

WOLKITE UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF ECONOMICS

IMPACTS OF SAVING AND CREDIT COOPERATIVES ON HOUSEHOLDS' WELLBEING IN GURAGE ZONE, SNNP REGIONAL STATE, ETHIOPIA

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THESIS SUBMITTED TO SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT FOR DEGREE OF MASTER OF SCIENCE IN ECONOMICS (DEVELOPMENT ECONOMICS)

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JUNE, 2019

WOLKITE, ETHIOPIA

DECLARATION

I do here declare that the work contained in this research paper is entirely a product of my original work with only the exception of references which have been attributed to their sources. This work has never been previously submitted in partial fulfillment of degree or depiloma in any other university.

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As thesis research advisors, we here by certify that we have read and evaluated the thesis entitled: **Impacts of saving and credit cooperative societies on households' wellbeing in Gurage Zone, SNNRP, Ethiopia,** prerepared under our guidance, We recommend that it can be submitted as fulfilling the thesis requirement for the degree of Master of Science in Development Economics.

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As members of the examining Board of the final Master degree thesis open defense examination, we certify that we have read, evaluated and examined the thesis prepared by **Samuel Chimdi.**We also recommend that the thesis be accepted as fulfilling the thesis requirement for the degree of Master of Science in Development Economics.

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Acronyms

ASCA	=Accumulating saving and credit Association
ACSI	= Amahara credit and saving institution
ADLI	= Agricultural-Development Led Industrialization
ATA	= Agricultural Transformation Agency
ATE	=Average treatment effect
ATT	= Average treatment effect on the treated
E.C	= Ethiopian calendar
EPFDR	= Ethiopian People Federal Democratic Republic
ERSA	= Economic Research Southern Africa
FCA	= Federal Cooperative Agency
FDI	= Foreign Direct Investment
FED	= Finance and Economic Development
GDP	=Gross domestic product
GTP I	= Growth and transformation pan I
GTP II	= Growth and transformation plan II
GZOFED	= Gurage zone Finance and Economic Development
HHs	= Households
ICA	= International Cooperative Alliance
IGC	= International growth centre
KM	= kilometir
MFI	= Micro finance institutions
MRM	= Multiple regression model
MSME	= Micro small and Midium Enterpise
OLS	= Ordinary least square
PS	= Propesity score
PSM	= propensity score matching
RuSACCOs	=Rural Saving and Credit Cooperative Societies
SACCOs	=Saving and Credit Cooperative Societies
SHA	= Self Help Africa
SNNP	= Southern Nations and Nationalities and Peoples Regional State
WV	= World Vision

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Abstract

The purpose of this study was to examine impacts of saving and credit cooperative societies on household wellbeing in Gurage Zone, SNNPR, Ethiopia. Primary and secondary sources were used. The primary data source was collected through direct interviews based on semi structured questionaries from 90 treared and 112 controlled group plus discussion with three informant group and extra with staffs of two unions .The study was used a cross- sectional survey research design, and the multistage sampling techiniques was employed.The survey data were analyzed through quantitative method, and used descriptive statistics and inferentially statistics logit and propensity score matching econometrics model.The study finding shows age, education, training, loan, interest rate, income sources are the main factors affecting Saving and credit cooperative membership participation. The impact evaluation finding based on household asset accumulation measurments shows Saving and credit cooperative participants were more own asset than non participants. However, there is no significant difference between income and consumption among membership participants and non participants. Finally,researcher recommend SACCOs should seriously work to develop members entrepreneurial talent and promoting members to investing on off-farm and non farm rather than invest on fixed asset activities to improve household wellbeing.

Key Words*: Membership, household wellbeing, Asset,consumption, income, logit, propensity, ,Gurage Zone.*

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CHAPTER ONE

INRODUCTION

1.1 Background of the study

In 1849 Schulze-Delitzsch Germany scholar was the first intellectual launched a campaign among German workers and artisans to establish cooperative societies and savings and loan institutions to eliminate poverty. These saving and loan institutions are recently present with more than 13,500 branch offices through out Germany and employ 160,750 staff. Thus, the credit cooperatives have more than 30 million customers, there of approximately 16 million are also members.The movement of saving and credit cooperative in Africa, since 1955- 2015 covers 6.8% penetration rate(FCA, 2017).

History of saving and credit cooperatives in Ethiopia counts above five decades. According to Federal cooperative Agency, report published in 2017, the establishment of formal saving and credit cooperatives in Ethiopia was dated back to the regime of Emperor Haile Selassie. In 1949 E.C the first SACCOs was organized by Ethiopian Road Authority employees was being rotating saving and credit practice, and legally registered, while entire members asking a question of SACCOs should have a legal background. To answer this question and encounter the challenges of cooperative, the proclamation No 241/58 mainstreaming the ground of international cooperative principles declared for all types of cooperatives. Currently there are 18,959 primary and 115 secondary (union) saving and credit cooperative with 3,430,655members in Ethiopia. These cooperatives are mobilized 7.9 billion birr members saving and 3.29 billion birr in the form of capitals(FCA,2017).

The International Cooperatives Alliance (2014), an apex organization that represents cooperatives worldwide, define a cooperative as an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise. As proclamation No. 985/2016, Ethiopia people Federal Democratic republic (EPFDR) article 7, “saving and credit cooperative society” means a society established to provide saving, credit and loan-life-insurance services to its members.

According to Ayelew(2014), access to finance will enhance the economy and enable food

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Security. However, due to heavy transaction costs requirements, it is very hard to cover a highly dispersed rural population through commercial banks. Therefore, many countries have designed different strategies to solve the financial service problems of their poor and marginal population. The main arrangement towards this effort is the provision of microfinance services through deposit taking Microfinance Institutions (MFIs) often based on the group lending approach, and membership based micro financial cooperatives and mutual assistance associations.

Saving and credit cooperatives, also known as financial cooperatives, or credit unions are a unique type of financial institution which emerged as an alternative solution to provide financial services in the presence of credit market failure (Nyankomo, 2015).

Saving and credit cooperatives are the financial institution formed by community alive together in order to solve their own financial problem for supportive role in the development of production and productivity others economic stream. Saving and credit cooperatives are geographical or organizational based foundation, non-political, non-religious & non-governmental organization formed by low and middle income community to having sustained livelihoods of the current and for the coming generation through contributing capital of SACCOs in the form share capital and members' capital in the form of saving products as well as registration fees as administration finance.

In Ethiopia the delivery of financial products and services through micro-finance institutions is one of the policy instruments used to enable rural and urban households to increase their output and productivity, induce technology adoption, increase input supply, increase income thereby helping them reduce their poverty and attain food security (Wolday, 2002).

According to Thirlwall (1994) and Maina(2011), providing access to financial services will stimulate the independence and self-development of poor households and micro entrepreneurs. This will help not only to improve poor people's economic condition, but also to provide a way to maintain or improve their quality of life in the face of uncertainty.

Kesebir&Diener (2008), and Alexandru,(2016), defined the wellbeing as a measure of human life style which makes a positive assessment of their lives and their confident, emotions, satisfaction and engagement in day today activities. It is often tied to identify financial status of individuals as well. The literature is evident to prove that household saving and social

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capital have become key factors of socio- economic development. The thoughts of classical economists had emphasized on individuals' savings effects economic development and human well-being. In the theory, household's saving has been given prominence as savings can assist to bear economic shocks in various ways (Dew and Xiao 2011).

According to Agricultural Transformation Agency(ATA),2017 reports since 1993,the overarching strategic framework guiding Ethiopia's development has been the Agricultural-Development led Industrialization(ADLI) strategy, Agriculture leads the national economy by 43%GDP, 85%exports and 77% employement. Agriculture has the share of approximately 7% annual growth over last 10 years, while industry is growing at 21% and service by 12%. Agricultural land of Ethiopia loss its fertility nature, due to less protection, long year cultivation, population growth and manmade deterioration in order to expansion of agricultural land. To maintaining land fertility and increase the mainstream economy of agricultural production purchasing agricultural inputs like fertilizers, pesticides and seed production need to satisfied rural and urban household wellbeing.

Again ATA,2017 report Ethiopia ranked on 5th in Africa by foreign direct investment growth by 46%. Accessing financial resource is the main parameter to replace FDI by home country investment. Sustainable ways to finance infrastructure, support private investment through credit market, and tap into the growth potential of structural reforms can help the country maintain high economic growth.

1.2 Statement of the problem

Formal financial intermediaries, such as commercial banks, usually refuse to serve poor households and micro-enterprises because of the high cost of small transactions, lack of traditional collateral, lack of basic requirements for financing and geographic isolation. By doing so, these institutions ignore the enormous potential in talents and entrepreneurship of this stratum of society. Providing access to financial services will stimulate the independence and self-development of poor households and micro-entrepreneurs. This will help not only to improve poor people's economic condition, but also to provide a way to maintain or improve their quality of life in the face of uncertainty. Moreover, gaining access to financial services is a critical step in connecting the poor to a broader economic life and in building the confidence for them to play a role in the larger community. Without sufficient financial services to meet the enormous demand, rural areas will remain underdeveloped. Therefore, dedicated financial institutions

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which understand the needs of the agricultural sector are needed to support rural and economic development (RoboBank,2011)

The major problem of poor households has been lack of flexible financial services on a sustainable manner, despite the high potential demand for the services, especially for micro-credit. Micro Finance Institutions are making their effort to fulfill this demand, but their limited financial and institutional capacities have become serious constraints to expand outreach to the bulk of the population. Hence, the unmatched high demand for finance and very limited supply necessitates intervention by member owned financial institution dedicated for the interest and wellbeing of the poor where by the relevance of RUSACCOs is unquestionable. (Daniel, 2014)

Recent estimates by the Global Findex (2014) of the World Bank highlight that only about 22 percent of the population of Ethiopia have access to formal financial services. However, the rise of new potential financial service providers, including micro finances and SACCOs provide a fresh optimism towards improving access to financial services in Ethiopia. Saving and credit cooperatives provide both the rural and urban lower and middle earner access to finance nearly cover 3.4% in Ethiopia and 1.7% in the study area.(own calculation)

Additionally, National Bank of Ethiopian, prepare national financial inclusion strategy plan to reach 60% access to finance in 2020, under going planed modernization reforms with the objective to supporting growing and vibrant economy and to create efficient, effective and enabling environment to the finance.

The impacts of saving and credit cooperative societies in not yet studied in the study area. Therefore, the study answers the trained and practices of saving and credit cooperative societies by product(saving and credit) in improving the livelihoods of households, power of saving and credit cooperative in national financial inclusion, share of saving and credit in micro- credit of poor households.

1.3 Research questions

The study was address the following questions:-

1. What are the factors affecting membership participation in saving and credit cooperatives?
2. What is the impact of saving and credit cooperatives on households' wellbeing?

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1.4 Objective of the study

1.4.1 General Objectives

The general objective of the study was to investigate the impacts of saving and credit cooperative societies on households' wellbeing in Gurage Zone, SNNPR, Ethiopia.

1.4.2 Specific objectives of the study

- To identify factors affecting the membership participation of household in saving and credit cooperatives.
- To evaluate the impacts of saving and credit cooperatives on household wellbeing beyond financial intermediaries.

1.5 Significance of the study

Give the decision option for households to participates in SACCOs membership or not in order to improves their own wellbeing; This study has providing benchmark information for policy makers to develop policy framework of saving and credit cooperatives over the country wide,

The study providing adequate information for saving and credit cooperative societies institutions to shape their service provision quality, and indicates the supportive gap for cooperative promotion sectors organized at different levels which are responsible to organize, register, audit and inspect saving and credit cooperative. Additionally this study will use as directive way for development workers to contribute their role in an improving the quality of saving and credit cooperative; It also use as the source of reference for the coming researcher in this area, and for the local community give know how the role of saving and credit in improving the wellbeing of individuals.

1.6 Scope and Limitation of the study

This study was geographically bounded, 90 numbers and 112 non members of individual selected from only ten Saving and credit cooperatives societies which were found in three woredas of Gurage Zone, SNNPR, Ethiopia. This sample woredas purposively select from the agro-ecological high land, Moderate and lowland climate condition, and the title isolated only to address the impacts of saving and credit cooperatives on households' wellbeing. There were issues of security and confidentiality in accessing data from different organisations, Respondents' negligence, inaccessablity of the study area, interviews questions were not properly answered and in appropriate case reflection given by respondents were actual limitation of this study.

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1.7 Organization of the study

The content of this paper was organized in to five chapters. Chapter one deals with background, statement of the problem, Research questions, objective of the study, significance of study and scope and limitation of the study. Chapter two focuses on pertinent literature review and relevant empirical case studies. The third chapter deals with methodology and research design presented in the study. Chapter four result and discussion of the study and chapter five is the summary, conclusion and recommendation part of the study.

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CHAPTER TWO

REVIEW OF LITERATURE

2.1 Theoretical Review Of Literature

According to Harro-Domar growth model any net additional to the capital stock in the form of new investment financed from saving will bring about corresponding increases in the flow of national output. Note that for an open economy, policy option related to overseas borrowing and foreign investment can be considered in the case it faces financial gap, that is difference between required saving and actual saving. The policy implication of the model is that growth of GDP can be raised by pushing up saving rate. (NetaZiv 2010)

It is needed to successfully achieve the two overarching goals of the growth and transformation plan 2015/16-2019/20 increasing domestic saving and increasing jobs by fostering a vibrant productive sector. These two tracks of financial inclusion (saving mobilization and greater financing to foster job creation) will support Ethiopian's transformation from an agriculture economy to an industrial economy. There strong saving Culture in Ethiopia.This could be leveraged to derive adoption of regulated financial services. While the demand side is still pending to provide a more accurate picture, it is believe that the current informal saving culture in Ethiopia strong and it could derive adoption of regulated financial products, should they fit the needs and habits of most currently excluded segments of a society. Many urban and rural households save either in cash or in kind. Moreover, a significant number of households are believed to use ekub, a type of rotating saving and credit association, as they saving mechanism. Greater saving mechanism by the regulated financial sectors will require product tailoring and innovation, as well as convenient access points. Ethiopians requires a range of saving products that meets their financial needs saving habits. The saving products offered today by banks, micro finance institutions and, saving and credit cooperatives may not fit the population's preferences. There is an increasing body of knowledge at the international level showing that product design need to be customer-centric and take into consideration the current financial habits and cultural preferences of potential customers. The GTP II prioritizes the modernization of Ethiopian's economy through growing investments and productivity, which ultimately results in sustained job creation.The financial sector has key role to play, by mobilizing currently informal saving into the regulated financial sector and providing MSME financing. Diverse, competitive and

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innovative products,service and access points will lead to healthy financial inclusion the is one that meets the needs of customers and benefits from adequate consumer protection and minimum levels of financial capability that provide the skills, knowledge and confidence for customers to select and utilize products that best suit their needs. In that manner, healthy inclusion fosters financial and monetary stability, which are key for economic progress and poverty reduction in the long run(Ethiopia National Financial Inclusion Strategy,2017)

2.2 Overview of financial cooperative Development

The experiments of schulze-Delitzch and Friedrich Wilhelm Raiffeisen in the cooperative field have contributed greatly to the facts that Germany is thought of as the cradle of credit unions.The existence to this day of cooperative based on their principles is proof of the success of their work. Saving and credit cooperatives were dominant in German. Franz-Hermann and schulze-Delitzsch led the creation of urban credits. They established supply cooperatives among economically weak manufacturers, and later credit cooperative in 1850.

Wilhelm Raiffeisen is the founder of the rural credit cooperative movement and agricultural cooperatives. He set up charity cooperatives at first, which provided loans, cared for orphans, and provided jobs to vagrants. In 1862, he abandoned the charity idea and created rural credit cooperative based on self- help, which developed into multi purpose cooperatives in rural communities.

Ethiopia has a rich culture of informal financial linkage, Friends and relatives provide the informal credits to one another. Many people are still now member of informal savings and credit associations such as iqub(Rotating Credit and Saving Associations),iddir and mehaber. Also the current practice of saving and credit development in Ethiopia highly accelerating, As February FCA 2017 report, Ethiopia SACCOs progress reached to 18959 with individual membership of 3430655(2,072,536M 1,358,119F) and 115 SACCOs unions with resource accumulation capital of 3.29 billion and member saving 7.91 billion.

SACCOs development in Guraghe Zone of the SNNP regional state is found at its infant stage. According to the Zone's cooperatives promotion office report(as of June 30,2017), there are 525 saving and credit cooperatives of which above 85% are in Rural areas. These SACCOs have a total membership of 40,806 individuals of which about 57% are women. These SACCOs together mobilized a total saving of ETB 67 million and have a total capital of about ETB 103.5 million. This data shows that the average saving per individual 1650 and an average membership

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of 78 individuals which is far less than is needed to achieve institutional self-sufficient by mobilizing sufficient internal form members.Therefore, both the average saving and membership indicators confirmed the level of the institution's development in the Zone.

The development of the RuSACCOs sector in the area will help these densely populated poor households to have better access to financial services and diversify their off farm income generating activities for their livelihood improvement.

2.3 Definition of terms

2.3.1 **Meaning of Cooperative**

The International Cooperative Alliance, a non-governmental organization which is the Apex organization for cooperative worldwide, defines"cooperative as an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a joint-owned and democratically controlled enterprise". The purpose of a cooperative is to allow individuals to come together and pool their resources in order to reach a common goal which would be difficult for them to achieve as individuals.

2.3.2. Meaning of saving and credit

Saving and credit cooperatives(SACCOs) are increasingly popular and may soon be the most common form of cooperative within the African cooperative movement (Pollet, 2009). They are seen to expand poor people's access to financial services (loans and saving), support enterprise start-up and expansion, and reduce vulnerability by allowing the poor to accrue saving, build assets and smooth out consumption. They are one of the largest providers of micro finance service to the poor, reaching 78 million people living below $2 a day (Fredrick O.) (2013).

Cooperatives are also sometimes seen as beneficial for conflict resolution, peace building and social cohesion. Saving and credit cooperatives is a set of financial services namely saving, credit and technical service like training, to the members in rural, semi urban, urban and metropolitan areas for enabling them to build asset, to reduce their vulnerability and improve their living standards. Rural saving and credit cooperatives is a set of financial services namely saving, credit and technical services like training, to the members in rural areas for enabling them to build assets, to reduce their vulnerability and improve their living standards(kifle.T 2008). The development of financial cooperatives in any one country may vary from formal

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cooperative banks to otherwise semiformal cooperative financial cooperatives and credit unions down to informal village based saving and loan entities(Tinotenda,2014). Financial cooperatives are member-owned cooperatives with the mandate to mobilize saving and provide access to affordable credit to members as a way to assist their socio economics wellbeing. In financial cooperatives, the members are simultaneously owners and clients and the cooperatives are formed either on common bond or occupational/association bonds. The common bonds are used as security because the ensure that members have a sense of identity mutual concern, loyalty and trust(Ziklala,2016). According to (Ziklala,2016) members are the heart of a financial cooperatives and they are reasons for survival of the institution. Saving and credit cooperatives are guided by practices, philosophy, the basic principles and values of the cooperative movement all over the world. They are established by a group of individuals with a common bond or the same objectives. Moreover, saving and credit place human need at their core; they put their members' interest first, not shareholders' values(;Ziklala,2016).

2.3.3. The Function of a SACCOs

Pelrine(2001) says that understanding any operation from a functional perspective allows seeing the logic in its operation. It allows defining;with great precision, what the operation should do and what it should not do. Further, it allows defining what the necessary inputs to produce the desired outputs are SACCOs has multiple functions but two of them are fundamental. These are financial intermediation and investment. According to Pelrine 2001, the most basic function of a SACCO is financial intermediation. That is bringing savers and borrowers together in a system that covers all of the cost of doing business and is profile or useful to both parties. Specifically the financial intermediation function of a SACCO is to take members saving in the appropriate amounts and at the appropriate times; lend them back to the members for use in their business, with appropriate management; recover all of the loans, on time and with interest; cover all cost of the SACCO from the interest; and pay the members a premium on their savings from the profit remaining from the interest after all costs have been paid. The other essential function of a SACCO is investment. That is to allow members to form a business (the SACCO itself) by placing their capital at risk and to receive a return on that investment. Specifically the investment function of a SACCO is selling shares to members in the appropriate amounts and at the appropriate times; using those shares to guarantee the savings and loans of the members, by providing the correct amount of liquidity in the SACCO to manage risk of withdrawal or late repayment; retaining some profit from interest earned on the lending operation to pay dividend to

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the members on the basis of the shares owned; redistribute the profits to the members as dividend on the basis of shares owned.

2.3.4 Impact of savings

Rutherford (1999) noted that access to more and better ways of turning savings in to lump sums-helps poor people sliding deeper into poverty and helps them lay foundations for their ambitions to better themselves and their families. This and other studies by(Graham et.al Uganda 1999)had similar conclusions that show that; poor do save, have a need to save and use saving for a variety of reasons, which include daily expenditure, to fix a leaky roof, to pay for healthcare, consumption smoothing, accumulation to meet life-cycle needs and to send children to school. In summary the two studies together with the findings from INAFI member institutions responses during a recent study(Mwaniki.2006) have indicated that the poor save to and accumulate some lump sums for: emergencies, consumption smoothing, other needs and events and daily expenditure. The findings clearly indicate that micro finance programs have had a positive impact on the livelihoods of poor clients through their saving products.

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Table 2.1: Guiding principle of cooperative

voluntary and open membership	Cooperative societies shall be voluntary organizations open to all persons willing to use their services and able to accept the responsibilities of membership without discrimination on the basis of gender, social status, race, political ideology, disability or religion.
Democratic member control	Cooperative societies shall be democratic organizations controlled by their members who actively participate in setting their policies and making decisions; each member having equal voting right as well as one member having only one vote.
Member economic participation	Members shall receive dividends from surplus according to their shares and participation after deducting and setting aside an amount necessary for reserve and other services.
Autonomy and independence	Cooperative societies shall, when enter into agreement with other organizations including government or raise capital from external sources, do so on terms that ensure democratic control by their members, maintain their autonomy and do not affect their self-help characteristics
Education, training and information	Cooperative societies shall provide education and training for their members, elected representatives, managers and employees so as to enable them to contribute effectively to the development of their societies and, advertise to the public at large particularly to the youth about the nature and benefit of societies.
cooperation among cooperatives	Cooperative societies shall serve their members most effectively and strengthen the cooperative movement by working together through local, national, regional and international structures.
Concern for community	Cooperative society shall work for the sustainable development of their community through policies approved by their members.

2.3.5 Values of cooperatives

Cooperatives are based on the values of self-help, self-responsibility, democracy, equality, equity and solidarity. In the tradition of their founders, cooperative members believe in the ethical values of honesty, openness, social responsibility and caring for others.

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2.3.6 Access to finance

Access to finance is about the ability of an individual to get financial service that are affordable, usable and meet their financial need. A well-established financial market is one that provides the majority of adults in the populations with the opportunity to access the financial services. Understanding, measuring and taking access to finance are vital in determining how financial market operate to facilitate financial services for the poor and marginalized in society (Ziklala,2016). Member's participation in cooperative increases their access to credit and give improved terms, compared with what they would be eligible for in loan as an individual. Saving and credit cooperative societies grant saving and credit services to people who would otherwise have insufficient access to financial resources(Ziklala,2016).

2.3.7 Defining Wellbeing

Has conceptualized poverty as an absence of capability. This is often evidenced by an economically driven absence of choice. Inherent in the contemporary concept of development is the contention that, by increasing capability (the ability to 'do things') people can improve their wellbeing.

Wellbeing can, however, be a difficult concept to define accurately. Concepts of wellbeing have broadened beyond an initial focus on levels of income and consumption. Wellbeing is now generally accepted as a multi-dimension construct embracing elements including income and consumption, welfare and living standards; self-reported happiness (life satisfaction) and 'quality of life, and empowerment. Perhaps most importantly, whilst money related measures are often used as a yard-stick to determine relative levels of wellbeing, wellbeing *per se* is not simply a money related concept.

In recent years, two approaches to the measurement of wellbeing have emerged: Objective Wellbeing which focuses on the economic and social aspects of wellbeing. Subjective Wellbeing which focuses on the psychological aspects of wellbeing. Objective wellbeing examines the utility of a broad set of elements including (for example): Income generated by members of the household, household consumption patterns, household investment activity, household inventory (net assets), the dwelling used by the household, the level of education of members of the household, their health and mortality, and the observance of human rights within the community. Contemporary measures of poverty and human development are increasingly grounded in objective wellbeing concepts.

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2.4 **Empirical Literatures**

In saving and credit cooperatives are integral part of the financial system by which communities are mobilized to engage in productive activities so as to generate income, create employment opportunities, stimulate the economy of a well-defined area and there by improve their livelihood situation (Gebeyehu, 2002).

As Xuezhi Qin1 & Benson Otieno Ndiege1 study findings show that, there is astrong positive association between the financial services and the economic growth, also there is two-ways Granger causality between them. However, they find out that savings are much important in fostering economic growth as compared to credits/loans.

The Sarah Brown, Daniel Gray 2015 study results suggest that the financial position of households in the comparison group is an important determinant of an individual's level of overall life satisfaction and financial well-being, with information effects generally dominating comparison effects. In addition, the effects of the comparison group are asymmetric depending on whether a household's financial position is above or below the average of the reference group. Sisira Kumara NARADDA GAMAGE, Ravindra HEWA KURUPPUGE and Alexandru-Mircea NEDELEA 2016 study reveals that savings with the formal financial sector, participation in the community activities, and network with outside community have a positive and significant effect on well-being of households. Besides this individual's feeling of their prosperousness discloses that savings with the formal financial sector and networks with outside community have a positive effect on well-being of individuals.

J.K. Nyerere Hall, Moshi Co-operative University,2015 finding reveals SACCOs play important role in socio-economic development of members and communities in general as SACCOS enable easy access to financial services to people, encourage savings, create employment opportunities, support directly community development effort like helping community access to social services, stimulate growth of business, and improve members' income as well as living conditions. His paper also revealed that the factors preventing SACCOS to meet members' expectations are both internal and external. Internal factors are like; financial constraints, poor loan recovery, governance problems, lack of common interests, high interest rates on loans by some SACCOS, weak leadership and institutional capacity, uninformed membership, inadequate education and training, limited range of financial products and poor

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quality services, poor accounting and record keeping, misuse of funds and non adherence to co-operative principles. The internal factors identified include; competition, negative impacts of external financing, weak assistance form SACCOS supporting institutions, insufficient auditing and inspection, political interference and excessive donor dependency.

Kifle T/Mariam, 2008 study reveals that the independent variables such as savings and number of times SACCO loan availed have significant positive relationship with the post–SACCO income, while the variables education and seniority at SACCO have significant negative relationship with the post–SACCO income, contrary to what was expected. Rigid lending system, high interest on loan etc. were perceived as problems of SACCOs.

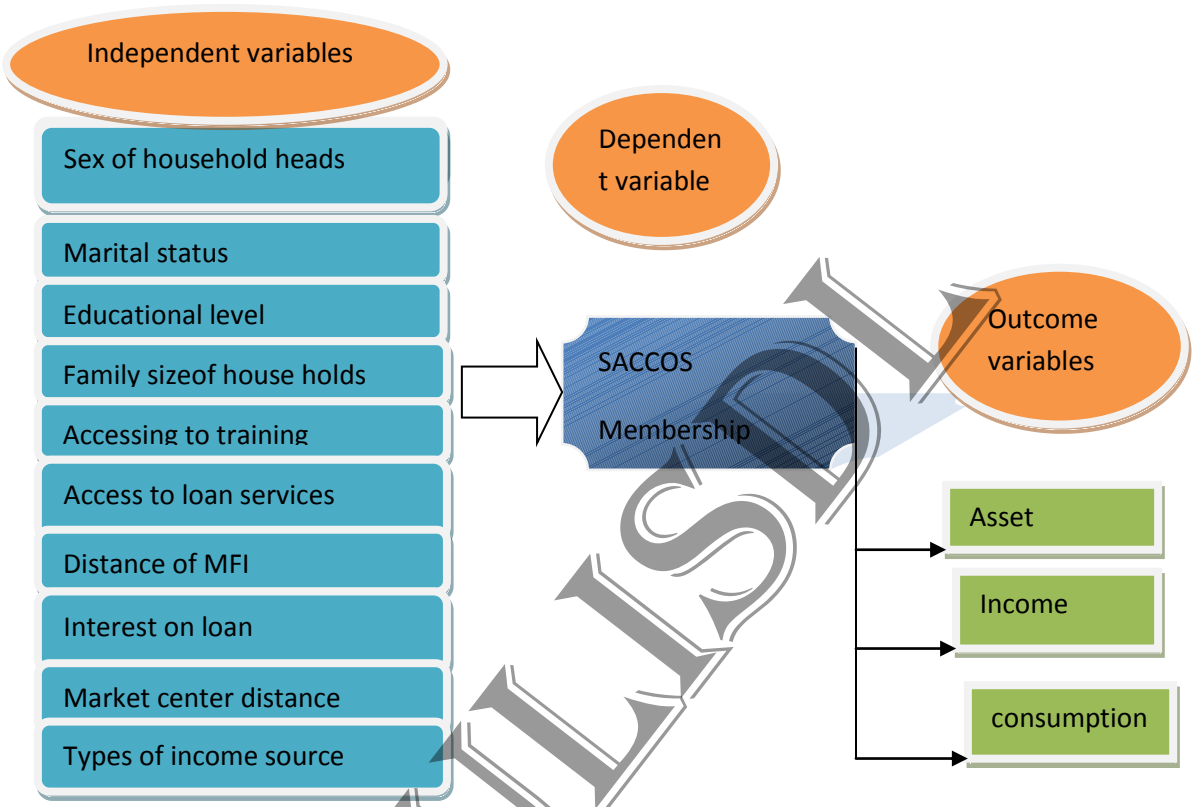
KIARIE CAROLINE KARIMI,2011 study found that a majority osf SACCOs offers Credit and saving facilities only while money transfer, insurance and deposit products are not offered. A number o f SACCOs were found experiencing poor management, low membership, and a low level o f knowledge on the part fmembers.

Mohummed Shofi Ullah Mazumder, Lu Wencong*, 2013major findings reveal that positive impact was found on income, assets endowment, standard of living and poverty reduction. Utilization of credit appears to be major factor for credit recipients raising income compared to their control group. This shows that micro-credit tends to be an important factor to have an impact on household income which minimizes the poverty situation to a reasonable extent.

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2.5 Conceptual framework

Figure 2.1 Conceptual framework



Source: Own Design (2018)

The researcher will be guided by a (Figure 2.1) conceptual framework with dependent variable, independent variables and outcome variables. Dependent variable is SACCOs membership participation while independent variables are age of household head, sex of household head, marital status of household, educational level of household head, family size, distance from market center, number of income source, access to productive loan, access trining opportunit, interest on loan and proxy to other financial institution, likewise Household Equivalence consumption expenditure, increase household income and enhance asset foundation of household.

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CHAPTER TTHREE

RESEARCH METHODOLOGY

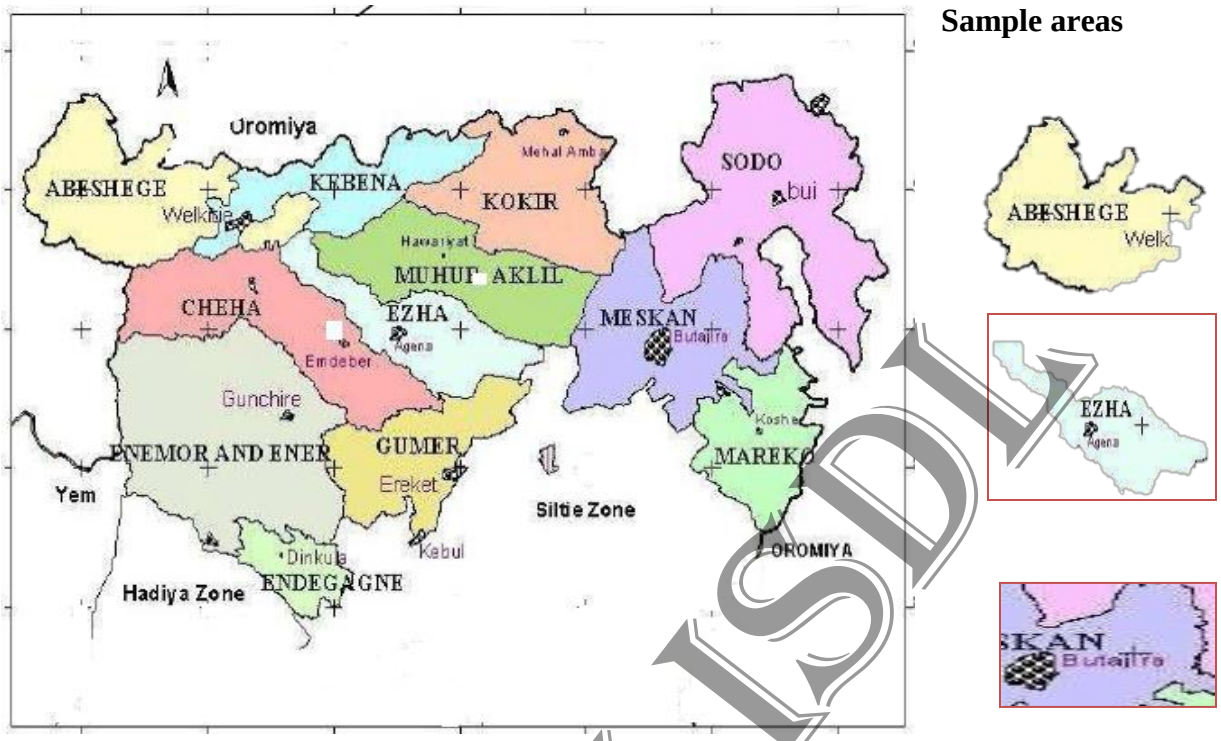
3.1. Description of the study area

The study was conducted in Gurage Zone, SNNP Regional state, Ethiopia.This zone was named form Gurage people, whose homeland lies in this zone. Gurage Zone was bordered on the south east by Hadiya and Yem Special Woreda, on the west, north and east by the Oromia Region,and on the south east by Silte zone. According to the Gurage Zone Finance and Economic Development (GZFED), (2017), published report, Zone has 13 woredas and two urban administrations with 412 rural and 50 urban kebeles. The Zonal center town wolkite found on the distance of 155 km and 259km from the capital city of the county Addis Ababa and Regional capital city of Hawassa respectively. Topographically lies within the elevation ranging from 1000 to 3,600 meters above sea level. Gurage Zone has four agro-ecological climates;- Wurchi 4.1%, Dega 27.5%, weyina Dega 65.3%, kola 3%. It covers 5893 square kare meter area of land and it had a total population size 1,724,324, from this male covers 836896(48.53%) and Female also shares 887428 (51.47%). Out of total population productive human power(15-64) coverage was 54.4%.

The livelihood of the majority of the population of Guraghe zone was highly dependent on agriculture. Mixed farming was the predominant agricultural production, where Enset or false banana was the perennial staple crop, a back-breaking job for women as they laboriously indulge in most of the production process - harvesting, storing, and preparing for consumption. Generally, the agriculture base is poor; it is common reason people to migrate across the major towns of the country, in search of cash earning opportunities to generate remittance income. The high mobility of this ethnic group is not limited to men although the number of women remaining in the villages is greater than men. Married women often are the guardians of the households in the absence of adult men; and as the new head of the household, she becomes the major supply of labour (rented, exchanged, or otherwise) for activities that are associated with agriculture production, thus compounding the already unfavorable situation of women (GZBoFED, 2016/2017).

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Fig 3.1. Map of Gurage Zone



Source: Gurage Zone FED (2018)

3.2. Research design

The study was used a cross- sectional survey research design where by data was collect at a single point of time.

3.3. Data source and method of data collection

The study employed both primary and secondary data sources. The primary data was gathered through interviews based on semi structured questionnaires prepared by author used four enumerators after one day efficient training provision and researcher himself involved in data collection from respondents.The group discussion held with three informant group formed at Butajira twon administration, Ezha and Abeshge distnict cooperative promotion and from selective SACCOs, while discussion with Nestanet Fana and Agnot union staffs. The secondary data was collected from loan agreement, cooperative promotion office report, Accounting and financial (audit) report, published reports, thesis, books, SACCOs guiding by-laws and website.

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3.4. Sampling techniques and sample size determination

The study area was geographically wide and covers 13 woredas and 2 city administrations have a huge numbers of 532 SACCOs. The sample households was selected both from Rural and urban SACCOs. Hence, Multi-stage sampling method was conceived to determine sample size. Firstly, the study area was classified into three cluster based on agro-ecology such as High land, Moderate and lowland. Currently the potential household from each agro ecology was varying due to the different livelihood characteristics in production and productivity. Lowland agro – ecology was more productive and commercial area due to soil fertility and accessable irrigation opportunity in addition to regular rainfall. Households in moderate agro ecology productivity found in medium agro ecology similary own fertile land and non use of irrigation mechanism. In the high land climate the community were inactive to easly adopt new technology due to whether condition and Acidic manner of soil. Therefore, they were engaged in subsistence agriculture like inset, Avocado, Mango, bean and barley production on small plot of land for home subsistence other than Market oriented. This cases leads researcher to collect data from each agro ecology to balance the research accuracy.

Secondary, from each agro-ecology three Woredas which have good performance in Saving and credit and senior in saving and credit promotion practice was purposively selected, Ezha from High land cluster, Abeshge from Moderate cluster and Butajira from lowland/kola cluster. Totally, these three woredas own 91 SACCOs which have 10467 individual membership.

Thirdly, since the objective of the study was to investigates the impacts SACCOs on Household wellbeing, from those three wordas10 SACCOs which have good practice and recognized by authority body in implementing over all SACCOs Extension was screened based on Woredas proportion.

Finally, to determine the sample size, SACCOs participants households who are eager in internalizing the doctrine of SACCOs in more saving, receive huge productive loan, more benefit from loan, repay loan on time 90 members was purposively selected and 112 non participants based on probability proportion was randomly selected.

Additionally to consolidate the research result, having the idea of professional's commitment and response on the impacts of SACCOs on households' wellbeing relevance. Therefore, the study was involve 21 individuals into three informants groups in respective three woredas were

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fromed. Group members includes one SACCOs expert, two process owners from promotion and audit department, heads of cooperative promotion and three individuals from model SACCOs.The discussion was takes one day for each infornmant group. Additionally one full day discussion held with the staffs of each two secondary SACCOs (union). First was held on Nestanet Fana SACCOs union which was found in Butajira town, his operational area was Butajira twon administration and three woredas of estern part of Gurage zone namely Meskan, Mareko and Sodo, and The second was Agnot SACCOs union which was centerd in wolkite town and provide financial service for ten woredas which were found at western part of Gurage Zone and wolkite town administration.

Table 3.1 Target population and sample size

Woreda	Total SACCOs	Sample SACCOs	Total Population from total SACCOs	Total Sample size from total Sample	Proportion	Sample size	
						Members	Non members
Butajira	17	Mesret	1874	347	0.18	10	12
		Rahi		224		6	8
Edja	44	EdjaMengistseraten	6877	305	0.66	12	14
		Shebraden		346		14	16
		Sheremo		380		15	17
		Gedeb		280		11	13
		Salech Mariam		230		9	11
Abeshge	30	AbehgeMamihiran	1716	252	0.16	8	10
		Udad 5 enaAkebabi		60		1	3
		Kulit 2		145		4	8
Total	91	10	10467	2569	1	90	112

Source: From respective woredas 2018.

3.5. Method of data analysis

The field data was analyzed, deploying through quantitative method, and survey information was edited, cleaned and coded. Then, the data are analyzed by using descriptive statistics and

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inferential statistics. Households' decision to participate or not to participate in SACCO was analyzed by using binary logit Model (BLM).In most applications the logit and probit models are quite similar,the main difference being that the logistic distribution has slightly fatter tails. That is to say, the conditional probability *Pi* approaches zero or one at a slower rate in logit than in probit. In the logit model the slope coefficient of a variable gives the change in the log of the odds associated with a unit change in that variable, again holding all other variables constant. For the logits model the rate of change in the probability of an event happening is given by $\beta j\ Pi(1 - Pi)$, where βj is the (partial regression) coefficient of the *j*th regressor. But in evaluating *Pi* , all the variables included in the analysis are involved(Gujirat 2004).

Propensity score Matching Model was used to evaluate the impact of SACCOs on households' wellbeing, because the PSM essential tools measure evaluate the effect SACCOs for participant and non-participants. For these purposes appropriate statistical software (Stata 13) was used. In addition, to simply show the result to readers, respondents' variability on those hypothesized socio-economic and demographic variables and to present the output of each quantitative research models tables and graphs analysis also was used.

3.6 Propensity score Matching

PSM concerns with the implementation of randomized evaluation, the approach is still a perfect evaluation method in theory. Propensity score matching entails forming method sets of treated and untreated subjects who share a similar value of the propensity score(Rosebaum&Rubin 1983a,1985). With matching methods, one tries to develop counterfactual or control group that is as similar to the treatment group as possible in terms of observed characteristics. PSM constructs a statistical comparison group by modeling the probably of participating in the program on the basis of observed characteristics unaffected by the program.

A logit model was used to estimate propensity scores using a composite of pre-intervention characteristics of the sample households (Rosenbaum and Rubin, 1983) and matching was then performed using propensity scores of each observation. logit model for the propensity score would have to satisfy the conditional independence assumption by reflecting observed characteristics X that are not affected by participation.

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In estimating the logit model, the dependent variable is SACCOs participation, which takes the value of 1 if a household participated in SACCOs institution and 0 otherwise. The mathematical formulation of the logit model is as follows:

$$di = \frac{1}{1+e^{-yi}} = \frac{e^{yi}}{1+e^{yi}}$$

Where di, is the probability that i^{th} households participates in SACCOs,
yi is a linear function of N independent variable (x) and expressed as

$$yi = \beta_0 + \beta_1 x_1 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \beta_9 x_9 + \beta_{10} x_{10} + \beta_N x_N + \varepsilon$$

Where $x_1 - x_N$ = is explanatory variable

β_0 =intercept

$\beta_1 - \beta_N$coefficient of explanatory variable

ε = error term

The probability that a household belongs to the non- participant of SACCOs is given by:

$$1\text{-}yi = \frac{1}{1+e^{Di}}$$

3.6.1 Propensity score

The propensity score is the conditional probability of receiving the treatment given the pre-treatment variables: it is is the probability of receiving treatment (A=1) given covariates X,

$P(X) = Pr(T=1/X) = F(x'i\beta)$ ----------Eq (1)

Assuming $0<P(X)< 1$

There is a positive probability, if P(X)>0, even no the probability of receiving treatment if A=0). (Rosebaum&Rubin 1983,) showed that conditioning on the propensity score allow unbiased estimation of treatment effect.

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3.6.2 Estimate propensity score

PSM is that it does not necessarily require a baseline or panel survey, although in the resulting cross-section, the observed covariates entering on impact evaluation logit model for the propensity score would have to satisfy the conditional independence assumption by reflecting observed characteristics X that are not affected by participation. A preprogram baseline is more helpful in this regard, because it covers observed X variables that are independent of treatment status.

3.6.3 Average treatment effect:-

(ATE), which is defined as ATE=E[Y(1)-Y(0)]---------- (2)

The additional challenge when estimating ATE is that both counterfactual outcomes E[Y(1)/ T=0 and Y(0)/T=1] have to be constructed.The ATE is the average effect, at the population level, of moving an entire population from untreated to treated.

3.6.4 Average treatment effect on the treated' (ATT),

The ATT is the average effect of treatment on those subjects who ultimately received the treatment,which is defined as:

AT T = E(T = 1) = E[Y (1)|T = 1] − E[Y (0)|T = 1----------(3)

As the counterfactual mean for those being treated E[Y(0)/T=1] is not observed,one has to choose a proper substitute for in order to estimate ATT. Using the mean outcome of untreated individuals E[Y(0)/D=0] is in non-experimental studies usually not a good idea, because it is most likely that components which determine the treatment decision also determine the outcome variables of interest.

Thus, the outcomes of individuals from treatment and comparison group would differ even in the absence of treatment leading to a ' self- selection bias'. For ATT it can be noted as:

E[Y (1)|D = 1] − E[Y (0)|T = 0] = AT T + E[Y (0)|T = 1] − E[Y (0)|T = 0]---------- (4)

the difference between the left hand side of equation (4) and ATT is the so called ' self-selection bias'.

The true parameter ATT is only identified,

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if:E[Y (0)|T = 1] − E[Y (0)|T = 0] = 0

3.6.5 Assumption needed to apply PSM

a. Conditional independence assumption:

One possible identification is to assume**,** that given a set of observable covariates x which are not affected by treatment, potential outcomes are independent of treatment assignment:

(Unconfoundedness) Y (0), Y (1) proportion to Ti|Xi ----------(5)

This implies, that selection is solely based on observable characteristics and that all variables that influence treatment assignment and potential outcomes simultaneously observed. Clearly, this is a strong assumption and has to be justified by the data quality at hand. It should also be clear, that conditioning on all relevant covariates is limited in case of high dimensional vector x.

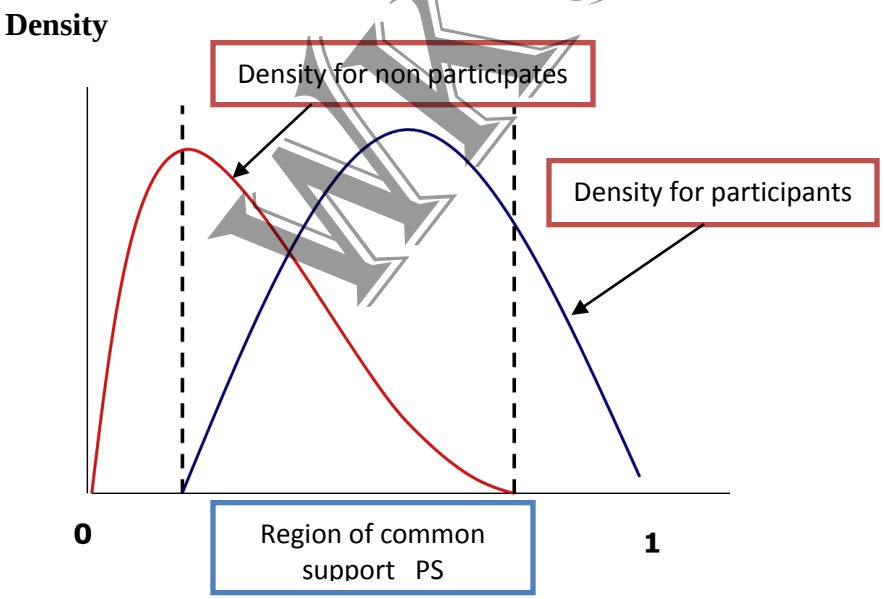
b. Common support or overlap condition:-

A further requirement besides independence is the common support or overlap condition. It rules out phenomenon of perfect predictability of T given X:

(Overlap) 0 <P(T = 1|X) < 1 (6)

It ensures that persons with the same x values has positive probability of being both participants and non-participants (Heckman, and Smith 1999)

Fig3.2 Region of common support



Source: Hechman, and smith 1999

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3.6.6 propensity score Matching methods(Algorithms)

Different matching criteria can be used to assign participants to non-participants on the basis of propensity score. Participants are Matched on the basis of this probability, or propensity score, to non-participants, using different methods.Matching methods for bi partite matching designs consist of two parts: a matching ratio and a matching algorithm. The matching ratio can be one to one from treatment and control,variables or fixed. The matching algorithm is where the matching actually takes place. one of the most popular algorithms is greedy matching, which includes

i. **Nearest Neighbour Matching:-**Comparison units within a certain width of the propensityscore of the participants units get matched, where the width is generally a fraction of standard deviation of the propensity score.

ii. **Caliper and Radius Matching:-** This procedure therefore involves matching with replacement, only among propensity scores within a certain range. A higher number of dropped non participants likely, however, potentially increasing chance of sampling bias.

iii. **Stratification and interval Matching:-** stratification on the propensity score involves stratifying subjects into mutually exclusive subsets based on their estimated propensity score. Subjects are ranked according to their estimated propensity score. Subjects are then into subsets of the estimated propensity score.

iv. **Karnel and local linear Matching:-**one risk with the method just described is that only a small subset of non-participants will ultimately satisfy the criteria to fall within a common support and thus construct the counter factual outcome. Non parametric matching estimator such as kernel matching and LLM use a weighted average of all non-participants to construct the counterfactual match for each participant. If Pi is the propensity score for participant i and Pj propensity score for non-participant, the weights for kernel matching are given by

$$w(i,j) = \frac{K\left(\frac{Pi-pj}{a_n}\right)}{\sum_{k\in c} k\left(\frac{pk-pi}{a_n}\right)}$$

Where k(.) is a kernel function and $a_n$is a band width parameter.LLM, in contrast, estimates a non parametric locally weighted regression of the comparison group outcome in the neighborhood of each observation. Kernel matching is analogous to regression on a constant

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term, whereas LLM uses a constantand slope term, so it is " linear." LLM can include a faster rate of convergence near boundary points. The LLM estimator has the same form as the kernel-matching estimator, except for the weighting function:

$$w(i,j)LLR = \frac{kij \sum_{k\in c} K_{ik}(Pk-Pi)^2 - \left[k_{ik}\left(P_j - P_i\right)\right] \sum_{k\in c} K_{ik}(P_k - P_i)}{\sum_{j\in c} K_{ik} \sum_{k\in c} K_{ik}(P_k - P_i)^2 - (\sum_{k\in c} K_{ik}(P_k - P_i))^2}$$

3.7. Variable Definitions and their Expected Signs

3.7.1 Treatment Variable: Yi is equal to 1 if the household is participant in SACCOs and equal to zero (0) otherwise.

3.7.2 Outcome variable:

1. Consumption expenditure(consump): Consumption expenditure of the household for different food and non-food purposes. Food consumption or nutrition was measured on daily based expense.Whereas, nonfood consumption expenditure like social participation, education related expense, medical treatment, potable water, telephone, Electricity (solar and rural based light), for home utensils and related durable materials evidence were monthly collected and converted to annual basis.

2. Household Income(Inco): Generating income from different sources like saving interest, dividend, crop products, animal products and by products, non-farm activities. It includes having high purchasing power and the ability to acquire the basic goods and services. The reports use disposable household income adjusted for household size and composition

3. **Household Asset base(Ass):** This consists cash and non-cash property like cash on hand, cash at Bank, farm and non-farm machinery, home equipment and properties, houses, stores and its stock, livestock, vehicles in terms of money value by using current market price.

3.7.3 Independent variables:

The independent variables of the model are those variables that are expected to have correlations with the SACCOs membership participation and the outcome variables selected in this study. The socio-economic, demographic and institutional factors affect the dependent variable and outcome variables are presented as follows

1.Age of the Household(Age): It is a continuous variable measures the period from the respondent's birth to the time of the interview. As the age of household increases the attitudinal change of households also become increases. The expected sign of household age related with SACCOs membership participation is positive.

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2. Marital status(Mars): Primary group of human life. It dummy variable takes the value of 1 if married and 0 otherwise. Since SACCOs is on behalf of solving financial problem, minimize the community social bias, individuals after starting primary social life desides to participate in social institution and it expectd positive effect on SACCOs membership participation.

3. Education level(Edu): Education provides knowledge and opens the door to new opportunities that can improve one's living standard. Education is positively linked to many aspects of peoples' lives such as income, health status, Social participation, work etc. Therefore, more educated household's positive effects on SACCOs progress to assure food security wide community.

4. Family size(Fmysize): It is a continuous variable related to the sample households living under the same roof and influence seriously household's consumption and status of food self sufficiency, as well as asset formation. Family size was hypothesized to have negative effect of SACCOs membership participation even if the majority of family members categorized under age of dependency, Family size was hypothesized to have positive effect of SACCOs membership participation even if proportion family members active man power is greater.

5. Sex of respondent(Sex): Biologically difference between male and female.it is dummy variable 1 if the household head is male and 0 otherwise. In the study area both male and female innovative business oriented indeginous propreous and female specially have natural gift in cost minimization over all the study area. Sex of household hypothesized positive effect on SACCOs membership participation.

6. Distance to market/ office/(Mktdis): This is a continuous variable measuring the distance from home to the nearest market and others infrastructures in kilometers. Accessibility to market and closer to market center, cooperative office, access to all weather roads, market information, transportation, and others infrastructures is expected to have positive effect in improving the livelihood of households and membership participation.

7.Source of income(sincome): Is a skill or type of experience respondents engaged in either regular or irregular source of income sources of respondent's like on farm, off farm, non farm, civil servant, lobour, retirement and others as well as income diversification is expected positive effects on SACCOs.

8.Access productive loan(cred): In rural areas credit remains the largest funding sources for launching of petty business by SACCO members and other non members. Since the credit is easily accessible and available in time, enhancing the bargaining power of individual and

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expanding source of income. Access productive Asset hppothesized expected positive effect on SACCOs membership participation.

9. Access training opportunity(Train): Organized activity aimed at imparting information and /or instruction to improve the recipient's performance to help households attain to acquire required level of knowledge or skill on financial service, Agricultral service, health/sanitation concern have expected positive effect.

10. Interest on borrowing(Interest): This continuous variable implies that if interest rate charged on borrowing is less than what formal financial institutions and money lender charged customers are attracted to be a member of SACCOs as it minimizes there cost and vise versa.

11. Proxy to other financial institutions(MFIdis): Nearby non SACCOs alternative financial institution which able to individuals to obtain financial services, including credit deposit, insurance and others discourage membership is expected negative effect and vise versa.

3.8. Hypothesis

Tabale3.2 variables Measurement and Hypothesis

Variables	Measurement	Expected Sign
Treatment Variable		
SACCOs Participation	1 for participant 0 otherwise	
Outcome variables		
Consumption expenditure	In birr	
Household income	In birr	
Household asset base	In birr	
Independent variables		
Age of the Household	Years	(+)
Marital status	1 for married 0 otherwise	(+)
Education level	Final Grade completed	(+)
Family size	Number	(-,+)
Sex of respondent	1 for male 0 otherwise	(+)
Distance to market	Km	(-,+)
Source of income	1=onfarm,2=offfarm, 3= nonfarm, 4= civil servant, 5=retirement, 6=labor.	(+)
Access productive asset:	In birr	(+)
Training/information	1 if attain 0 otherwise	(+)
Interest on borrowing	Percentage	(-,+)
Proxy to other financial institutions	KM	(-.+)

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CHAPTER FOUR

4. RESULT AND DISCUSSION

This chapter presents the findings of impact of saving and credit cooperatives on households'wellbeing of respondents using measurements of asset accumulated by household, income gained and adult equivalent consumption at household level. logit was the binary econometerics model used measures the factors affecting membership participation and non participation. The study consider diagonistic analysis test namely, Multicollenierity and Heteroscedasticity test. Propensity score matching (PSM) method was employed to estimate the impact evaluation of Saving and credit cooperatives on household wellbeing.

4.1.1 Descriptive analysis test of sample respondents for continous variable

Explanatory variables in this study were contain both continous and descrete, their testing tools were completely different. The continous variables scientifically tested in t-value, Here under the descriptive analysis results for continous variables using summary statistics described in descriptive form of mean, standard deviation, frequency distribution and percentage present as bellow.

Table 4.1 Summary statistics Analysis for continuous variables

Variable	SACCOs participants(90)				SACCOs Non participants(112)				Mean difference	
	Mean	Std. Dev.	Min	Ma	Mean	Std. Dev.	Min	Ma	Mean	T-test
Age	42.65556	10.06179	25	80	41.54464	10.72329	23	70	1.110912	0.7521*
Edu	8.3	4.696281	0	16	7.116071	4.913203	0	16	1.183929	1.7359*
MFIdis	13.22222	10.26697	2	38	14.22321	10.44135	1	38	-1.00099	0.6823
Interest	21.31111	7.909097	10	36	19.08036	.996737	13	24	2.23075	-2.9576*
Fmysize	4.233333	2.182927	0	12	4.339286	2.440475	0	12	-0.10595	0.3213
scincome	1.422222	.5188097	1	3	1.258929	.4400151	1	2	0.163293	-2.4198*
Mktdis	3.2	1.007834	2	6	3.446429	1.080868	2	7	-0.24643	1.6595

NB: * representing t-test was siginificant.

Source:owndescriptive result(2019)

Age of the household head(Age): The satatistical summary result shows the mean age of the sample household heads was 42.03 years with the standard deviation of 10.42. Accordingly the mean age of participants was 42.65 years and 41.54 years for non-participants with the standard

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deviation 10.06 and 10.72 respectively. The minimum and maximum age of the sample respondents was 23 and 80 years.The survey results magnify the age percentage of household heads almost the categorized of under productive human power that was the range between 15-65 years for both membership participants and non participants.

Education level of household head(Edu): Education provides knowledge and opens the door to new opportunities that can improve one's living standard. The average and standard deviation education level of the total sampled household heads, SACCOs participants and non participants was 7.64, 4.84; 8.3,and 4.69; 7.11,4.91 respectively. From the total sample respondents, 19(9.4%) household heads were illiterate, 23(11.39%) household heads were certificate Diploma, 21(10.4%)household heads were degree holder and the majority of 139(68.81%) household heads were attend the primary and secondary school. Likewise, from the total participants 90, 5(5.56%) household heads were illiterate, 12(13.33%) household heads were certificate diploma, 9(10%)household heads were degree holder and the majority of 64(71.11%)household heads were attend the primary and secondary school. Likelly, from the total non participants 112, 14(12.5%) household heads were illiterate, 11(9.83%)household heads were certificate diploma, 12(10.71%)household heads were degree holder and the majority of 75(66.96%)household heads were attend the primary and secondary school.The discussion SACCOs union staff raise illetracy was the main challenge ender SACCOs developemt specifically in rural area and leracy was a great opportunity and reason in urban SACCOs developement. Eduction level of household heads economically meanining full and statistically siginificant at 5% probability level.

The Distance of micro finance institution(MFIdis): This variable refers to the far apart formal financial institution center from household head resident. It is measured in kilometer. The statistical result of this study shows the average of distance for microfinance institution was13.78 sample household head with standard deviation 10.35. The minimum and maximum sample respondents distance from micro finance institution in km is 1 and 38 respectively .Similarly the average of household heads for SACCOs participants was 13.22 with the standard deviation of 10.26. while average of household heads for non SACCOs participants was 14.22 with the standard deviation of 10.44. Distance of micro finance institution center was statistically insignificant and more likely effect on households SACCOs membership participation.

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Interest rate on loan(interest): The interest rates charged vary from one SACCOs to another as well as among micro finance institution in the study area, the minimum and maximum interest rate on loan for sample household head of this continuous variable was 11 and 36%. The mean and standard deviation of sample respondent heads was 20.07 and 5.42 respectively. As econometrics logit model results shows that interest rate on loan statistically significant and economically meaning full at 1 % probability level. The statistical result of this variable was contrary to hyphotesis plan. From this view of points, the discussion with informant respondent and experts assure the significance of incur interest on loan, they were said the community of the study area had rich in an indigenous saving culture that was depressed at one season during "Arafa" or "Meskel" celebration for consumption, this type of saving was not involve in economic scale, the credit services delivered especially from SACCOs/micro finance by interest was make sense of ownership and decision making transfer from individual to SACCOs/micro finance, this may enforce beneficiaries used their loan within a time frame and pay back in addition of interest. This makes beneficiaries care for money and encourage the entrepreneurship of respondent. The second reason why loan interest was significance, is it was indirectly saving in SACCOs, due to what they charge as interest rate today they will received in the form of dividend after auditor authorized. In line with this they were mention why SACCOs collect interest was for incure members saving inerest, administration cost and dividend distribution. This practice benefiting members due to the nature of Saving and credit cooperative were members service oriented rather than benefit oriented. Before government design formal micro finance institution they usually used illegal money lender that is costy and beraucratic to provide finance to beneficieries. Non participant respondent response we incure 18% interest rate for micro credit financial services and range of 60%-120% interest rate for money lender, for money lender not only the expensive interest rate to access loan we should invite in local drinking or provision of free labour service to access finance. Therefore, the interest rate charges for SACCOs below money lenders and others micro finance institution, so the interest for SACCOs was not consider as challenge to join SACCOs membership even if attract membership.

Family size(Fmy size): The average of family size sample household was 4.29 with the standard deviation of 2.32. In the study area, the minimum and maximum family size sample household was 0 and 12 respectively in number. As econometrics results, family size was statistically insignificant and inversely affecting household saving, it means that having a number of family size less saving.

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Number of income source(scincome): Numbers of income source identified in this study were employee, general agricultural activities, non farm, trade, labours and pension. The results of this study shows from total sample respondents 136(67.33%) household heads were engaged only in one of income source listed here above, 64(31.68%) household heads were involve in two type of income source, and 2(0.99%) house hold were participate in three income source activities. Here the discussion was about income diversification, it has the concept of risk minimization and gaining more income. Econometrics results prove this concept, as it shows, involvement in more income source types was statistically significant and positive effect on household SACCOs membership participation at 10 % probability level. The summary statistics results indicates the mean average numbers of income source and its standard deviation was 1.33 and 0.48 respectively. The minimum and maximum number of income sources for this discrete variable was 1 and 3 types.

Distance of market center(Mktdis): In the study area, there was no serious problem of market access for both SACCOs membership participants and non-participants to sell their crop and animal products, and purchase consumption goods and industrial materials in fair price. The distance of market center mean average and standard deviation was 3.33 and 1.05km respectively.

4.1.2 Descriptive analysis of sample respondents for descrete variable

The main difference of descrete variables with continous was, unlike continuous variable the descrete variable test with pearson chi2(1) the dummy variables used in this study was tested and analysed. Descriptive analysis of table 4.2 result shows acceess of credit opportunity and training facilty was high chi2 and p-value mininmum indicates both were statistically significant and economically meaningfull.

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Table 4.2 pearson chi-square test for descrete variables

Variables	chi2 test	Pr(P-value)
Sex	1.6740	0.196
Mars	1.1946	0.274
Cred	40.7094	0.000*
Train	42.3842	0.000*

Nb:-* probability level 1%

Source: own descriptive result,2019

Sex of the household head(sex): This dummy variable mean sex of the sample household heads was 0.63 with the standard deviation of 0.48. Separately the mean sex of SACCOs membership participants was 0.67 with standard deviation was 0.47 and for mean sex of non-participants was 0.59 with the standard deviation of 0.49. From the total sample (202) male household heads covers 127(63%) and female households shares were 75(37%) . Likewise, from 90 participants, 61(67.78%) households are male headed and 29(32.22%) households were female headed. While from 112 households were 66(58.93%) male headed and households 46(41.07%) were female headed for non-participants.

Marital status household head(Mars): Marital status was more likely effect the households SACCOs membership participation and statistically insignificant. From total sample household heads 177(87.62%) respondents were married, 21(10.4%) households were unmarried, 2(0.99%) were widowed and 2(0.99%) were divorce. The mean of marital status and standard deviation of sample household head was 0.89 and 0.30 respectively. The SACCOs participants and non participants mean of marital status was 0.92 and 0.87 with standard deviation 4.69 and 4.91 of both sample head respectively.

Access to credit service(cred): Access to credit services was statistically significant and positive effect on SACCOs membership participation at 1% probability level. From individual interview during data collection and informant group discussions, it was observed that low and medium income level households seek micro credit service to enhance their bargaining power for purchase improved agricultural inputs, to diversify income source, construct basic human need residence house, agricultural machineries, equipment and utensil materials, participate on social services, from SACCOs and nearby micro finance institution. From total sample

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household heads 158(78.23%) were benefited from active micro credit which were 89(43.56%)of them access from SACCOs and 69(28.21%) households got short term credit service from micro finance institution for the above purposes while 44(21.77%)household heads were not benefited from micro credit. Survey data indicates out of SACCOs participants 88(98.89%) household heads were almost got credit service. Therefore, SACCOs was the appropriate tools outreach credit coverage. The mean of credit service for total sample household head was 0.78 with standard deviation of 0.41. Separately the mean of SACCOs participants 0.98 with standard deviation of 0.10, and the mean of SACCOs non participation was 0.61 with standard deviation 0.48 for this dummy explanatory variable.

Accessing training opportunity(Train): This was discrete variable in this study. From the total respondents the mean and standard deviation of household head was 0.17 and 0.37 respectively. From total sample house hold heads only 35(17.32%) access training on financial literacy, agricultural extension, health, sanitation and security; 167(82.68%) household heads were not access training. This results was shows a great capacity building gap in providing training, but currently good initiation in government and non government organization like Self help Africa Ethiopia, World Vision Ethiopia and Agnot Saving and credit union in providing capacity building training to overcome the inaccessable training opportunity. According to econometrics table result shows, training facility was statistically and economically meaning full on SACCOs membership participation at 1% probablity level. Chi 2 test also shows high pearson and small p- value.

4.2 Econometrics Analyisis

In this part the econometrics model reports results econometric analysis factors affecting membership participation and the impact of SACCOs micro finance services on household asset accumulation, income of household heads and consumption of sample households.

4.2.1 Diagnostic tests

Before running logit regression model, the following diagnostic tests were made to check the cross section survey data be free from the existence of multicollinearity test and heteroscedasticity test problems in the regression analysis.

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4.2.1.1 Multi colinearity test

Table 4.3 Multicolinierity analysis test for explanatory variables

	Age	sex	Edu	Martal	Mfidis.	credit	Intert	Train	Fsize	Scinco	Mkt.d
variable											
Age	1.0000										
sex	0.0404	1.0000									
Edu	-0.3573	0.2170	1.0000								
Marital	0.3086	0.1075	-0.4281	1.0000							
MFI dis	0.0916	-0.0245	-0.4035	0.2943	1.0000						
Credit	0.0366	-0.2069	-0.1110	0.1346	0.1025	1.0000					
Interest	-0.1113	0.0086	-0.2764	0.1394	-0.0803	0.1047	1.0000				
Train	0.0045	0.0811	0.0202	0.1131	0.0656	0.2416	0.1724	1.0000			
Fmly size	0.4830	0.0040	-0.2944	0.4137	0.3450	0.1441	-0.2119	-0.0125	1.0000		
Src. inco.	0.1399	0.0399	0.0423	0.1000	0.0049	0.0896	-0.1481	0.1194	0.2105	1.0000	
Mkt. Dis.	0.2185	-0.0073	-0.3772	0.2171	0.2578	0.0435	0.0087	0.0152	0.3172	0.1120	1.0000

Source: own econometrics result,2019

Multicollinearity is a state of very high intercorrelations or inter-associations among the independent variables. It is therefore a type of disturbance in the data, and if present in the data the statistical inferences made about the data may not be reliable test was done to determine the association among the independent variables.

Multicollinearity occurs due to by an inaccurate use of dummy variables, by the inclusion of a variable which is computed from other variables in the data set, repetition of the same kind of variable and when the variables are highly correlated to each other. One such signal is if the individual outcome of a statistic is not significant but the overall outcome of the statistic is significant. In this instance, it might get a mix of significant and insignificant results that show the presence of multicollinearity. Suppose after dividing the sample into two parts, finds that the coefficients of the sample differ drastically. This indicates the presence of multicollinearity. This means that the coefficients are unstable due to the presence of multicollinearity. Then observes drastic change in the model by simply adding or dropping some variable. This also indicates that multicollinearity is present in the data (Gujarati, 2003).

There are two types of measurement to test the existence of multicollinearity. These are: the pearson contingency coefficient, which measures the association between various categorical variables based on the Chi square, was computed in order to check the degree of association or the existence of the multicollinearity problem among the categorical explanatory variables. The decision rule for contingency coefficients states that when its value equal and greater than 0.8, there is a problem of association between the independent variables, i.e., the values of

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contingency coefficients range between 0 and 0.8, with zero indicating no association between the variables and values above 0.8, indicating a high degree of association.To test the presence of serious multicollinearity problem, Collin test for both discrete and continuous variables was applied.In this study, table 4.3 result shows there were no serious multicollinearity problem, therefore nothing action to omit and add extra explanatory variable.

4.2.1.2 Heteroscedasticity Test

Heteroskedasticity test is present if the variance of the unobserved factors affecting SACCOs membership participation. The LR chi2 (11) test proves there is a heteroscedasticity problem with chi2 values of 112.09 and corresponding p-value of 0.000 which reject the null hypothesis that accept the alternative hypothesis. Then to solve this problem roubust standard was used shown on the right hand side of table 4.4.

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4.2.2 Logit Model Results

Table 4.4 Estimated coefficient and Merginal effect as well as roubust

Logistic regression — Number of obs = 202

LR chi2(11) = 112.09

Prob> chi2 = 0.0000

Log likelihood = -82.767872 — Pseudo R2 = 0.4038

Mership	Coef	dy/dx	Roubust Std.Err	z	P>|z|
Age	.0479022	.0114626	.02312162	2.06	0.039**
sex	.4424026	.1041878	.45007	0.98	0.326
Edu	.1464105	.035035	.0574058	2.55	0.011*
MarS	.5245503	.1185317	.7918303	0.66	0.508
MFIdis	.0005893	.000141	.0229696	0.03	0.980
Cred	4.021717	.5845764	1.057602	3.80	0.000*
Interest	.116977	.0279918	.0412735	2.83	0.005**
Train	3.016612	.6079809	.8651387	3.49	0.000*
Fmlysize	-.0806873	-.0193079	.1100636	-0.73	0.463
sincome	.7957525	.1904179	.4425171	1.80	0.072***
Mktdis.	-.3325792	-.0795838	.2008144	-1.66	0.098***
_cons	-9.929421	.0000487	2.116221	-4.69	0.000

Nb; *,**.*** problability level of 1%,5% and 10%.

Source: Own result (2019)

The table 4.4, Econometrics output shows from total eleven explanatory variables includes Age of household head, sex of household head, Educational level of respondents, Marital status of household, the distance household from other micro finance institution, access to credit services, interest on loan, access to training opportunity, family size of household head, owning numbers of income source and distance from local market, seven of them which were age of household head, educational level of respondents, access to credit services, interest on loan, access to training opportunity and numbers of income sources were statistically significant, and the first six were positive effect on SACCOs membership participation. The sign coefficient estimation

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of the logit model with factor affecting SACCOs membership participation intended as follows. The sign of local market center distance and family size are less likely affect membership participation. The sign of household head age, sex of household head, educational level of respondents, marital status of household, the distance household from other micro finance institution, access to credit services, interest on loan, access to training opportunity, of household head and owning numbers of income source more likely effect SACCOs membership participation.

4.2.2.1 Merginal effect Results Dicussion

The marginal effect of change in a regressor on the conditional probability that $T = 1$. For general probability model (Eq 1.) and change in the*j* th regressor, assumed to be continuous, this is

$$\frac{\partial \Pr[Ti=1/xi]}{\partial xij} = F'(x'_i\beta)\,\beta_j \text{----------(Eq1.)}$$

where $F'(z) = \partial F(z)/\partial z$. The marginal effects differ with the point of evaluation $\mathbf{x}i$, as for any nonlinear model, and differ with different choices of $F(\cdot)$.

From the estimation result of the Merginal effect of the logit model of the above table depicated that the statistically significant and economically meaning full variables that affect SACCOs membership participation were age of the household head, Educational level, access to credit services, interest rate, access to training opportunity, number of income source and market center distance. Table 4.4 shows the marginal effect estimation of the logit model with factor affecting SACCOs membership participation interprated as follows. A one more year, increases the probability of marginal effect of SACCOs membership participation by 0.114626, keeping other constant. Being male increases the probability of marginal effect of SACCOs membership participation by 0.1041878, on average. A one more acadamical grade, increases the probability of marginal effect of SACCOs membership participation by 0.035035, keeping other constant. Being marital status of household heads increases, the probability of marginal effect of SACCOs membership participation by 0.1185317 on average. A one more distance of financial institution increases, the probability of marginal effect of membership participation by 0.000141, keeping other variables constant.

The marginal effect of access to credit indicates that, being access to credit services increases, the probability of merginal effect of membership participation by 0.5845764 on average.The result is in complete agreement with the study of (Solomon kebede 2016) as expected the

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amount of loan that the sampled households received from ACSI or/and other informal source was found to have a significant positive effect on financial savings of households . The explanation of this result is straight forward that as households borrowed more cash, the ability of purchasing productive assets also increased. In the case of sample treatment groups, Pitt H and Khandker SR (1998) which found a significant association between women taking out loan and their accumulation of non financial assets. In the same way Goldberg J and Yang D (2011) also found that in Malawi participation in micro finance(taking loan) increases savers accumulation of non financial assets. Borrowers consists of those whom receive valuable assets on agreement or promise on paying the borrowed amount back in given time and cost related (Kon and Storey, 2003, Hodgman, 1960).

A one less percent loan interest rate increases, the probability of marginal effect of membership participation by 0.0279918, keeping other constant. SACCOs members enjoy low interest rates as compared to loans provided by other financial institutions like banks. Banks and other financial institutions charge high interest rates which are normally calculated on compound interest basis, when interest rates are low, encourage borrowing and ultimately promote investment in different sectors(Gasper2013). According to Toli (2013) getting loan is the primary benefit that members expect after joining SACCOs. Interest on loan is the source of income for SACCOs. Income for SACCOs is expense for members.

Being access training opportunity increases, the probability of marginal effect of membership participation by 0.6079809, on average. According to (Khumalo, 2014) endeavors to bring to light some of the possible solutions to the current challenges, among which is the need for establishing training institutions on cooperatives, the creation of an enabling environment for a strong cooperative movement to thrive, and provision of adequate funding.

The merginal effect of family size shows that, a one more family size, decreases the probability of marginal effect of SACCOs membership participation by 0.0193079, keeping other variables constant. Rehman*et al.* (2010) found that family size significantly and inversely affecting household saving. The expected effect of family size on rural household saving was negative for households who have large family size. The contrary to this study Solomon (2016) study the size of household was found to have positive and significant association with rural household savings.

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A one extra source of income increases, the probability of marginal effect of SACCOs membership participation increases by 0.1904179, keeping other constant. It is line with the study conducted by (Ayalew,2014) also indicated that occupation is one of the basic factor that affect membership and also members participation. The rural poor who were involved in non agricultural activities are more likely to join a RUSACCO and participate more in borrowing activities than those involved in farming activities. It comprises of the various components of household income including; property income, income from enterprises (farm and off-farm), labour income (salaries and wages), and transfers plus other benefits. (UBOS - UNHS 2009/10).
The marginal effect of distance from market center tells, a one more kilometer distance increases, decreases the probability of marginal effect of membership participation by 0.0795838, keeping other variables constant.

4.2.3 Propessity score Matching

Once a propensity score has been calculated for each observation, one must ensure that there is overlap in the range of propensity scores across treatment and comparison groups (called "common support"). No inferences about treatment effects can be made for a treated individual for whom there is not a comparison individual with a similar propensity score. Common support is subjectively assessed by examining a graph of propensity scores across treatment and comparison groups. Propensity scores only balance measured covariates, and balance in measured covariates does not necessarily indicate balance in unmeasured covariates. If unmeasured covariates are confounders, they can bias treatment effect estimates. This bias may increase as the relationship between measured and unmeasured covariates becomes stronger (Brooks and Ohsfeldt 2013).

Table 4.5 Common region specification

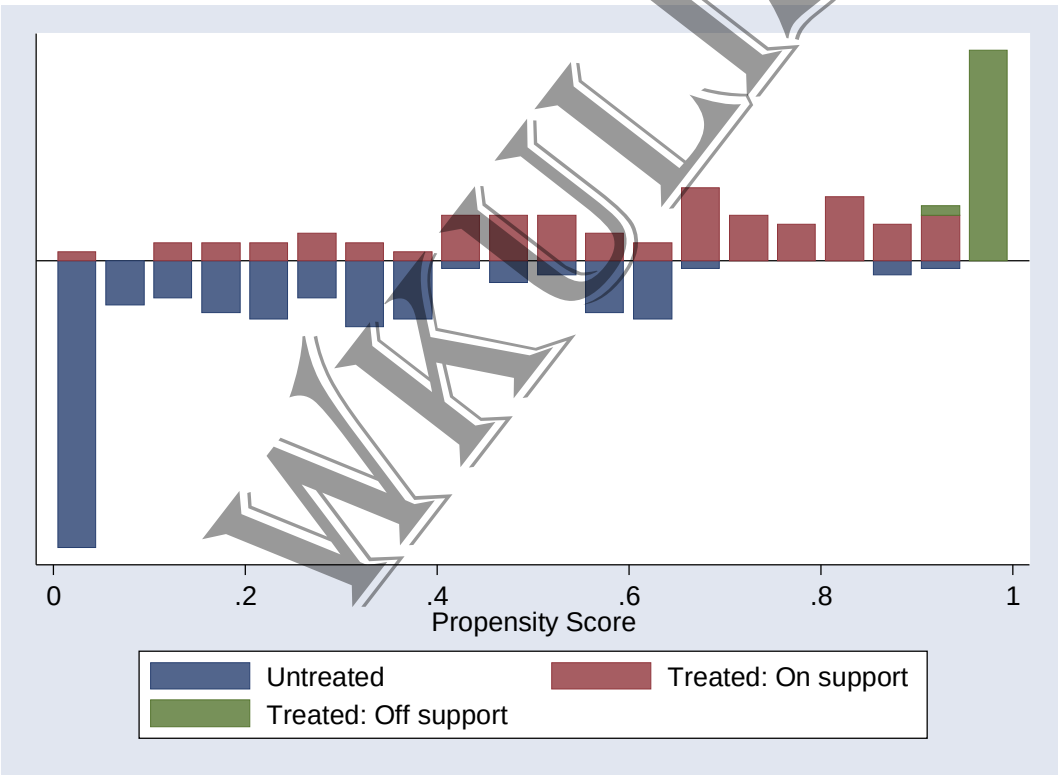
Psmatch2:Treatment assignment	Psmatch2: common support		
	Off Support	On support	Total
Untreated	0	112	112
Treated	24	66	90
Total	24	178	202

Source: Own result (2019)

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Algorithm to estimate the propensity score the treatment is membership, the frequency was 112 (55.45%)for non members and 90(44.55%) members. Description of the estimated propensity score in region of common support was between 0.04812215 and 0.99621133.The final number of blocks ensures that the mean propensity score was 6 and not different for treated and controls in each block. The balancing property is satisfied. Next we need to define the common support region where distributions of the propensity score for treatment and comparison group overlap. For PSM to work, the treatment and comparison groups must be balanced in that similar propensity scores are based on similar observed *X*. The results of the restriction 24 respondents from treated group are discarded. This shows that the study does not have to drop many treated respondents from the sample in computing the impact estimator. Some litratures cosider goodness of common region specification if the 75% sample household heads in overlap region, but the table 4.1 results shows the sample household in the common region above the standard 88.12%

Figure 4.1 Distribution propesty score across treated and untreated group



Source: Own result (2019)

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Besides overlapping, the propensity score should have a similar distribution ("balance") in the treated and comparison groups. A rough estimate of the propensity score's distribution can be obtained by splitting the sample by quintiles of the propensity score. A starting test of balance is to ensure that the mean propensity score is equivalent in the treatment and comparison groups within each of the five quintiles (Imbens 2004). If it is not equivalent, one or more of the quintiles can be split into smaller blocks. If balance within smaller blocks cannot be achieved, the covariates or functional forms of covariates included in the score can be modified. In this it also tasted by ensuring that mean propensity score is equivalent in both treatment and comparision.

4.2.4 TheWeighting Strategies

Different matching estimators had been tested in matching the SACCOs membership participants and non-participant as a control group study area, in the common support region. To choose the best matching estimator for the analysis, different guiding criteria, such as equal means test referred to as the balancing test (Dehejia and Wahba, 2002), low Pseudo R2 and matched sample size were taken into consideration. Matching estimators like nearest neighbor, caliper radius matching and kernel with different band width were tested. Thus, a matching estimator which balances all the explanatory variables that results insignificant mean differences between the two groups, bearing low pseudo R2 value and also results in large matched sample size was taken as the best estimator. Results show that among estimators, caliper radius matching (0.039) was found to be the best estimator for the collected data (Table 4.6).

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Table 4.6 comparision of three matching estimators

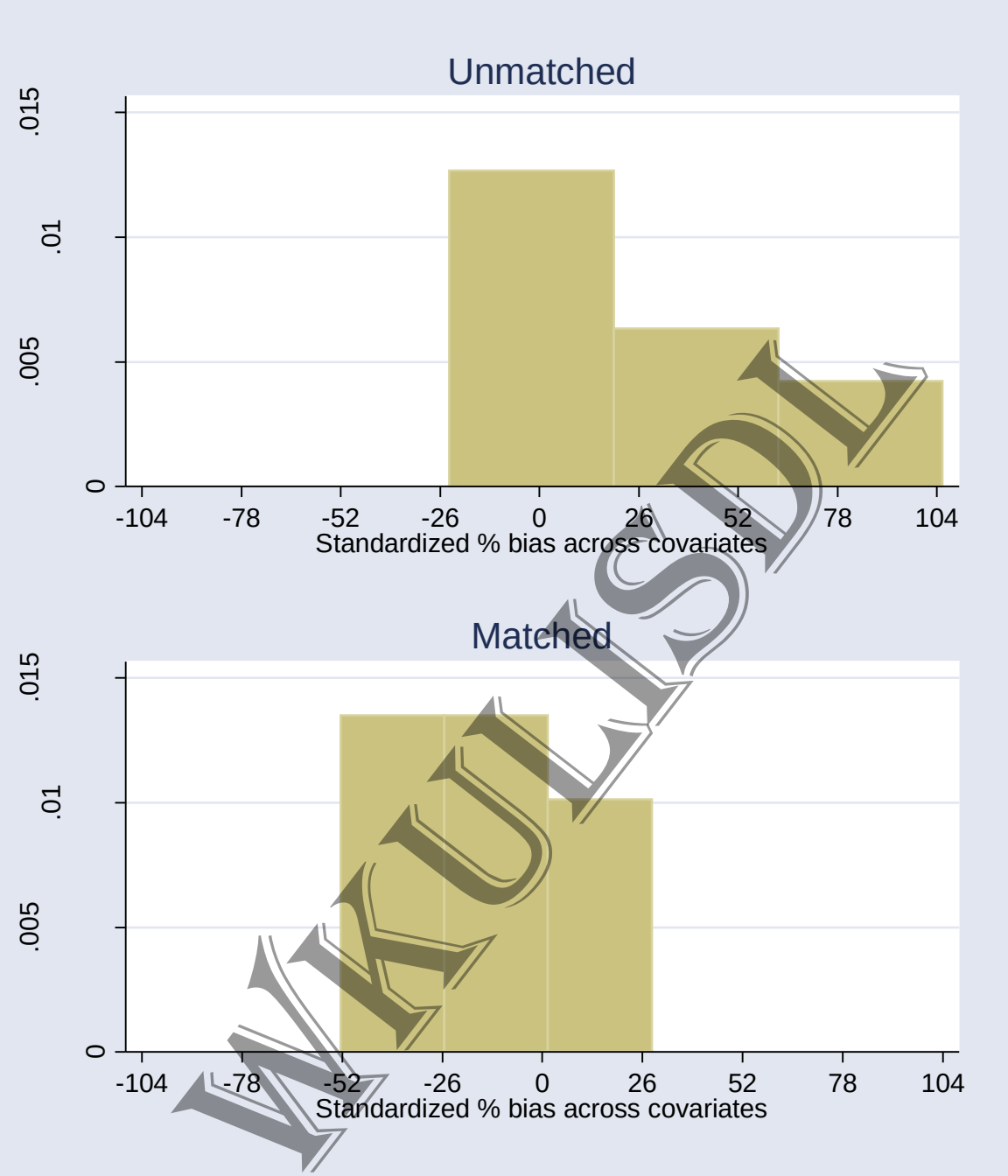
	Performance criteria								
	Asset			Income			Consumption		
Matching estimator	Balancing test*	Pseudo R^2	Matched sample size	Balancing test*	Pseudo R^2	Matched sample size	Balancing	Pseudo R^2	Matched sample size
NN									
Neighbot(1)	21	0.117	178	21	0.117	178	21	0.117	178
Neighbot(2)	10	0.056	178	10	0.056	178	10	0.056	178
Neighbot(3)	9	0.049	178	9	0.049	178	9	0.049	178
Neighbot(4)	12	0.062	178	12	0.062	178	12	0.062	178
Neighbot(5)	13	0.071	178	13	0.071	178	13	0.071	178
Caliper									
0.1	8	0.045	178	0.1	8	0.045	0.1	8	0.045
0.25	7	0.039	178	0.25	7	0.039	0.25	7	0.039
0.5	24	0.130	178	0.5	24	0.130	0.5	24	0.130
Karnel									
Band width 0.1	21	0.117	178	21	0.117	178	21	0.117	178
Band width 0.25	21	0.117	178	21	0.117	178	21	0.117	178
Band width 0.5	21	0.117	178	21	0.117	178	21	0.117	178

Source: Own result (2019)

After the propensity score is balanced within blocks across the treatment and comparison groups, a check for balance of individual covariates acrosstreatment and comparison groupswithinblocks of the propensity score should be performed. This ensures that the propensity score's distribution is similar across groups within each block and that the propensity score is properly specified (Imbens 2004).There is no rule regarding how much imbalance is acceptable in a propensity score. Proposed maximum standardized differences for specific covariates range from 10 to 25 percent (Austin 2009a; Stuart, Lee, and Leacy 2013).

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Figure 4.2 Graff covariates treatmentand control group before and after Matching



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Source: Own result (2019)

4.2.5 Balance of Covariates after Matching by a Propensity Score

After choosing a matching or weighting strategy, it is important to evaluate how well the treatment and comparison groups are balanced in the matched or weighted samples. If the

treatment and comparison groups are poorly balanced, the propensity score needs to be respecified (Ho et al. 2007; Austin 2009a). As with the balancing steps outlined earlier, a common first test is comparing standardized differences. Smaller differences in means and higher order moments are better (Ho et al. 2007), especially in confounders hypothesized to be strongly related to the outcome.

Table 4.7 Covariates before and after on treatment and control group

Variable	unmatched Matched		Mean Treated	Control	%bias	%reduct /bias/	t-test t	p>/t/	V(T)/ V(c)
Age		U	42.656	41.545	10.7		0.75	0.453	0.88
		M	42.697	42.842	-1.4	87.0	-0.08	0.940	0.91
Sex		U	.67778	.58929	18.4		1.29	0.198	
		M	.63636	.57482	12.8	30.4	0.72	0.940	
Edu		U	8.3	7.1161	24.6		1.74	0.084	0.91
		M	7.9242	8.0872	-3.4	86.3	-0.19	0.848	1.00
Mars		U	.92222	.875	15.6		1.09	0.084	0.91
		M	.90909	.88754	7.1	54.4	-0.19	0.848	1.00
MFIdis		U	13.222	14.223	-9.7		-0.68	0.496	0.97
		M	13.621	13.885	-2.5	73.6	-0.14	0.888	0.88
Cred		U	.98889	.61607	105.5		7.10	0.000	
		M	.98485	.93562	13.9	86.8	1.45	0.150	
Interest		U	21.311	19.08	39.6		2.96	0.003	62.96*
		M	20.606	19.439	20.7	47.7	1.24	0.216	13.78*
Train		U	.36667	.01786	89.2		7.29	0.000	
		M	.13636	.08996	13.1	86.7	0.84	0.404	
Fmysize		U	4.2333	4.3393	-4.6		-0.32	0.748	0.80
		M	4.4091	4.563	-6.6	-45.3	-1.03	0.702	0.83
scincome		U	1.4222	1.2589	33.9		2.42	0.016	1.39
		M	1.3636	1.4521	-18.4	45.8	-1.03	0.304	0.93
Mktdis		U	3.2	3.4464	-23.6		-1.66	0.099	0.87
		M	3.2727	3.361	-8.4	64.2	-0.48	0.634	1.00

*****if variance ratio outside[0.66;1.52] fofUand[0.61;1.63] for M

Sample	Ps R2	lR chi2	P>chi2	Meanbias	B	R	%var
unmatched	0.406	112.63	0.000	34.9	171.3*	1.08	14
Matched	0.039	7.05	0.795	9.9	45.9*	1.44	14

*if B>25%, Routside[0.5;2]

Source: Own result (2019)

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4.2.6 Imact Evaluation

4.2.6.1 Asset accumulation of household heads

Table 4.8 ATT impact of SACCOs on Household Asset Accumulation

VariableSample	Treated	Controls	Difference	S.E.	T-stat
AssUnmatched	29472.9889	10631.875	18841.1139	3662.62215	5.14
ATT	27647.3485	12076.8455	15570.503	5084.50265	3.06

Source: Own result (2019)

The net worth of a household depends on the types of assets it owns, the value of those assets and the claims on those assets.World Vision assumes that ASCA not only enable members to increase their income, but also to smooth it by improving their cash-flow management. The importance of increasing household assets and improving their housing situation is reflected in the spending patterns of respondents in Mozambique. These may range from purchasing small household items like plates and buckets to furniture such as chairs and beds to the actual construction of a corrugated sheet roof, a cement floor or an entire house.According to World Vision's Savings Group Project Model, a main indicator for the project goal of increasing participants' capacity to provide well for their children is an "increase in household net assets and cash income". The assumption is that parents who are able to generate a higher income provide better for their children.Studies commonly do not use monetary indicators to measure economic well-being, but rather focus on assets. Available studies on ASCA usually take asset accumulation as a proxy indicator for income, because the latter is difficult to measure and asset accumulation is seen as the higher goal (Matthews et al. 2010, p. 1).SACCOs have notable contribution in terms of providing loans to facilitate growth of business and ultimately enable members to accumulate capital by reinvesting profits(Gloria Gasper,2013).

Table 4.8 above results indicates the aasset accumulation between SACCOs participants and non participants before and after propensity score matching comparatively SACCOs participants prosperous than non participants before and after matching.

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4.2.6.2 Income of House hold heads

Table 4.9 ATT impact of SACCOs on Household Income Source

VariableSample	Treated	Controls	Difference	S.E.	T-stat
IncoUnmatched	41339.0444	39163.7857	2175.25873	3479.51892	0.63
ATT	40879.7121	43761.3376	-2881.62548	4891.37896	-0.59

Source: Econometrics result,2019

Household income is ameasure of the combined incomes of all people sharing a particular household or place of residence. It includes every from of income,salary, wage, retirment income,investment gains, agricultural income and trade. Household income is an important risk measure used by lenders for under writing loans,as well as useful economic indicator of an area's standard living.The study results also shows SACCOs participants have less income than those non participants, most of the time those who have much money always prefer individual and government bank, and Micro finance institution than SACCOs for financial services. This is why SACCOs design for middle and lower income level of household.

4.2.6.3 Consumption of house hold heads

Table 4.10 ATT impact of SACCOs on Household Consumption

VariableSample	Treated	Controls	Difference	S.E.	T-stat
consumpUnmatche	29056.0422	27413.9018	1642.14044	1863.23556	0.88
ATT	28352.1515	30918.6631	-2566.51157	2535.66429	-1.01

Source: Own result (2019)

Access to loans helps to cover irregular expenses like school fees or medical costs and members can accumulate lump sums to purchase assets or improve their housing at the time of share out (WV 2012, p. 3).

The table 4.10 above the difference of ATT adult equivalent consumption before matching in increases and after matching decreases generalize the SACCOs participants were less cost than non Participants for consumption. It is compeletly dis agreement with (kifle T/Mariam,2008) finding is observed that expenses which have increased are for food, health and appliances. Expenses which grew the least are clothing, and celebrations. It seems that certain expenses

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cannot be reduced and their level is stable (fuel and transportation). This analysis confirms that growth is felt more for prime necessity goods than for other items.

Table 4.11:ATT estimation of Membership with treated and control group and bootstrapped standard errors

Matching Methods	**N.treat**	**N.control**	**ATT**	**Std.Err**	**t-value**
Nearest neighbor	90	26	20668.989	4147.289	4.984*
Radius	90	75	18467.079	4102.271	4.502*
Karnel	90	77	19128.513		
Stratification	81	84	19212.712	4287.547	4.481*

Bootstrap statistics — Number of obs = 202; Replications = 100

Variable	Reps	Observed	Bias	Std. Err.	[95% Conf.	Interval]	
_bs_1	100	20687.67	-3857.776	7176.554	6447.826	34927.51	(N)
					1579.746	26499.46	(P)
					10408.98	28681.39	(BC)

Note: N = normal
P = percentile
BC = bias-corrected

Source: Own result (2019)

The goal is to obtain estimates of the propensity score that's tatistically balance the covariates between treated and control populations, rather than one that estimates the true propensity score as accurately as possible. The results indicate that participating inSACCOs membership participation significantly increases household. Asset as shown by a positive estimated coefficient of membership participation use with a t-value less than 1%. Participation in using membership enabled households in the study area to produce more Asset in cash in fixed Asset. ATT estimation of tretedand control group were actual matchs in using Nearest neighbor, radius and stratification, and boots trapped in karnel matching methods.Bootstrapped the way of correct of satandared error for karnel matching when propensity score created in a sepated step from treatment effect estimate and sample is weighted by propensity score.

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4.2.7 Sensitivity Anlysis

Table 4.12 Sensetivity Analysis

Rosenbaum bounds for Ass (N = 202 matched pairs)

Gamma	sig+	sig-	t-hat+	t-hat+	CI+	CI-
1	0	0	12350	12350	11250	13500
1.25	0	0	11590	13052.5	10608	14805.5
1.5	0	0	10984	14005	10124	15858
1.75	0	0	10595	14850	9536	17132.5
2	0	0	10300	15591	9044	18654.5
2.25	1.1e-16	0	9920	16285	8675	20485
2.5	3.2e-15	0	9500	17209.5	8500	22445
2.75	5.4e-14	0	9188	18225	8367	24553
3	5.6e-13	0	8886	19437.5	8270	27050

* gamma -log odds of differential assignment due to unobserved factors

sig+ - upper bound significance level

sig- - lower bound significance level

t-hat+ - upper bound Hodges-Lehmann point estimate

t-hat- - lower bound Hodges-Lehmann point estimate

CI+ - upper bound confidence interval (a= .95)

CI- - lower bound confidence interval (a= .95)

Source: Own result (2019)

The other thing to be considered is that all matching estimators not exactly robust against hidden biases due to selection bias and unobservable characteristics. It is very important for every researcher to test the robustness of significant outcome variables by identifying different assumptions. Under the condition of non-experimental data analysis the problem of unobservable bias would be checked by sensitivity analysis test. The best thing to examine the unmeasured biasness of outcome variables in the selection process is to check the sensitivity of estimated ATT with respect to changes in Conditional Independence Assumption (CIA). As stated by Rosenbaum (2002) the use of Rosenbaum bounding is the best approach to check the sensitivity responses on the statistically significant outcome variables. Rosenbaum bounds provide evidence on the degree to which any significance results show on untested assumptions. So, if the result of test showed sensitive the researcher should have to remind about the solution of this problem and design other estimating strategies.

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CHAPTER FIVE

5. SUMMARY,CONCLUSION AND RECOMMANDATION

5.1 Summary

Saving and credit cooperatives are geographical or organizational based foundation, non-political, non-religious & non-governmental organization formed by low and middle income community to having sustained livelihoods of the current and for the coming generation through contributing capital of SACCOs in the form share capital and members' capital in the form of saving products as well as registration fees as administration finance.

SACCOs are unique cooperative type in members close control when ever they join for their saving schedule at least once in a month, closely supervision financial flow SACCOs, Sence of owmership, benfiting participant only, members own management and leadership, found at nearby community residence, low cost to obtain financial services, have legal ground, have continouty character, encourage members enterprounership capacity, shift management style, engaged in green economy and enviremetal protection, create job opportunity, increase members innovativity, easlyprovision information, encourage (youth, females,disable and HIV careers) societies.

During this study internally and exsternally challenges encounter SACCOs was identified, internal problems includes, work out line of cooperative by law ground and lack of amended by law, lack of internal control directive rule, lack of calculating members saving inerest, down deduction loan interest, shortage of loan fund, irregular saving character of members and lack of saving diversification, less capital growth, lack of own office and equipement and poor appearance for exsting, irregular and less held general assembly, lack of monitoring and evalution among each other, illetracy among committee members and a whole members. Exsternal problems also includes woreda promotion office acadamical and financial gap to give managerial directive, poor techinacal support approach, less coverage and poor quality of audit services, poor immediate descion making on SACCOs challenges, mis intervention of NGO's, Compitators like business oriented MFI and money lenders.

The refelection of capacity gap, language problem and less commitement among recently requerited development agent staffs to techinically support the community found at rural saving and credit cooperatives also the other challenge.

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5.2 Conclusion

The finance collected by SACCOs involve in economic scales, according study result the SACCOs participants had more accumulation of current asset; cash on hand, cash on SACCOs saving account, cash at bank, and fixed asset like cattles, machinarie, vehcles, house and house furniture, stores and stocks than non participants. SACCOs positive and significant on household asset accumulation.

The study results also shows SACCOs participants have less income gain than those non participants, that indicates SACCOs paticipants less off-farm and non farm income generating activities.

SACCOs participants less sound in adult equivalent consumption includes medical and treatment cost, educational cost, food and non food consumption, electricity and water, social service cost, solar purchase comparatively with non participants.

The variables Age of household head, sex of household head, Educational level of respondents, Marital status of household, the distance household from other micro finance institution, access to credit services, interest on loan, access to training opportunity and owning numbers of income source were positive relationship with membership as well as, family size of household head and distance from local market were inversely relationship with membership.

The variables Age of household head, Educational level of respondents, access to credit services, interest on loan, access to training opportunity and owning numbers of income source were economically meaningful and statistically significant at different probability level. And also the distance from local market was economically meaningless and statistically siginificance at 10% probability level.

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5.3 Recommandation

SACCOs should attract members using different promotion mechanisims like preparing annoversy year of foundation with low cost, invite media and radio, participating on annual cooperative exhibition, compiling and publishing scale up experience among role model members, distribution brochure to members and non members to enhance the soundness of SACCOs on household wellbeing.

A neccessarly brainstorm training should be delivered for all types of committee, participants and non participats of SACCOs on different stream, such as on financial literacy campaign, community participatory approaches, book keeping and financial management, governance in cooperative, monitoring and evaluation, enterprinourship, financial product and management, gender and nutrition, HIV mainstreaming to enhance the contribution of each on management capacity, on saving amount and on loan benfit.

SACCOs has shortage of loanable fund, therefore this primary solve by using internal source finance through promotion financial products includes:- upgrade compalsary saving, voluntary saving, child saving and search exsternal fund from institutional saving. (Idir, Church, Meskid, school,Tena kela), leveraging monthly saving (proportion saving and share), revolving fund from government and development sectors.

There was a weak government support for SACCOs, therefore outhor recommend here is institutionally the government support clearly stated on the proclamation help organizing this organization in prepare trining and conduct research that solve SACCOs problem, since they are financial institution they should obtain land of an office construction free from lease,it shall be free from any court fees that is payable in connection with its property for dispute entertained by courts, be exempted from income tax and the government undertake the quality and coverage of auditing services should be applicable.

SACCOs should seriously work to develop members entrepreneurial talent and promoting members to investing on off-farm and non farm rather than invest on fixed asset activities to improve household wellbeing.

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Since family size of households inversely affecting household membership, SACCOs should closely work with Minstry of health found at diffirent levels on household family planning.

Multipurpose cooperative in rural part of the study area should be functional to solve the market problem that discourages household heads participates in SACCOs.

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Appendax

Questionaries

Section I; sample households respondent

My name is Samuel Chimdi, a second year Development Economics student in Wolkite University, Department of Development Economics School of graduate studies; I am undertaking a research on "**Impacts of Saving and credit cooperatives on household's wellbeing in Gurage Zone, SNNP Regional State, Ethiopia"** for partial fulfillment of my master Degree Development Economics. The information gathered in this study will be used only for this academic purpose and it will be kept confidential and won't be used for any other purpose other than this one.

1. Name of respondent ---------- Code/SACCOs----------
2. Address; Zone/Town----------
   Woreda----------
   Kebele----------
   House #----------
   Phone #----------
3. Membership participation in SACCOs Yes ☐ No ☐
4. Age----------
5. Sex; Male ☐ Female ☐
6. Marital status:-show your marital status by a "x " mark

Married	Unmarried	Divorce	widowed	Separated

7. Educational background,

Education level	Make a mark of "X" on your education background	Grade
Illiteracy		
Adult learning		
Primary school		
Secondary school		
Certificate/Diploma		
BA Degree		
MA Degree and above		

8. Family member size

Below 5 years		From 6 to 15 years		From16 to 29 years		From30 to 45 years		Above 46 years	
M	F	M	F	M	F	M	F	M	F

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9. If your response on # 3 is No, what is the reason behind

Reason	Mark by "x"
SACCOs itself close membership door	
I haven't know the existence of SACCOs in kebeles	
My religious doctrine restrict me to participate	
Complexity/bureaucracy within SACCOs governance	
I have manage much number of family members	
Lack of regular base of income source	
I have excess money	
I have alternative financial institution	
SACCOs charge high rate of loan interest	
I am not fulfill membership requirement	
SACCOs never Charge saving interest	
I save in the name of My Wife/Husband	
Due to I am elder	

10. Are you contribute in add new members for SACCOs on behalf of you?
    Yes ☐ No ☐
11. How you become members?

Initiatives for members	**Mark it by a sign of "x"**
Government enforcement	
Self interest	
From median information	
Enforcement relative/friends role model	
Training opportunity	
By unexpected method	
Due to NGO network	
Others	

12. Why you become a members of SACCOs

	To rank usual mark "x" for high 5 and for low target 1				
Target to become members	1	2	3	4	5
To develop own saving culture					
Access for credit					
To increase bargaining power					
For financial security					
To access dividend					
To access saving interest					

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To Access other non-financial services					

13. What is your source of income, Mark by " x" your source of income

Agriculture		Trade	Labor	Employee	Pension	Others
Crop prdn	Non crop prdn					

14. How much percentage you save from your regular income? put mark(x)

Less than10%	From 10%-20%	Above 20%

15. On which type of saving you involve

Types of saving	Mark by "x"
Compulsory saving	
Voluntery saving	
Child saving	
Time bound saving	
Holiday saving	
Retirement saving	
Non interest saving	

16. How many birr you have on your saving account at SACCOs

Title saving	Put total in Ethiopian birr
Compulsory saving	
Non compulsory saving	
Share amount in birr	

17. What is your trust? Are believe on the efficiency of financial management of SACCOs to save your money? "x" Yes ☐ No ☐
18. Are you get money soon as you want, " X" Yes ☐ No ☐
19. If the answer for Q 19 yes, by how many day interval you received

# of days	Put the "x " Mark sign
One to two days	
Two to five days	
One week and above	

20. Have you nearby alternative financial institution for your financial services
    Yes ☐ No ☐
21. Which institution, and which one is your preferable

Proxy institution	Mark your proxy institution	Your preferable
Micro finance		
Individual commercial Bank		
Government Bank		

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22. What types of service you perceive

Types of Services	Rank by your service hierarchy
Saving service	
Loan service	
Insurance service	
Transfer service	

23. In your prospective which financial institution prefer for middle and low income world

Financial institution	Mark by " x"
SACCOs	
Micro finance	
Individual commercial bank	
Government Bank	

24. Have you received any training on behalf of your SACCOs
    a. Yes b. No
25. If response on #26 yes, what types of training
    a. Formal training b. informal training

Credit profile

26. Did you borrow money from your SACCOs
    Yes ☐ No ☐
27. If answer for #27 yes, How Much you borrow recently?

Amount of borrowed in birr	Mark by "x"
Below 1000.xx	
1000 to 3000	
3000 to 5000	
Above 50000	

28. Totally how many times you borrow including #29 chose and circle it
    a. First time b. Twice c. Three time d Four times
29. For what purpose you borrow

Use loan for	Put mark "x" in front of your plan
On farm agriculture	
Off farm agriculture	
Non farming	
Trade	
Construction	
To cover educational cost	
To cover medical cost	
To charge idir and equib cost	
To consumption	

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30. What is the result after use loan

After use loan	Per day in birr	Per month in birr	Per year In birr.
1. Housing;			
Newly construct			
Maintenance			
Charge for land lease rent			
Purchase residence house			
2. HHs equipment and properties (sofa, refrigetor, television and others)			
3. Medical and treatment purchase			
4. Education :-			
Improve self educational level			
Cover child educational cost			
5. Improve hh income			
Crop production/on farm			
Non-farm/fattening and production			
Off –farm(trade, Metal work, woodwork, Vehicle purchase and others			
6. Consumption:			
Holiday			
Water			
Electricity			
Nutrition			
Charge for ekub and idir			
7. Environment :-			
Purchase solar			
Energy save stove			
Planting environment protection seed like, Avocado &Mango plants			
8. Charge “ equb and idir”			

31. Have you received saving interest? Yes ☐ No ☐

32. How much percentage

Percentage	Mark by “x”
Below 10%	
Between 10%-20%	
Above 20%	

33. What you think about this interest

Affordable ☐ expensive ☐ cheap ☐

34. Have you received dividend from SACCOs ? a. Yes b. No

35. What is your feeling about dividend? a. attractive b. good c. no sense

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Section II: For SACCOs institution

My name is Samuel Chimdi, a second year Development Economics student in Wolkite University, Department of Development Economics school of graduate studies, I am undertaking a research on "**Impacts of Saving and credit cooperatives on households wellbeing in Gurage Zone, SNNP Regional State, Ethiopia"** for partial fulfillment of my master Degree Development Economics. The information gathered in this study will be used only for this academic purpose and it will be kept confidential and won't be used for any other purpose other than this one.

1. Name of cooperative----------
2. Lenience Number----------
3. Year of establishment----------
4. How many members currently have M---------F----------

Governance

5. Have SACCOs amended by law background,----------
6. The recently amended year ----------
7. If the answer of 5# is no, why----------

   ---
8. Is the all Management committee functional----------

   ---
9. Have they schedule to monitor and evaluation SACCOs progress ----------
   ---
   ---
10. Are there other types of committee? Yes ☐ No ☐
11. If yes for #10 Which type of committee

Type of committee	**Functional**	**Non functional**
Control committee		
Loan committee		
Promotion committee		

12. How much percentage of female participation in management bodies

Type of committee	Put in percentage
Management	
Control committee	
Loan committee	

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13. Is SACCOs encourage gender equality, put in number

Sex	**In Management committee**	**In members**
Male		
Female		

14. Is your SACCOs Create job opportunity Yes No

15. If answer for #16 yes

No	Male	Female	Position	Salary

16. What is SACCOs involvement on increasing government revenue

Source of revenue	In birr		
	Current yr	Previous yr	Total in birr
From members dividend			
Employee salary tax			
Others			

17. What is the position of government support for this SACCOs

a. Office building Land support ----------karemetre
b. Office Equipment and furniture
   Safe box in Number ----------
   Chair in number----------
   Table in number----------
   Others in numbers ----------
c. Provide formal Training
   On what area----------
   For How many days----------
   How many individuals M---------- F----------T---------

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Section III: Woreda cooperative promotion

My name is Samuel Chimdi, a second year Development Economics student in Wolkite University, Department of Development of Economics school of graduate studies, I am undertaking a research on "**Impacts of Saving and credit cooperatives on households wellbeing in Gurage Zone, SNNP Regional State, Ethiopia"** for partial fulfillment of my master Degree Development Economics. The information gathered in this study will be used only for this academic purpose and it will be kept confidential and won't be used for any other purpose other than this one.

Date ----------
Name of organization----------
Responsibility of respondent ----------

1. Is there the government structure in your organization invite SACCO expert alone? Mark by circling your answer
   A. Yes B. No
2. If answer for # 1 is yes, How many

Numbers of position	**Mark by " x"**
Below 2	
Between 2 to 4	
Above 4	

3. If response for #1 No, how do you support such institution ----------
   ----
   ----
4. How long related with SACCOs institution overall performance, Mark answer by circling
   a. Below 2yrs b. between 2-5yrs C. above 5yrs
5. Do the development of financial cooperatives improve access finance for middle and low income individuals
   a. Yes b. No
6. How it measures mark categories

Excellent	v.good	Good	Fair

7. Is your give serious support to those institutions?
   a. Yes b. No
8. If response for #7 yes, what type of supports and how much in a year ?

Support type	Mark by "x"	How much
Training service		
Promotion service		
Auditing service		
Legal service		
Inspection service		

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9. Is there your organization intervention to enforce amend their by law
   a. Yes b. No
10. By what interval

Interval	Mark it by “x”
Every year	
Every 2 years	
Above 2yrs and irregular	

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