop harvesting and crop market fluctuation.

4.1.5. Interest rate

Institutions charges an interest rate 12-17 (%) per annual on borrowers, institutions were paying only 5 per cent per annual interests for depositors. These imbalances in interest rates also force the society not to take the loan from these institutions and as well not to save their own cash voluntarily.

4.3. Factors affecting formal credit access

Smallholder farmer's access to credit services is influenced by demographic, psychological, communication, institutional and socio-economic characteristics of households. This section analyses the effect of hypothesised independent variables on formal credit access of smallholder farmers by both descriptive and econometric analysis.

4.3.1 Description of independent/ explanatory variables

Continuous variables

a) Educational level of household heads: -The average educational level of formal credit user sample households was 5.34 grade and 2.42 for non-credit user households, respectively (Table 9). There were significant differences in educational levels between formal credit users and non-users at ($p < 0.01$). The more educated the household head is the more vulnerable would be the household for credit rationing.

b)Age of household heads: -The average age of the formal credit user and non-user household heads was 41.43 and 32.97 years for formal credit users and non-users, respectively (Table 9).The t-test revealed that, there is a statistically significant difference between the age formal credit users and non- users at ($P<0.01$). Age of household head is believed to be a great source of experience in day-to-day activity of human beings. So, aged heads of households are expected to have more experience in access to credit from different source. Farmers acquire experience and knowledge in credit use

c) Total livestock holdings of household heads: The mean livestock holdings of credit users and non-user households were 8.89 and 10.45 (Table 9), respectively. The t test result revealed that, there is significant difference in livestock holdings between two groups at ($p <$

0.01). This study pointed out that, non-credit users possessed relatively more livestock unit than credit user households which showed that having better livestock numbers affect credit access negatively.

d) Distance of smallholder farmers from lending institutions: The mean distances of credit users and non-user households from lending institutions were 8.04 and 10.22, respectively (Table 9).The t-test result revealed that, is significant differences in distance from lending institution between formal credit users and non-users at ($P< 0.01$). Distance of farmers' residence from lending institutions affects access to formal credit of respondents negatively.

e) Participation of households in extension package program: The average participation in extension package programme of formal credit user and non-user households were 53.65 and 33.55 per one year for formal credit users and non-users, respectively (Table 9).The t-test result revealed that, there were significant differences in frequency of extension service contact per year between formal credit users and nonusers households at ($P< 0.01$). Household participation in extension package program increases their credit demand for the purchase of farm inputs or technologies.

f) Participation of households on non-farm activities: The results of analysis revealed that, formal credit users and non-users were generating an income from nonfarm activities of Birr 4,420.43and12, 101.66 per year, respectively (Table 9).The t- test result revealed that, there are significant income differences from non-farm activities of the two groups at ($P<0.01$). This result found out the negative relationship of non-farm activities and access to credit.

Table 9. Continuous explanatory variables and their t-test results

S/no	Continuous Variables	Formal credit users		Non users		t-test
		Mean	SD	Mean	SD	
1	FSHHs	8.66	2.9343	6.28	1.8555	1.356
2	EDLHHs	5.34	2.082	2.42	2.7039	4.423***
3	AGHHs	41.43	10.999	32.97	19.4447	4.713***
4	LHHHs	1.17	0.8351	0.92	0.6839	0.034
5	TLUHHs	8.89	3.8980	10.45	4.9640	-3.303***
6	DLINHHs	8.04	1.7196	10.22	3.0606	-4.648***
7	PHHEPP	53.65	3.7505	33.55	6.0729	3.741***
8	PONAHH	4,420.43	,798.2645	212,101.66	2,329.666	17.272***
9	EXCUHH	2.12	0.859			

Significant at 1 % probability level

FSHHs = Family size of household heads

EDLHHs = Educational level of household heads

AGHHs = Age of household heads

EXCUHHs = Experience in credit use of house hold heads

LHHHs = Land holding size of household heads

TLUHHs =Total livestock holdings of household heads

DLINHHs =Distance from lending institutions of household heads

PONAHHs = participation of household heads on non-farm activities

Categorical variables

a) Attitude of household head towards credit risk: Result analysis showed that 25.7 % and 70 % of formal credit users and non-users were perceived credit as risky, respectively (Table 10). This result revealed that there was significant difference in attitude towards credit risk of formal credit users and non-users at ($P< 0.05$).many farmers were very risk- averse that even when credit is available, they do not like to venture into activities due to risk of repaying loan that come from loss of crops and livestock due to seasonal changes, pest and insect damage.

b) Household head's transaction costs of lending: The result of this study showed that 13.55 % and 67.74 % of formal credit users and non-users have been incurring cost to get formal credit services respectively (Table 10).The chi-square test result revealed that, there were significant transaction cost differences between formal credit users and non-users at ($P< 0.01$). Due to complicated application procedures, tedious bureaucracy and restrictions, borrowers mostly do not get credit at the required time or they did not get at all.

c) Preference of household head for group lending: The preferences and non-preferences for group lending of credit users and non-users for group lending were 62.2% and 37.8%, respectively (Table 10).This chi-square test result revealed that there were significant differences between formal credit users and non-users at ($P< 0.01$).group lending is the best solution for those who have no other alternative to get formal credit from any source individually.

Table10. Categorical independent variables and their chi-square test result

Categorical variables	Formal credit users(74)		None users(93)		Total		X2
	N	%	N	%	N	%	
SEXHHs Male	54	73	74	79.6	128	76.6	1.002
Female	20	27	19	20.4	39	23.4	
AHHCRSK -Risky	19	25.7	65	70	84	50.3	3.782**
-not risky	55	74.3	28	30	83	49.7	
ADLRHHs-	45	60.8			45	60.8	
Adequate	29	39.2			29	39.2	
-inadequate							
TRCLHHs-Yes	10	13.55	63	67.74	73	43.72	44.9444***
-No	64	86.45	30	32.26	94	56.28	
PGLHHs-prefer	60	81.08	17	18.28	77	46.11	
-Not prefer	14	18.2	76	81.72	90	53.89	110.978***

*** And ** shows significant at 1 % and 5 % probability level.

SEXHHs = Sex of household heads,

AHHCRSK = Attitude of house hold heads towards credit risk

ADLRHHs =Adequacy of loan repayments of house hold heads

TRCLHHs = Transaction cost of lending,

PGLHHs =Preferences for group lending of household heads

4.3.2. Determinants of access to credit

A bionary logit model was used for estimation of the determinants of credit access. Fourteen variables were hypothesized to determine access to formal credit by smallholder farmers. Multi collinearity problems among the hypothesized explanatory variables were tested. The VIF of each variable were found to be less than ten. Therefore, there was no multi collinearity problem among all the hypothesized 14 variables. So, all explanatory variables were included in the model. Out of all these variables, five were found to be significantly affecting formal credit access of smallholder farmers. These were: -house hold heads attitude towards risk, preference of household heads for group lending, age of the household heads and experience of the household head in credit use.

a). Sex of the household heads: This is a dummy variable that assumes a value of 1 if the head of the household is male and 0 otherwise. The binary logit regression results reveal that, sex of household head affects access to formal credit services negatively (Table 11) and significant at ($P< 0.05$). The coefficient indicated that, in favour of credit decrease by a factor of 0.4800655 as the head of household being female. These female-headed households may face some cultural barriers in dealing with the cash economy and lack of control over economic resources including the existing gender differences, male headed households have mobility, participate in different meetings and have more exposure to information. The distribution of credit user female headed households is lower as compared to the credit users' of male headed households.

b) Household heads attitude towards risk: This is a dummy variable which takes 1, if the respondents are risk averse to take loans, and 0 otherwise. The binary logit regression result reveal that, household heads attitude towards credit risk affects access to credit services

negatively (Table 11) and significant at (P< 0.01).The odds in favour of credit decrease by a factor of 6.191437 being many farmers are very risk- averse. Due to risk of repaying loan that come from loss of crops due to seasonal changes, pest and insect damage, that even when credit is available, they do not like to venture into activities.

c) Preference of household heads for group lending: lending institutions have their own lending arrangements some follow individual and others use group method that can serve as collateral. The binary logit regression result (Table 11) reveal that, preferences of household heads for group lending affects access to credit services positively and significant at (P< 0.01).The odd ratio in favour of credit increase by a factor of 1.503537 as group lending available for smallholder farmers. Some farmers perceived group lending is difficult to access credit since every individual in a group responsible to repay the loan, if loan default occurs in one of the individuals others perceive group lending is the best solution for those who have no other alternative to get credit from any source individually.

d) Age of the household heads: It is a continuous variable representing the age of the household head in years. Age is hypothesized to have positive association with farmers' access to credit. The binary logit regression result reveal ((Table 11)) that, age of household heads affects access to credit services positively and significant at (P< 0.01).The odds in favour of credit increase by a factor of 0.9443608 as the age of smallholder farmers increase by one year. Farmers acquire experience and knowledge in credit use. Those farmers who had a higher age, due to life experience they might know different source of credit than young farmers and had better access to different sources of credit.

e) Experience of the household head in credit use: It is a continuous variable and indicates the total number of years that the household heads have obtained and use of credit from different sources. The binary logit regression result reveal that, (Table 11) experiences of house hold heads in credit use of household heads affects access to credit services positively and significant at (P<0.01). The odds favour of credit increase by a factor of 1.963827 as the experiences of smallholder farmer's increase by one year. Farmers who have experience in use of credit and who lived to the best expectations of the lenders would develop reputation and they might have demonstrated their credit worthiness and become trustworthy.

Table 11.Binary logit regression results of determinants of access to formal credit

s/n	VIRABLES	Odd ratio	SE	Z	P>|Z|	95 % confidence interval	
1	SEXHHs	.4800655**	0.23158	-1.73	0.083	0.2094509	1.100319
2	FLMEHHs	9453853	0.0963596	-0.55	0.582	0.7741927	1.154433
3	PONAHHs	0.4638898	0.2514346	-1.42	0.156	0.1603437	1.342078
4	AHHCRSK	6.191437***	3.318151	3.4	0.001	2.165761	17.69996
5	ADLRHHs	1.240245	0.6977225	0.38	0.702	0.4117641	3.735652
6	TRCLHHs	2.282826	1.304616	1.44	0.149	0.7447633	6.99725
7	PHHEPP	-0.1980842	1.287201	-0.15	0.878	-2.720952	2.324784
8	PGLHHs	1.503537***	0.5102119	2.95	0.003	0.503598	2.503533
9	EDLHHs	1.047828	0.0832774	0.59	0.577	0.8966846	1.224448
10	LHHHs	2.263313	0.4338699	0.68	0.496	0.6444298	2.476544
11	TLUHHs	1.035097	0.0555265	0.64	0.52	0.9317931	1.149854
12	AGHHs	0.9443608***	0.0195273	-2.77	0.006	0.9068533	0.9834197
13	DLINHHs	0.9728738	0.1067645	-0.25	0.802	0.784593	1.206337
14	EXCUHHs	1.963827***	0.4740618	2.8	0.005	1.223562	3.15196
	CONS.	1.04788	1.425906	0.03	0.973	0.072784	15.08644

***, ** Significant at 1 and 5 % probability level

Log likelihood= -79.452479

Number of observations = 167

Pseudo $RR2$ = 0.2185

LR (14) chi^2 =44.42Prob >chi^2= 0.0001

1.SEXHHs = Sex of household heads

2.FMHHs = Family member of household heads

3. PONAHHs = participation of household heads on non-farm activities

4. AHHCRSK = Attitude of house hold heads towards credit risk

5.ADLRHHs =Adequacy of loan repayments of house hold heads

6.TRCLHHs = Transaction cost of lending

8.PGLHHs =Preferences for group lending of household heads

9.EDLHHs = Educational level of household heads

10.LHHHs = Land holding size of household heads

11.TLUHHs =Total livestock holdings of household heads

12.AGHHs = Age of household heads

13.DLINHHs =Distance from lending institutions of household heads

14.EXCUHHs = Experience in credit use of house hold heads

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5. Conclusion and Recommendations

5.1. Conclusion

This study has been conducted to analyse the determinants of access to formal credit by smallholder farmers which was affected by socio-economic, institutional, psychological, and demographic and communication factors. There were fourteen explanatory variables hypothesised to affect formal credit access of smallholder farmers in the study areas and each fourteen explanatory variables were analysed in detail. The collected quantitative and qualitative data were analysed using descriptive statistics and econometric model, specifically binary logit model. The preferences and attitudes of respondent small holder farmers towards financial credits, sources of financial credit and their order of preferences and ranks and factors affecting their formal credit accesses were assessed and analysed by using both descriptive statistics and econometric model.

The credit sources of smallholder farmers in the study areas were saving and credit cooperatives (RuSACCOs) and Dedebit Microfinance Institution but their coverage and services were not yet satisfying smallholder farmers. Respondents were using credit services from either of institutions. However, majority of the credit users were borrowing from RSACCOs due to its small interest rate charged on borrowers as compared with Dedebit MFI.

Credit users were borrowing from formal credit sources by fulfilling the criteria of group borrowing like group forming, taking the responsibility of paying the risk of defaulting members among themselves, paying the interest rates charged by credit service providing institutions.

Smallholder farmer's access to formal credit in the study area has been affected negatively by Islamic Religion believing that earning money through loans from formal credit sources is

‘haram’ since charging an interest and external financial supports from abroad for few small holder farmers during the two peak agricultural seasons at sowing and harvesting time constantly. T-test, chi-square test and binary logit model were identified explanatory variables which have been affecting dependent variable significantly.

The results of t-test revealed that, educational level of household heads, age of household heads, total livestock holdings of household heads, distance from lending institutions, participation of households in extension package program and participation of households on non-farm activities between formal credit users and non-users smallholder farmers were significantly different at ($P< 0.01$)

Chi-square test result revealed that, attitude of household heads towards credit risk, household heads transaction costs of lending and preference of household heads for group lending of formal credit users and non-users were significantly different at ($P< 0.05$).

The binary logit revealed that: Sex of house hold heads, house hold heads attitude towards risk, preference of household heads for group lending, age of the household heads and experience of the household heads in credit use have been affecting access to formal credit services significantly.

5.2. Recommendations

Group lending becomes the most important method of providing rural credit to the poor who could not bring strong and tangible collateral. However, very poor female headed household head farmers found group lending inconvenient to access credit from RuSACCOs that members suspect them as defaulters. Therefore, there should be new policy implementations

where by poor female household heads have credit access by means of using land use right certificates and guarantor as a collateral.

Most of smallholder farmers fear using credit by fear of default risk; therefore, there should be new policy intervention to fill financial management's knowledge gap of smallholder farmers in the study areas in particular and for the country in general.

Group lending has been solving credit access problems of smallholder farmers in the study areas. However, the service was limited due to budget constraints to provide services for all applicants. So governmental and non-governmental organisations have to raise the fund for financial institutions for the study areas in particular and the country in general.

Females house hold heads and the very poor households did not use credit from formal financial sources due to low credit using experiences. Therefore, high emphasis should be given by RuSACCOs and other responsible organizations to change the perceptions of small holder farmers towards using credit by implementing capacity buildings like trainings and publishing bulletins concerning the importance of credit.

The interest rate that RuSACCOs has been charging on borrowers was very high and small holder farmers not willing to take the loan. So, this issue has to be seen carefully by policy makers and practitioners to balance interest rate charged on borrowers with the amounts of loan provided for them.

Government have to establish more RuSACCOs at rural Kebele administrations level and invite interested private investors to invest on rural saving and credit institutions in order to develop the saving and credit knowledge of small holder farmers and minimize transaction cost of lending.

Majority of formal credit users have more than 8 family sizes and their maximum agricultural land was 2.75 ha. Due to that majority of borrowers in the study areas were taking the loan for consumption smoothing and education fee for their children, this causes them defaulters. So government have to revise the population policy of the study area in particular and the country in general.

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7. Appendex

Part I Interview Schedule (questionnaires) for HHHs

Determinants of formal Credit use among Smallholder farmers: the case of Raya Alamata Woreda southern Zone, Tigray of Ethiopia

General information of Interview schedule

Date of interview _____

Kebele Administration_____

Name of interviewer_____

Demographic, Economic and Social Characteristics of the Household

1. Household head basic information

1.1. Age (years) _____

1.2. Sex_____

1.3. Level of Education: 1 unschooled 2 grade ____3 College Dip 4 University Degree

1.4. Marital status: 1 Single 2 Married 3 Divorced 4 Widowed

1.5 Religion_____

1.6. Details of family members of the household including head of the household.

1.6.1. Family size. 1 Male_____2 Female _____Total_____

2. Total land holding size of the household head

2.1. Do you have your own land? 1 Yes 2 No

2.2. Land holding of the household in the last 12 months

Own land in use _____hectare

Crop shared land _____hectare

Rented in _____hectare

Rented out _____hectare

Total land holding_____ hectare

3. Total number of animals in TLU.

3.1. Livestock holding of the household during the last 12 months.

No	Type of life stock	Number of livestock owned	Number sold during this year	Income from sale	Purpose of sale
1	Oxen				
2	Cows				
3	Calf				
4	Heifers				
5	Bulls				
6	Mule				
7	Horses				
8	Donkey				
9	Chicken				

10	Sheep				
11	Goats				
12	Bee hives				
13	Others				

3.2. Ploughing are accomplished by: 1 Rented tractor 2 Rented oxen 3 Own oxen 4 Support from relatives 5 Rented and own oxen 6 Others specify_____.
3.3. If accomplished by rent what is the price per pair of oxen (tractor) in a day_____?
3.4. What was the total amount of money paid for oxen / tractor rent during the last 12 months_____?
3.5. If accomplished by own oxen what was the number of oxen owned for draught purpose during the year? 1 one 2 two 3 three 4 Four 5 five and more than five.
4. Experience of credit use from different sources (Access to credit)
4.1. Have you ever use credit for the last consecutive years: 1 I had used but I left now 2 I had not used 3 I have used still now.
4.2. Are you demanding for credit in the last 12 months? 1. Yes 2.No
4.3. Did you take any credit for production and consumption purposes during the last 12 months? 1 Yes 2 No. If yes, for what purpose_____
Amount_____ and from which sources you borrowed? _____
If No, why? 1 Due to high interest charged 2, Due to religion 3, Due to having sufficient income

No	Source of credit	Loan amount in		Loan purposes	Interest rates	Loan period in month/year	Credit using experiences in year	Maximum loan permitted for one period Cash
		cash	kind					
1	Commercial bank							
2	RSACCO							
3	MF institution							
4	Edir							
5	Ekub							
6	Mahibar							
7	Private money lenders							
8	Neighbours and friends							
9	Relatives							
10	Others							

4.5. If all creditors can give credit in enough amounts, from which lending institution do you prefer to take the loan? 1, Bank 2. MIF 3. Cooperatives 4. Idirs 5. Equb 6. Mahiber 7. Private money lenders 8.Relatives, Neighbours and friends
Why? 1) Due to interest free 2) adjustment of repayment period 3) Others specify_____
4.6. Are there profitable activities (works) that you couldn't undertake due to lack of credit? 1) Yes 2) no
4.7. If yes, which activities do you want to perform?
1) Crop production 2) livestock fattening 3) trade activities 4) opening shop.
4.8. If you are allowed to get more loans, what are three main activities of your choice?
1) _____2) _____3) _____
4.9. What type of the loan collection method does lending organizations use?
1)_____2)_____ 3)_____
4.10. Do the loan repayment period is adequate? 1) Yes 2) No
4.10.1. If the response is no, why_____
4.11. Do you currently have any personal cash savings? How much you save last year_____?
5. Labour availability
5.1. Did you face shortage of labour during the year? 1) Yes 2) No
5.2 If yes, how do you solve labour shortage? 1) Only family labour 2) communal labour 3) hiring 4) both communal and hiring 5) family and communal labour other (specify) _____
5.4. What type of labour can be hired:-1) daily labour 2) contractual 3) Result/crop shared 4) Others specify_____.
6. Participation on non-farm activities.
6.1. Did you participating on non-farm activities? 1. Yes 2. No
6.2. If you say yes, what non-farm activities did you perform to raise your income? 1) Petty trading (Poetry, Weaving, Tannery, Blacksmithing) 2) consumer shops 3) trading (animal, crop) 4) casual labour 5) Wood work 6) others_____
6.3. Amount of income obtained from non-farm activities in Birr? 1) per month_____2) per year_____
7. Participation of households in extension package program
7.1. Participation of households in agricultural extension package program? 1) Per week_____ 2) per month_____3) per year_____
7.2. If yes, what was the type of the package you used? 1. Crop production 2. Dairy package 3) Animal fattening 4) small-scale irrigation 5) Poultry and bee keeping 6) others _____
7.3. How did you get finance? 1. My own capital 2. On credit
7.4. If on credit, who was the source? 1, MIF 2, Cooperatives 3, NGOs 4,Bank 5,Private Money lenders 6, Iddirs and Equb 7, Neighbours 8, friends 9, relatives 10,others_____
8. Psychological factors.
8.1 Risk taking ability of farm households
8.2. In your view, is borrowing from financial sources risky? 1) Yes 2) No
8.3. Did you give-up to take loans from lending organizations due to fear of risk in the last 12 Months? 1. Yes 2. No

9. Institutional factors
9.1 Preference for group lending
9.2. Is the group lending preferable to you? 1) Yes 2) No
9.3. If you say yes why? _____
9.4. If you say no why? _____
9.5. Which institution uses it mostly? 1 _____ 2_____ 3_____
9.6. How do you get the loan? 1, in group 2, individually
10. Transaction cost of lending
10.1. Is the lending procedures difficult to understand, preparing an application letter and filling different formats constraint to you? 1, Yes 2, No ?
11. Adequacy of loan repayment period.
11.2. Was the loan disbursement time by lending institutions appropriate to perform your activity? 1) Yes 2) No
11.3. If no, indicate the appropriate duration? _____
11.4. Is loan repayment period of different lending institutions adequate? 1) Yes 2) No
11.5. If you say no, how much month/year enough for repaying of the loan_____?
11.6. If you say no, which organizations' has inadequate loan repayment duration? 1) _____ 2) _____ 3) _____ 4) _____respectively.
11.7 Even if it is not enough which organizations has better repayment period?
1) _____ 2)_____ 3) _____ 4) _____respectively.
11.8. Did you re-pay your loan on time? 1) Yes 2) No
11.9. If no, what is/are the reason/s for not re-paying on time? _____
12. Communication factors
12.1. Have you received extension service from any government and/ NGOs related to credit during the last 12 month? 1) Yes 2) No
12.2. If yes for how many times? _____Per year
12.3. Who provides the extension service? 1) Development agents (DAs) 2) kebele cooperative Organizers 3) RSACCO workers 4) NGOs 5) others, specify
12.4. How far is your home from the nearest lending institution office? In hrs___ (___kms
12.5. What is your perception about different financial institutions?

No	Credit sources	Agree	Neutral	Disagree
1	RSACCO is better source of credit to rural households			
2	MFI is better source of credit to rural			
3	households			
4	Commercial Bank of Ethiopia			
5	Equbs and Iddirs are better source of credit to rural households			
6	Private money lenders better source of credit to rural households			
7	Informal source of credit better available than formal and semiformal source for women's			

8	The loan size from Equb and Iddirs source did not satisfy farmers needs			
9	The loan size from informal source did not satisfy farmers needs			
10	The loan size from RSACCO did not satisfy farmers needs			
11	The loan size from cooperatives did not satisfy farmers needs			
12	control loans not to be used for quite different ends			
13	Equbs and Iddirs are restrict loans for specific purpose			
14	Private money lenders restrict loans for specific purpose			
15	Time and distance is a problem to save regularly in the organizations			
16	Sufficient interest rate is paid for depositors			

Part II Open ended questionnaire for focus group discussion interview

1. Farmers Perception of the loan size and loan duration financial institutions
1.1. Was the size of the loan you were provided in this crop season sufficient? 1) Yes 2) No
1.2. What was the maximum amount of money provided by each lending institutions? Specify by the purpose of the loan_____.
1.3. If you were not provided according to your demand, what was your alternative?
_____
1.4. How do you feel about the loan duration provided by different lending institutions?
_____
1.5 .Which institutions provide you better size of loan? _____
1.6. Do lending institutions collect their money on time? How do they collect?
_____
2. Farmers perception on transaction cost of lending in financial institutions in the area?
2.1. How do you evaluate the lending and repayment procedure of financial institutions?
_____.
2.2. What do you feel about timely availability of loan?
_____
2.3. Does the distance of financial institutions influence you in accessing credit? 1) Yes 2) No
If yes, which affect you most_____?
3. Perception on the interest rate levels
3.1. Do you feel that you are getting sufficient interest rate of return for your deposit?
1) Yes 2) No
3.2. What is your perception in the difference between the interest rate paid to depositors and borrowers? 1) Fair 2) Not
3.3. What was the range of the interest rate of each lending institutions?
_____.
3.4. How do you compare the interest rate you are asked by the different lending organizations? 1) Fair 2) Not
3.5. Do lending institutions collect their money on time? 1) Yes 2) No
How do they collect?
4. Farmers perception about outreach financial institutions in the study area.
4.1. How do you see the availability of credit by financial institutions in the study area? 1) Good 2) fair 3) poor
4.2. Do you feel that credit institutions satisfy the credit demands of the farmers? 1) Yes 2) No
4.3. Do lending institutions require collateral in the study area? 1) Yes 2) No
Which lending institutions require it? 1) RSACCO 2) MFI 3) CBE
4.4. What are the existing sources of credit available in the area? 1) Formal 2) Informal
4.5. How do you prefer financial institutions one over the other?

Part III Open ended questionnaire for key informants' interview in the organization

1. What are your criteria's of lending? _____.
2. How much maximum amount of money does your organization give for individual farmers for one budget year? _____

And the amount of interest charged? _____

3. For how long does your organization give credit to farmers in the area? _____

Specify based on type of loan_____

What about the term of payment? _____

4. What strategy you implemented to distribute and repayment the loan?_____

How you see the loan duration of your organization_____

5. How do you monitor or follow up the loan you dispersed? _____

Do you out reach all the kebeles in the district in accessing credit?_____

6. Are there loan defaulters for the last 12 months? _____.

If so what is the reason behind? _____