Determinants of Small Holder Farmers Saving In Limu Seka Woreda, South-West Oromia, Ethiopia

A Thesis Submitted to the School of Graduate Studies of Jimma University in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Science in Development Economics (MSc).

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CERTIFICATE

This is to certify that the thesis entitles “Determinants of small holder farmers saving in limu seka woreda, south west Oromia, Ethiopia”, submitted to Jimma University for the award of the Degree of Master of Development economics (MSc) and is a record of bona fide research work carried out by Mr. Dilargachew Tsegaye under our guidance and supervision

Therefore, we hereby declare that no part of this thesis has been submitted to any other university or institutions for the award of any degree or diploma.

Main Adviser’s Name	Date	Signature
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Co-Advisor’s Name	Date	Signature
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DECLARATION

I hereby declare that this thesis entitled "Determinants of small holder farmers saving in limu seka woreda, south west Oromia, Ethiopia*",* has been carried out by me under the guidance and supervision of Dr. Leta Sera and Mr. Mehammedsali Ali.

The thesis is original and has not been submitted for the award of any degree or diploma to any university or institutions.

Researcher's Name	Date	Signature
_____	_____	_____

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Contents

List of Tables

List of Figures

ACRONYMS AND ABBREVIATIONS

GDP =Gross Domestic Product

CBO= Cooperative Bank of Oromia

NBE= National Bank of Ethiopia

CBE= Commercial Bank of Ethiopia

CSA=Central Statistics Agency

WB= World Bank

PIH=Permanent Income Hypothesis

LCH= Life Cycle Hypothesis

EFY=Ethiopian Fiscal Year

USD= United State Dollar

GTP = Growth Transformational Plan

EPRDF= Ethiopian People Revolutionary Democratic Front

OCSSCO= Oromia Credit and Saving Share Company

SPSS= Statistical Package for Social Science

OLS =Ordinary Least Square

NGO =Non-Governmental Organization

IJAR = International Journal Review

EATA= Ethiopian Agricultural transformational Agency

WBDRA = Woreda Basic Data Registration Agency

WANRDO = Woreda Agricultural and Natural Resource Development Office.

ABSTRACT

The main objective of the study was to identifying the determinants of smallholder farmers saving at Jima zone Limu Seka Woreda. Primary data source was used for the study. Data was collected from 394 households from five kebeles through probabilities and non probabilities sampling technique. Both descriptive and econometric model of binary logit was used for data analysis. The result obtained from analyses was seven variables age, educational level, family size, land size; farmers annul income, access to credit and production type of farmers statistically significant to affect saving decision of farmers. Whereas sex, marital status, distance to financial institution and perception to interest rate were statistically insignificant. The study recommended concerned body should give attention for the educational sector and farmers' extension training programs, better to try to improve income of small holder farmers by diversifying income sources, family size must be managed, expand credit service to small holder farmers, proper land management and encourage coffee farming production were enables small holder farmers to saving.

Keywords: *small holder farmers saving, binary logit model, odd ratio, limu seka Woreda.*

CHAPTER ONE
INTRODUCTION

1.1 BACKGROUND OF STUDY

Saving is the part of income not spent on current expenditures. Because peoples do not know what will happen in the future, money should be saved to pay for different unpredicted events of expenditures. Mobilization of saving is also critical for household welfare in that it helps households' smoothen their consumption and finance productive investments in human and physical capital (Karlan *et al.*, 2013). Starting from classical time's theory, saving has been taken as one of the determinants of growth of investment and economy. Different classical economists like Smith & Ricardo, (1778) argues that saving is one of the important determinant variables of economic growth. Keynes, (1936) identified absolute disposal income as the important determinants of saving. Other theories after Keynes like Fried man's, (1957) permanent income hypothesis (PIH) and Modiligliani's, (1963) Life Cycle Hypothesis (LCH) explains the determinants of savings point out that other variables also affect the saving of the households.

Different Empirical studies like Odhiambo, (2009) show that saving leads to more investment and higher economic growth. Tsega and Yemane, (2014) the countries those having saving allocation problems were unable to create useful investments and development. Most previous study like Alemayehu, and Haile, (2007), Tsega and Yemane, (2014) was conducted in sub African country particularly in Ethiopia at macro level. However, Tsega and Yemane, (2007) indicate that a large body of empirical macroeconomic work ignores consumer heterogeneity by assuming a representative household agent. According to Touhami et al., (2009) these macroeconomic studies cannot deal with "real-world" features that reflect the diversity of saving behavior.

As indicated by Deaton, (2005) and Rogg, (2006), as cited in Tsega and Yemane, (2014) the problem facing poor countries including Ethiopia is the existence of a significant gap between is domestic saving and investment. Because of this gap, these countries faced challenges to investing in domestic savings to achieve needed growth. As indicated from WB, (2019)

reports and CSA, (2017/18) the economic performance of most sub-Saharan African countries were still poor and undeveloped, and low income.

According to the annual report of NBE, (2019) the Ethiopian government was planned high growth rate on its growth and transformation plan GTPII.The Ethiopian economy had exhibited a 9.1% average annual growth during 2015-2019.To achieve and sustain such high growth goals, the country needs a significant amount of capital formation. With additional external financing constraints, the most important investments were expected to finance from domestic saving mobilization. Saving is the only source of raising the wealth and assets of the peoples. The strong and continuous sustained economic growth was recorded over the last 15 years has led to improvements in income inequality and poverty reduction. Accordingly, based on NBE (2018/19) reports per capita income has continuously increased and reached USD 985.Poverty has declined to 22% in 2018/19 from 38.7% in 2004/5.Positive and sustainable macro-economic performance depends on investment and it's financing. Saving is primarily used to finance investment and to pay the unexpected expenditure. Domestic requirement investment is financed by either domestic resource mobilization or foreign donation increased to 35.2%, while that of domestic savings stood at 22.3 %.

The study area was Jimma zone Limu Seka woreda that one of the Woreda has the potential of farming of coffee and other mixed agricultural systems. The farmers who live in this district were influenced by different conditions of saving determinants. According to the Woreda Coffee, Agriculture and Natural Resource Conservation Office (2020) Limu Seka Woreda is also one of the fast-growing farming activities. But the determinants of saving of smallholders, particularly at smallholder household farmer's level, have not been studied in a well-organized manner. So that, this research was identified the main determinants of smallholder farmer's household saving and the practice of farmers of saving in L/Seka Woreda and tried to provided feasible solution for the identified problems.

1.2 STATEMENT OF THE PROBLEM

The main purpose of the study was is to explore the determinants of saving and the saving practice of farmers in Jima zone Limu seka woreda. As we know that increasing mobilization of small holder farmers saving can facilitate significant amount of resources for investments that could promote economic growth. Therefore ,knowing why and how households save, and what determines their saving and their saving practices can helps to identify appropriate solution that increase the amount of resources available for development and to increase income of farmers.

According to Odhiambo (2009) and Mariam et al (2014) indicate that making saving as the prime source of raising wealth and assets for the society. It is evident that saving mobilization and development of saving habits of a given society will have an effect on capital accumulation and thus on economic development of a country in general and on the financial wellbeing of the individuals in particular. However, the relatively low GDP per capital limits the potential for domestic savings in developing countries such as Ethiopia which would be encouraged by offering attractive interest rate for savers. Also as indicated by Asare *et al.*, (2018) Savings have a positive impact on economic growth at the macroeconomic level. But, the micro level analysis of households "savings determinants is limited, especially in sub Saharan African economies" The number of extension contacts and access to market information has significant positive effects on the likelihood and house hold would save.

According to Tadese, (2011) as cited in Haile, (2012), Ethiopian economy faces financial gap where the saving- investment gap has been widening from an average of 1.1% of GDP during the Hilesilase (1960-74), to 6% of the GDP during the Derg period (1974-91) and further to 11.7% of the GDP in the EPRDF and as indicated by NBE, (2019) annual report 9.1% average annual growth during 2015-2019. So, saving is more of meat for meeting contingencies but sometimes it also acts as a form of investment for households.

Tsegabrihan, (2009) In Ethiopia majority of population is living in rural woreda where there is luck of access to formal financial in situations. Lidi, (2017b)"the financial sector is not effective to reach the rural societies at the same time with lower transaction cost". The households decision to save and level of saving is determined the option for the use informal institutions, low annual income and distance of the institutions away from their residence

Most empirical studies like Tsega and Yemane, (2014), Zone and Borko, (2018) and Gebre, (2018) was explained that determinant of house hold saving as general household's level and at macro level. However saving determinants as general house hold level and macro level may not represent small holder's farmer's level Because of socio economic difference between them. At study woreda, the smallholder farmers were known by mostly producing coffee, cereal crop and mixed agricultural system. The agricultural product of the farmers especially coffee and other Cush crop produced by farmers relatively has more value compare to other. Even though they participate, suchlike farming system for many years; most of farmer's living standard and life style was didn't change.

Empirical studies those mentioned at above conducted determinant of house hold saving as general household's level but saving determinants as general house hold level may not represent small holder's farmer's level because of socio economic difference. Therefore this research was filled the gap of empirical study. The other is even no one can know with small house holder farmers save or not at study woreda. In general depends on the above explained problems or the research gaps the study was different from other previous studies

1.3 RESEARCH QUESTION

1. What are the socio economic determinants of smallholder farmer's savings decision at the study area?
2. What is the practice of smallholder farmer's savings at the study woreda?

1.4 OBJECTIVES

1.4.1 GENERAL OBJECTIVES

The general objective of the study was to explore the main Determinants of small holder farmer's saving and to identify the habit/practice of small holder farmers in case of Jima Zone Limu Seka Woreda.

1.4.1.1 SPECIFIC OBJECTIVES

1. To investigate the socio economic Determinants of small holder farmers saving savings decision in the study woreda
2. To assess the small holder farmers saving practice in the study area.

1.5 SIGNIFICANCE OF THE STUDY

This study is importance for different benefit. First as mentioned on the statement of the problem, research related to this title has not been conducted in the study woreda (Limu Seka) so, the researcher believes that the finding of this thesis may contribute to make aware the stock holders regarding the main determinants of small holders farmers saving. Second the study provide serve as a reference/bench mark to subsequent research works in the woreda regarding to determinants of small holder farmers. Finally the finding of the study contributed good understanding to about the general activity of smallholder farmers saving for different stock holders like government, financial institution and NGO's in the context of Limu Seka Woreda.

1.6 SCOPE AND DILIMITATION

The study was focused on determinants of smallholder farmers saving in Limu Seka woreda. The limitation of the study was in some extent inadequate and inaccurate data because of the community of the study woreda most of them were not have trend to answer the questioners used by researcher limit the finding of the study. To overcome these problem, enumerators were assigned to the selected kebeles of woreda they were more familiar with the community.

1.7 ORGANIZATION OF THE STUDY

The study was organized into five chapters. Chapter one is deals with about back ground of the study, statement of the problem, objectives of the study, significances of the study and scope of the study. The second chapter contains theoretical and empirical review of related Literatures including conceptual framework. Research design, type of data, Methods of sampling and method of data analysis were included under chapter three. Chapter four is deals with result and discussions. Chapter five deals with conclusions and recommendations and at the end references and appendices attached.

CHAPTER TWO

2. REVIEW OF LITERATURE

2.1 THEORETICAL REVIEW

2.1.1DEFINITION AND THEORETICAL FRAME WORK

Saving across scholars is different, even if, it holds similar concepts. According to Amu, M.E.K, and Amu, E. K, (2012) saving is simply means of putting something aside for future use or what would be considered as deferred expenditure. Similarly, Teshome *et al.*, (2013) and Jamal, (2013) they .have been defined household saving as it is part of current income which is not expensed in the current period (or foregone consumption) after direct taxes paid from the earned income.

Saving refers to the act of refraining from consumption and deferring it to a future period. Savings requires accumulation of anything of lasting value is also savings. Formally, it is defined as the excess of income over expenditure on consumption in a period (Keynes, 1936), or Warneryd, *et al., (*1999) alternatively, the difference in net worth at the end of a period and net worth at the beginning of the period. The former definition is a *flow* measure and therefore is separate from households' existing total savings, while the latter definition reflects a measure of stock equivalent to net wealth for a certain period, which requires detailed information on assets and liabilities. In Browning, Lorshin and Lusardi's (1996) commendable review on the theories and facts of household saving, the following equations were used to define savings. The budget condition for financial assets is given as

$$A_{t+1} = (1 + r) A_t + Y_t - C_t \quad \text{---------- (1)}$$

Where *A, r, Y* and C were financial assets, the real interest rate, earnings, and consumption, respectively. Saving is thus equivalent to $(A_{t+1} - A_t)$, which reflects the second saving definition, the first difference of assets between two periods. Meanwhile, based on the first definition (excess of income over consumption), saving is equivalently given as ($rA_t + Y_t - C_t$ *where* $(rA_t + Y_t)$ equals the earned plus capital income.

2.1.2 LIFE CYCLE HYPOTHESIS THEORY

The life cycle hypothesis is an economic theory that describes the spending and saving habits of people over the course of a lifetime. Modigliani and Brumberg, (1957) it is one of the most important economic theories regarding saving is the life cycle hypothesis theory proposed by them. The essential idea of the life-cycle hypothesis is that individuals (or households) try to keep their expenditures constant over the life-cycle. At times in life when income is lower than expected average life-cycle earnings, money would be borrowed; when income is higher than expected, the surplus would be saved. By doing this, consumption is smoothed at a certain level.

The life-cycle hypothesis is essential part of economists' thinking. With population growth, there were more young people than old, more people were saving than no saving, so that the total no saving of the old would be less than the total saving of the young, and there would be net positive saving. If incomes were growing, the young would be saving on a larger scale than the old were no saving so that economic growth, like population growth, causes positive saving, and the faster the growth, the higher the saving rate.

The most fundamental challenge to the life-cycle model has been directed at its basic underlying assumption, that people make rational, consistent, inter-temporal plans, that they act as if they were maximizing a utility function defined over the periods of life, according to Fisher, (1975) the received theory of consumer choice over time Economists behavioral assumptions about consumer choice have long been challenged by psychologists and others but, until recently, these critiques have not had much effect on mainstream economic analysis.

2.1.3 FRIEDMAN THEORY OF PERMANENT INCOME

Friedman's, (1957) permanent income hypothesis is an extension of the life cycle hypothesis. It is also based on the perception of one's present and future income. When income is higher than the permanent income somebody considers to be his or her comfortable (and realistic) level of income, money is saved for a period in life where income might be below this personal permanent income level. According to Friedman, Ottoo, *et al., (2009*) cited by Nega .M (2016), people also save because of a bequest motive, the motivation for saving to leave an inheritance.

According to Odhiambo, (2008) the central idea of the permanent-income hypothesis, proposed by Milton Friedman,(1957) is simple: people base consumption on what they consider

to be their normal income. The permanent income hypothesis predicts that an unanticipated increase in the future income relative to the current income reduces current savings in contrast to the Keynesian point of View. Most of the empirical studies (Hall, 1978 and Flavin, 1981) found that consumption exhibits "excess sensitivity" to a change in income.

Friedman, (1957) proposed the namely permanent income and transitory income. Permanent income is the long-term expectation over the planning period and steady rate of consumption maintained over a lifetime given the present level of wealth, whilst transitory income constitutes the difference between actual and permanent income.

2.1.4 KEYNES ABSOLUTE INCOME HYPOTHESIS

Keynes (1936) introduced the notion of marginal propensity to save (Keynes' Absolute Income Hypothesis). The theory examines the relationship between income and consumption, and asserts that the consumption level of a household depends on its absolute level (current level) of income. As income rises, the theory asserts, consumption will also rise but not necessarily at the same rate. The idea is that saving is only possible, if someone has more than enough to meet the basic needs. This means that Ottoo, *et al*., (2009) "someone can only save what is left over once essentials have been paid for him".

2.1.5 RELATIVE INCOME HYPOTHESIS

It was developed by James Duesenberry and it states that individual's attitude to consumption and saving is dictated more by his income in relation to others than by abstract standard of living. So an individual is less concerned with absolute level of consumption than by relative levels. Akpan, (2011) the percentage of income consumed by an individual depends on his percentile position within the income distribution. Secondly it hypothesizes that the present consumption is not influenced merely by present levels of absolute and relative income, but also by levels of consumption attained in previous period. It is difficult for a family to reduce a level of consumption once attained. Wagner, *et al*., (2005) the aggregate ratio of consumption to income is assumed to depend on the level of present income relative to past peak income.

2.1.6 KATONA'S THEORY OF SAVINGS

Otto, et al., (2009) noted that Katona's theory of saving is based on the assumption that saving/consumption is dependent on the ability to save/ consume and the willingness to save/ consume. The theory stressed the importance of income but thought of the absolute income hypothesis as being too simplistic. Simply having money left over after expenditures on necessities does not mean that this money has been saved or would be saved. To predict saving, the willingness to save needs to be considered as well. In other words, those who were able to save still need to choose to do so, that is, they have to make a decision that requires some degree of willpower. Consumer expectations and consumer sentiment will impact on saving decisions as well as pessimism and optimism with regard to a general and one's personal evaluation of the economic situation. While people save for different reasons, Katona (1975) assumes that someone's personal evaluation of the economic situation will influence contractual as well as discretionary saving decisions.

2.2 EMPIRICAL LITERATURE REVIEW

2.2.1 DETERMINANTS OF SMALL HOLDER FRAMERS SAVING

Determinants of household savings Small holder farmers saving is largely influenced by several variables like the perception of saving of those who save, their ability, willingness, motivation, for saving and the opportunity to save .this deliberate decision on the part of the small holder households to save in order to meet future needs depends on a number of factors. The factors to save in order to meet future needs depends on a number of factors that affect the ability to save, the will to save and the opportunity to save.

2.2.2 DEMOGRAPHIC DETERMINANT AND CHARACTERISTICS

2.2.2.1 GENDER

Denizer, &Holger, (2000) in the analysis of the household savings in the Transition using data from Bulgaria, Hungary, and Poland noted that households headed by women exhibit significantly higher savings rates than that of men in these three countries. Dupas, Robinson and Subhashree, (2013) worked in collaboration with the Bumala village bank in Kenya to randomly provide small business owners with access to savings accounts. Four to six months after account opening; women in the treatment group had 45 percent higher daily investment in their businesses than women in the comparison group. Thus women have the capacity to save but were faced with a number of barriers noted that combination of lower earnings, lower savings, longer life spans, and higher risk aversion pose greater challenge for financial educators and policy makers.

The findings by Fisher, (2010) also showed that women were less likely than men to have saved over the previous year, while the proportion of the male and female samples reporting to save regularly was similar. Buvinic, *et al*., (1997) Women and men have been shown repeatedly in the literature to differ in terms of risk tolerance, which has then been shown to affect women's financial decisions and behaviors. The results show that risk tolerance also affects men and women in terms of whether they engage in saving. Interestingly, women reporting low risk tolerance were significantly less likely to save over the short term as well as to be regular savers, while this effect does not apply to the sample of men. On the other hand, some researchers have concluded that no gender difference in savings and investment behavior exists. For example, Zhong& Xiao, (1995) found no gender difference in the dollar holdings of stocks. Fasoranti and Giovannin, (1985) concluded that the determinants of retirement planning knowledge were similar for men and women, and Masters & Meier, (1988) found no difference in the risk taking propensity of male and female entrepreneurs.

Previous study by Souksavang, (2013) indicates that female headed households seemed to spend much of their money on cosmetics, jewelers, clothes and crockery, thus they cannot save more. Similarly (Ahmad and Asghar 2004, Gedela 2012, Kostakis 2012, Gebru, 2018) indicated that the male headed household saved more than female headed households.

2.2.2.2. AGE

Beckmanrm et al (2013) using a double hurdle model on secondary data to identify household Saving determinants suggests that age derives the propensity to save and reveal the hump shaped. Relationship between age and saving is found to be as predicted by the life cycle hypothesis true for the saving practice of Central, Eastern and Southern Europe. According to Surya (2012) age of the head of the household is statistically significant at 1 percent level of chi-square value with expected negative sign. As the age of the head of the households 'increases then the savings accordingly decreases in the study woreda, An Empirical analysis of Visakhapatnam District. In constructs to him Tarekegn and Geremew (2015), variables such as age of the household have no significant statistical effect on the decision to save or not to save. Moreover, Gedela (2012) in his study on determinants of saving behavior in rural households found a positive relationship between age of the household head and savings where increase in age resulted in increase in saving but as the household head becomes old the savings start declining.

2.2.2.3 DEPENDENCY RATIO

The dependency ratio is another important factor influencing saving in many empirical studies. Quartey and Blankson (2008) and Hussein, (2007), the elderly and young were expected to consume out of post saving while those within the working age were expected to accumulate saving. Moreover, Schultz (2005) analyzed the demographic determinants of saving in a group of Asian countries by using econometric methods and found that dependence ratio has a significant negative effect on saving across counties. The finding by Halefom (2015) revealed some differences in average saving across different age groups. The mean saving of middle age, early and old age household heads is about Birr 360.6, 206.2 and 244.6 per month respectively.

A study conducted by Swasdpeera&Pandey, (2012) in Nakuru District revealed that an increase in dependency ratio is bound to cause a decline in savings while a decline in dependency ratio will result in an increase in saving. The findings of the study were that predictions from the Life cycle hypothesis indicate that growth in private savings rate in associated with drop in dependency ratio. This suggested that a reduction in the number of children relative to the working age population alleviated budget constraints thereby boosting savings rates. The neoclassical theories of saving note that households with more children at

home save less until the children leave home which in turn raises the capita income of the household, thus a high dependency ratio reduces savings.

A study by Gedela, (2012) on Visakhapatnam households indicates a strong negative influence as a result of high dependency ratio where an increase in number of dependents drastically reduce savings rate. Notes a high percentage of older people in a population decrease the saving rate because they were not part of the active labor force and were expected to finance their consumption out of their past savings. On the other hand they still observe that higher young dependency ratio may have dual effect on savings and consumption. Matur, Sabuncu, &Bahçeci, (2012) Consumption of families for child were May increase and force families to save for future expenses for their children such as their education

2.2.2.4 FAMILY SIZE

The higher the family size, the higher the consumption pattern and all things being equal, the lower the excess money left for saving. According to Elfindri, (1990) Conducted a study to examine the demographic impact of family size on household Savings in some part of central Sumatra in Indonesia, Using data from the 1987 Indonesian census, the results from the regression analysis show that the size of the Household and the number of children at school going age is negatively affect household Saving.

In contrast to the findings of Browning and Lusardi, (1996) who analyzed micro Theories and data on household savings found that household size can have a positive Effect on savings according to economies of scale The difference in the findings of Elfindri, (1990) and Browning and Lusardi, (1996) stems from the fact that Elfindri looked at household size in general whiles Browning and Lusardi extended their study to include composition. Thus, by composition, a household with many of its members working while have a positive effect on savings whiles a Household with many of its members being dependents will have a negative effect on savings. But taking the household size as a whole, there is likely to be a negative relationship with savings. Furthermore, Lidi, (2017b)using a double hurdle model when to identify farm household Saving determinants in Ethiopia they were suggest that Family size has statistically significant but negative effect on both the decision to save and amount of saving. This is because as family size increases, households were expected to allocate more of their income on consumption expenditure and thus there would be no income left for saving. As a result the household's decision to save and his level of saving may decrease

2.2.2.5 EDUCATION

According to Altonji, et al., (1997) education was also observed that in 1991/2, higher levels of education significantly increased the probability of savings but this couldn't hold for 1998/9. Akpan, et al., (2011) thus 'the probability of savings increases as one attains tertiary education but the marginal effect was not significant'. Schooling may enable people to appreciate the finer things in life or to be more efficient in making consumption decisions (Adam, 1978), Alessie, et al., (1999) has pointed out that high education may imply lower consumption, quite apart from the income correlation, if better educated people were more farsighted and therefore have stronger retirement motives education level of the household head influences amount of saving. For instance, Girma*et al.*, (2013) applied single equation Tobit

model on household survey data to analyses determinants of household saving in Ethiopia. Their finding indicated that education level of household head affected household saving positively.

2.2.3 ECONOMIC DETERMINANTS OF SMALL HOLDER FRAMERS SAVING

2.2.3.1 INCOME

Income is the basic determinants in most the study woreda of saving. Different output of studies by using different methods have been conducted in different parts of the world have found positive relation between income and savings. Some scholars also have put certain theories regarding income and saving relation. Keynes, (1936) identified absolute income as the main determents of saving and stressed that saving would increase with absolute income other factors being constant hypothesis. And a positive relation between saving and income also identified with the permanent income hypothesis by Friedman,(1957) and the life cycle hypothesis by Ando and Modigliani, (1963).

Studies conducted by other scholars and researchers have also found similar results. For instance, a positive relationship between saving rate and income in the developing country, at least within a certain ranges of income levels, has been obtained in past empirical studies rising households save data(Bhalla 1980) for India, cross country national income accounts(Moore 1981) for Asian countries.

Evidence from Sub-Saharan Africa and other developing countries, albeit mostly from middle- to upper income households, suggests that income positively influences saving and in ways consistent with Keynesian Savings function and the Friedman Permanent Income. Studies conducted In Kenya by Burney and Khan, (1992) household income was found to be a statistically significant predictor of savings among rural farmers, entrepreneurs, and teachers'. A similar result was found by Kiiza& Pederson, (2001). in Uganda where higher permanent and transitory incomes significantly increased the level of net deposits among households that reported owning bank deposit accounts and Paulos Z.(2018) in Ethiopia also was found that the higher annual income house hold is significantly increased the level house hold of saving

2.2.3.2 ACCESS OF FINANCIAL INSTITUTION

Besides, few studies assess the determinants of saving at the individual level generally Due to the lack of data. Using recent econometric techniques, Carpenter and Jensen (2002) and Kulikov, *et al.* (2007) identify how household characteristics affect saving Behavior, in Pakistan and Estonia respectively. Carpenter and Jensen, (2002) focus on the role of institutions which collect saving and stress on the role of formal (banks) and informal institutions (savings committees). They found that "increased income leads to greater desire to participate in some form of savings institutions but as income increases more individuals shift to the formal sector". They also found evidence that the urban rural differences in bank use is negligible which suggests that formal finance is not primarily restricted to urban households in Pakistan. As opposed to Carpenter and Jensen, (2002) who focus on the savings supply side, where as Kulikov*et al.*,**(**2007**)** analyze the saving determinants on the demand side. Making a distinction between regular and temporary household income allows the authors to put forward the role of income Variability and the different forms of household assets (financial and non-financial) in a transition economy (Estonia). Their analysis is based on data from household budget surveys. As in many empirical studies, they found that the saving rates depend more on the transitory income than regular income.

Ndikumana, (19990) the structure, nature and relative size of financial instruments and financial institution in a country is an important factor in of enhancing the mobilization of saving and channeling of saving into productive investment. The result further added that households mainly use the informal saving institutions as the result of which their savings is hardly traced in the national accounting system. Nayak, (2013) financial institutions with easy access, low transaction costs, higher real returns on savings and convenient withdrawal of savings provided incentives for those households who hold financial savings to channel their savings into the formal institutions. The significance of deposit service to the poor is as important as loans services if they were given due attention and tailored to the saving patterns of the poor. As noted by Wolde M, (2010), access to deposit services in financial institutions mostly enables the poor to efficiently manage their financial resources.

2.2.3.3 INTEREST RATE

As described in Ejigu, (2020) when identifying determinants of small holder farmers saving he was suggested that Perception about interest rate on saving interest rate was related with households saving in microfinance institution and significant at 5% level of significance. The marginal effect from the model output revealed that, if household heads perceive that saving interest rate of microfinance is fair, they would have 1159 birr more saving. Most of the respondents and participants in the focus group discussion also mentioned that saving interest rate was not attractive and it was one of major problem for lower saving of households in the microfinance institution.

2.2.3 .4 LAND SIZE

Ahmad et al, (2006), Schmidt-Hebbel et al (1992). Cited by Asare et al., (2018) Landholding is a measure of wealth in most African countries. Also, households with more access to land can make long-term investments in their properties to increase their farm-incomes. It has been shown in other studies that landholdings have a significant positive effect on household savings. According to Ejigu, (2020) when identifying determinants of small holder farmers saving in Ethiopia he was suggest that Land size was the variable affected households' saving positively and significant at 1% level of significance. The model output showed that if household heads have one hector were more land size, they would have 668.84 birr more saving. Given other factors of production, larger land size increases farm production as compared to smaller land size. Consequently, farm households who own larger land size produce more output which results in higher farm income and saving.

2.2.3 .5 OCCUPATION/TYPE OF PRODUCTION

The amount of income one makes mostly depend on his or her occupation and as such, it has postulated that people whose occupation earns them higher incomes were able to have higher savings than those who were into menial jobs. In Nigeria, Quartey and Blankson, (2008) examined that majority of the women households who save were engaged in agriculture but their mean savings were low. However those engaged in finance, insurance, real estate and business services had the highest mean current value of savings. Unlike Nigeria, the findings from Dupas and Robinson, (2013) work show that in Kenya, potential savers were market vendors, bicycle

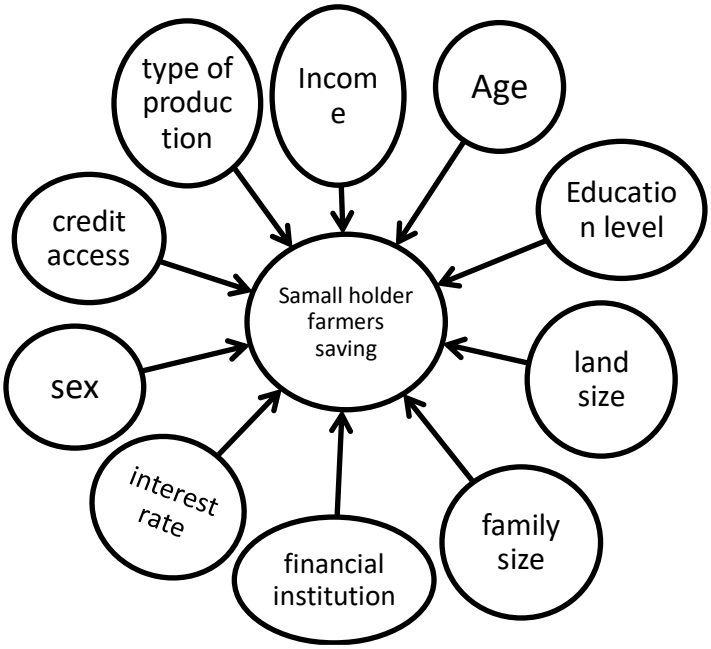
taxi drivers and self-employed artisans who did not have a savings account but were interested in opening one. The findings from both studies show that those within the medium to lower income group tend to have more savings accounts but those within the higher income group held the highest mean savings. Issahaku, (2011) also stands to support the assertion that the poor have the desire to save

2.3 CONCEPTUAL FRAME WORK

The following frame work is adapted from the frame work developed By Lim et al, (2011) and used as the bench mark as the foundation of the study. The framework is formulated to explain independent (age, sex, marital status, education level, family size, income, production type, distance to financial institution, accesses to credit, perception to interest rate, dependency ratio and land size of small holder farmer's household) and dependent variables that determinants of small holder farmers saving by theoretical and empirical views.

The diagram is show that the conceptual frame works of main determinants of small holder of saving as following.

Figure1: Conceptual Frame Work



Source: Developed By Lim et al, (2011)

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1 DESCRIPTION OF STUDY WOREDA

The study was conducted at Limu Seka woreda. Limu Seka district which is located 109 km from Jimma town. It is bounded by Yaanfa Woreda, in the west, Limu Genet in the north, Noono Benja Woreda the south and Choora Botor Woreda the east. According to the Limu Seka district WANRDO, the district covers an woreda of approximately 1,694 km2 and divided into 38 rural kebeles and 2 urban kebeles

Agro ecology is characterized by 13% highland and 55% mid-highland and 32% lowland. The altitude of the Woredas between 1,400 and 2,300 meters above sea level and is located approximately $8^0$40-$8^0$56 ' "N, $36^0$40 '- $37^0$13" E. The woreda potential for agriculture is estimated to be around 42,704 ha of land. Based on the information from Limu Seka Woreda WBDRA (2021) source report, Limu Seka had a total population of 173,575 out of this total population 89,206 were males and 84369 were females. The rural population was 149,550 (i.e. male 76,397and female 73,153), and urban population was 24,025 of which 12,946 were males and 11,079 were females.

The woredas have total number of smallholder farmers estimated to be 24,025 out of this 22,282 were males and 1772 were females. The woredas total number of investors in farming activities is estimated to be 16 all of them were male. The majority of the inhabitants were reported as Muslim, with 58.9 % of the population reporting that beliefs, while 33.1 % practice Ethiopian Orthodox Christianity, 8% were Protestants.

The Woreda has mainly three farming systems coffee production, cereal production, and livestock farming system. According to WANRDO (2020), More than 55% people live in smallholder coffee production, 45% of the people in the woreda live in the cereal farming system and livestock and mixing farming system.

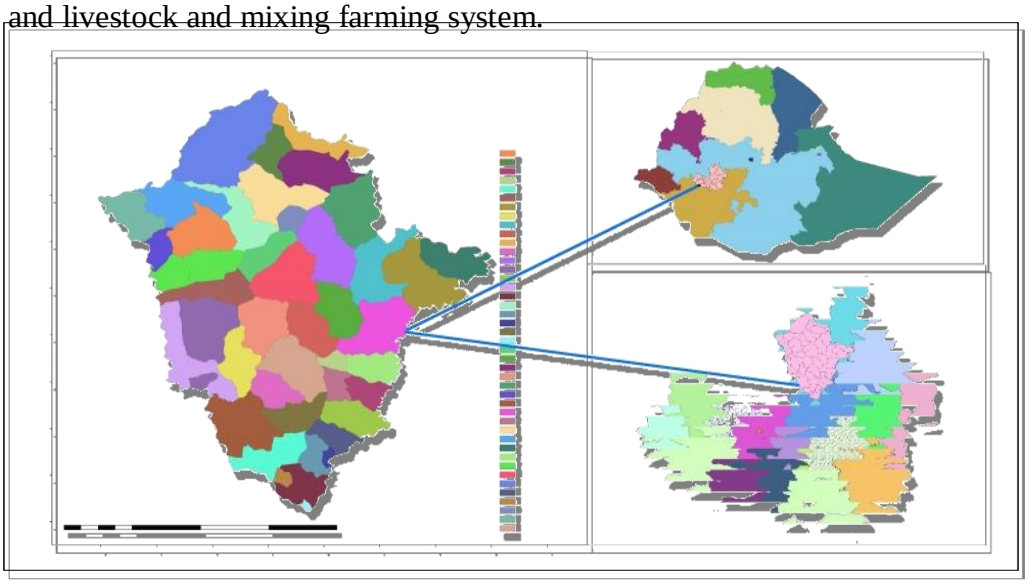


Figure 2: map of Limu seka woreda

3.2 SOURCE AND DATA TYPE

The study was employed both qualitative and quantitative data obtained from primary sources. Primary data was collected through face to face personal interview using structured questioners. Key informants' interviews also were conducted to collect to sufficient information. Key informants were contacted with the staff of the Commercial bank of Ethiopia Atnago branch, Cooperative bank of Oromia Atnago branch, and microfinance (OCSSCO) Atnago branch in the study woreda so to get information about how the institution is operating in the woreda and about the opinion of the people towards saving

3.2.1TARGET POPULATION

The targeted population for this study is all smallholder farmers head found in 38 kebeles of Limu Seka woreda was the target population of the study.

3.3. INSTRUMENTS OF DATA COLLECTION

3.3.1 QUESTIONNAIRE

To collect primary data from respondents, the study was employed structured and semi-structured questionnaires. Questionnaires were the most evident method of data collection, which is comprised of a set of questions related to the research problem. This method is very convenient in case the data were to be collected from a diverse population. It mainly includes the printed set of questions, either open-ended or closed-ended, which the respondents were required to answer based on their knowledge and experience with the issue concerned. In addition to elicit detailed information about the problem, Key informants' interview was used.

3.4 SAMPLE SIZE DETERMINATION

To determine a reliable and representative sample size out of the target population of 24,025 small-hold farmers. The researcher was used Yemane (1967) sample size formulas shown below.

$$n = \frac{N}{1+N(e)2} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

N – The number of total smallholder farmers household in the woreda, n- sample size e-level of precision with equal to 0.05, Because I have decided the to take the true margin of error 5% with a confidence level of 95%.

$$n = \frac{24025}{1+24025(0.05)2} = 394$$

3.5 SAMPLING TECHNIQUE

To comply with the objectives of the study, the probability sampling technique was used. Specifically clustering woredas kebele in to two based on production type, out of 38 kebeles 22 kebeles were coffee producers and 16 kebeles non coffee producers as the researcher found from woreda Agriculture and natural resource office (2020).Then after proportionally two kebeles was selected from non-coffee producers and three kebeles from the coffee producer a total of five kebeles were selected randomly. To obtain the required sample size of 394 respondents from selected five kebeles the respondents were selected proportionally from each selected kebeles.

Table 1: Proportionate sample size of small holder former households head by their Kebeles

Limu seka Woreda	Kebele	Total small holder farmer household			Number of sample household farmer head		
		Head					
		Male	Female	Total	Male	Female	Total
	Damme	1270	30	1,300	110	6	114
	Cheka	250	14	264	22	2	24
	Seka	1239	47	1286	108	4	112
	Bontu	776	27	803	67	3	70
	Yedo	827	31	858	70	4	74
	Total	4,362	149	4,511	375	19	394

Source: woreda administration office, 2020

3.6 METHOD OF DATA ANALYSIS

To achieve the objectives of the study the researcher was employed both descriptive and econometric analysis. The descriptive analysis was explained by using percentages, and tables to explain different socio-economic characteristics of the households. While a binary logistic regression model was used to identify the determinants of explanatory variables on household saving in the study area. Tools and statistics would be used in descriptive and econometric were generated with the help of econometric software STATA version 14. In addition the qualitative

data obtained through Key informants' interviews was analyzed using direct quotation and paraphrasing.

3.6.1 ECONOMETRIC MODEL

In order to determine the main determinants of small holder farmer's household the research was employed by logit model.

3.6.2 LOGIT REGRESSION MODEL

Here a question may arise, why the binary logit model researcher was preferred? In order to determine the main determinants of small holder farmer's house hold the research was employed by binary logit model. When the dependent variable in regression model is dichotomous, the analysis could be conducted using linear probability or logit or probit models. But the results of the linear probability model may generate predicted values less than zero or greater than one, which violet the basic principles of probability. However logit or probit models generate predicted value between 0 and 1, and they fit well to the non linear relationships between the probabilities and the explanatory variables (Gujarati, 2004). The binary logit model method gives parameter estimates that were asymptotically efficient, and consistent. By using Gujarati (2009), the logit approach is known to produce statistically sound results.

The probability of saving is specified as the value of the cumulative distribution function which is specified as function of the explanatory variables as follows.

$$Pi = E(Y = 1/X\ i) = \frac{1}{1 + e - (\beta_0 + \beta_1 X_1)} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

For ease of expositions, we write (1) as:

$$Pi = \frac{1}{1+e^{-Zi}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(3)}$$

The probability that a given household has saving by (3)

While, the probability for non-savers is given by:

$$\mathbf{1\text{-}P_i \frac{1}{1+e^{Zi}}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(4)}$$

Therefore, we can write:

$$\frac{p_i}{1-p_i} = \frac{1+e^{zi}}{1+e^{-zi}} \text{.....} \textbf{(5)}$$

Now (P_i /1-P_i) is simply the odds ratio in favor of being saver. i.e The ratio of the probability of saver to that of the probability of not saver.

Finally, taking the natural logarithms of equation (5) we obtained:

$$\textbf{Li=ln}\left(\frac{P_i}{1-P_i}\right) = Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + --+\beta_n X_n \text{.....} \textbf{(6)}$$

Where P_i is probability of household saving that ranges from 0 to 1 and $Z_{i\,is}$ a function of n explanatory variables (Xi) which is expressed as:

$$Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + --- + \beta_n X_n \text{ ... ... (7)}$$

Where β_0 is intercept, β_1,β_2 ..... βn were the slope parameters in the model Z_i = is the log of the odds ratio, which is not only linear in X but also linear in parameters. X_i is vector of the relevant sampled household's characteristics.

If the disturbances term (U_i) is introduced to the logit model it becomes:

$$Z_i = \beta_0 + \beta_1 X_1 + \beta_2 + --- + \beta_n X_n + U_i \text{ ... ... (8)}$$

3.7 ASSUMPTIONS OF LOGISTIC MODEL

- Response variable is Binary
- The observations are independent – logestic regression assumes that the observations in data set are independent each other. That is, the observations should not come from repeated measurements of the same individual.
- There is no multicollinearity among explanatory variables.
- There are no extreme outliers- Logistic regression assumes that there are no extreme outliers or influential observations in the dataset.
- There is Linear Relationship between Explanatory Variables and the logit of the Response variables.
- The Sample Size is sufficiently large

Based on the above justification, I have try to specified the logit model for probability of saving or not-saving of a household and determinants of saving.

The model would be correctly specified as;

$$S = \beta 0 + \beta 1AGE + \beta 2SEX + \beta 3MRTS + \beta 4EDU + \beta 5FMS + \beta 6INCOM + \beta 7PT + \beta 8DTFI + B9ATC + \beta 10LS + \beta 11PTI + \beta 12DR + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (9)$$

Description of the variables in the models is;

β0 = intercept of the model

S = saving of small holder farmers household head

AGE = age of small holder farmers household head

SEX = sex of small holder farmers household head

MRTS = marital status of small holder farmers household head

EDU = education level of small holder farmers household head

FM S= family size of small holder farmers household head

INCM = income of small holder farmers household head

PT = production type of small holder farmers household head

DTFI = distance to financial institution of small holder farmers head

ATC= accesses to credit of small holder farmers head

PTI= perception to interest rate small holder farmers head.

LS= Land size small holder farmer head

ε = error term

3.8 HYPOTHESES

Expected sign of variables:-

- Income expected to affect positively related small holder farmers household
- Education level,
- accesses to credit,
- Land size,
- availability of financial institution,
- perception to interest rate, and production type were positive relation with small holder farmers head saving
- Family size, distance to financial institution of small holder farmers were have negative correlation between household saving

CHAPTER FOUR

4. RESULT AND DISCUSSION

This chapter deals with the analysis and discussion of finding from the questioner and interviews conducted in five kebele from small holder farmers in Limmu seka woreda. The main objective of the study was to identify the main determinants of small holder farmers saving in the study area and practice of small holder farmers saving in the study area. Therefore, the result and discussion presented descriptive analysis, and econometric analysis.

4.1 DESCRIPTIVE ANALYSES

The demographic, socio- economic and institutional characteristics of farmers such as sex, age, income, marital status, family size, level of education, type of production, distance to financial institution, accesses to credit ,perception to interest rate , land size were variables related to depositor and non depositor small holder farmers were analyzed using descriptive statistics.

4.1.1 SEX OF RESPONDENT

From the total sample households, 19(4.8%) were female headed households from these 6 of them depositor and 13 of non depositor and 375(95.2%) were male headed households out of these 219 of them were depositor and 156 of them were non depositor. The majority of respondents were men. Womens have the capacity to save but they were faced with a number of barriers noted that combination of because of they worked unpaid work lower earnings, lack of accesses to financial institution leads them to less to save. The percentage difference between the male and female groups was found to be statistically significant at the 5% significant level with some relation between sex and saving practice of farmers.

4.1.2 AGE OF SAMPLE RESPONDENT

Age of small holder farmers head as it indicated in table 2 Below out of total respondents 394 97(24.6%) of respondents were under age category <35, 228 (57.9%) of respondents under age category 36 to 56 and 69(17%) of the respondents age greater than 56. Large number of the respondents' age category was 36 to 55 and their response to saving was higher than the rest of age category percentage difference of the group were statistically significant at 1% level. It is due to as age increases households would acquire knowledge and experience through continuous learning which help them to actively participate in different activities that help them to generate income and when income increases people save more

4.1.3 FAMILY SIZE

Family size is one of factors affecting saving status of households in the study area. 152(38.57%) respondents were having family size less than five, 198 (88%) households with family size 6 to 10, 44(19.55%) respondents were having family size greater than 11.The percentage difference of the family size group was statistically significant at 1% level. As it was clearly indicated by table 2 below farmer's households with large families save less where as households with lower family's size save more. The result is due to the fact that large family size resulted due to lack of awareness to family planning in the study area. Possible interpretation for the finding is for large family size, it is difficult to feed by one household head and their consumption level is greater than saving. Typically, large family size has the significant relationship with lower saving, an increase in the household size; the demand for household consumption increases and at the same time saving decreases.

4.1.4 LEVEL OF EDUCATION

Education level play major role in determining saving level of households through improvement of income; increase knowledge of the household to use new technology, help to participate in different income generating activities, family planning and improve management of resources. All those lead to good productivity of the household and can enhance income level which is directly related to saving. But, due to the lack of access to education, the greater number of the respondents saves less due to poor management of resources, poor family planning low awareness to technology. As the table 2 below shows, 144(36.5%) of the respondents were illiterate, out of the 67(22.77) were depositor and 77 (45%) non depositor

,185(47%) read and write out of these 111(49.33% of them were depositor and 74(43.78%) of them were non depositor, 48(12.2%) completed secondary education out of them 33(14.66%) of them were depositor and15(8.87%) of them were non depositor, and 17 (4.3 %) of the respondents education level were college and above out of these 14(6.22) of them were depositor and the remaining 3(1.77%) of them were non depositor , the result clearly shows that illiterate household's saving level was low due to low awareness to life style, lack of awareness to saving, less involvement of other income generation activity. The percentage difference of the educational level group was statistically significant at 1% level

4.1.5 MARITAL STATUS OF THE HOUSEHOLDS

In this study the marital status of respondents were from the total sample respondents 9.1% were single/unmarried, 3.8% divorced, and 3.6% were widowed. The large number of respondents were married about 329 (83.5%) from total respondent. Out of 329 married 191of them were depositor 138 of them were non depositor .From 14 widowed farmers 4 of them were depositor and 10 of them were non depositor. Respondent from 36 singles 21 of them depositor and 15 of them non depositor. From the last group divorce people out of 9 of them were depositor and 6 of them were non depositor. The result indicated that the large amount saver or depositors' were married because the married farmers' household heads have responsible to his family and live with stable life of style. As result of these, married people save their money greater than other category of marital status groups. But the percentage deference between marital status groups was not different from zero, statistically insignificant.

4.1.6 FARMER HOUSEHOLD INCOME AND SAVING

Income is an important determinant of the saving status of farmer's households. Income is a positive factor that analyzes the savings of household. The farmers households experience a very low level of income as many of the business men families earn their livelihoods from the trade, government and non government employer, many were daily wage workers, petty traders and other self-employed activities. That is they tend to spend more than they earn reducing their accumulated saving or going deeper into debt. So one can easily say that there is a deep relationship between income, consumption and saving and they all affects to each other.

In this study from total sample respondents 83(21%) were household income category <1, 0000, 138(61.3%) were house hold income category 10,001 to 30,000, 92 (23.35%) were house hold income category 30,001 to 60,000, 63(15.98%) were household income category6 60,001-100,000and 18(4.5%) were household income category above 100,000 birr respectively. From total respondents for the non depositor it was 42.89% and 57.1% was depositor. The percentage difference between the groups was found to be significant at the 1% significant level. This indicates when income increased the saving level also increased

4.1.7 PRODUCTION TYPE AND SAVING

The selected sample size represented the total population including different producer of farm groups which includes coffee, cereal crops, mixed farming, and livestock fattening and non farming activities as shown in the table 2 the study showed that the main coffee, cereals crops, mixed farming, livestock fattening and non farming activities. Among the depositor respondents 170(43.1%) house hold farmers were producing mainly coffee, 176(44.7%) house hold farmers were producing mainly cereal crop, 12(3%) house hold farmers were producing mainly livestock, 20(5.1%) house hold farmers were producing mainly mixed farming and 16(4.1%) house hold farmers were lives with non farming activities respectively. From farmer of coffee producer 57.33% were depositor and 24.26% of them were non depositor, from those producing cereal crop36.44% of them were depositor and 55.62 % of them were non depositor, 3%, 5%, and 2% were depositor from farmers producing livestock, mixed farm, and non farming activities respectively orderly .while 5.32%, 8.87% and 5.91% of them were non depositor. As indicated in table below Most of depositor was farmers those producing coffee .Therefore, the percentage difference between the production type groups were found to be significant at the 1% significant level. This indicates those farmers producing coffee was increased the saving level also increased.

4.1.8 CREDIT ACCESS OF HOUSE HOLD FARMERS

As the study shown from total sample respondents 214 (54.31%) have access to credit and 180(45.68%) were not access to credit. From farmers have access to credit 165 (73.33%) of them were depositor and 49(28.9%) non depositor and from those not have credit access farmers 60(35.5%) of them were depositor and 120(71%) were non depositors. Therefore, the percentage difference between the two groups was found to be significant at 1% significance level, this result indicate that the most those have access to credit respondent could want to save because they continuously get credit if they save. As it is indicated in the table 2 the percentage difference between depositor and non-depositor were significant

4.1.9 LAND SIZE

Land size was the variable affected households' saving positively. In this study from total respondent of 394, 136(34.51%) of house hold were owned less than 2 hectare, 212(53.8%) of house hold were owned 2 to 4 hectare,, and the remaining of 46(11.67%)of house hold were owned greater than four hectare respectively. As indicated in the table below farmers owned large size farm land save more while farmers with low farm land save less. In addition larger land size increases farm production as compared to smaller land size and consequently, farm households who own larger land size produce more output which results in higher farm income and saving. Therefore, the percentage difference between the groups was found to be significant at the 1% significant level. This indicates when land size increased the saving status of farmers also increased

4.1.10 DISTANCE OF FINANCIAL INSTITUTION

The financial institutions one factors of saving practice availability of formal financial institutions; it encourages the peoples to save. where the preference of saving over a year signifies short term, middle term and on a long term basis where short term saving accounts to daily, monthly and quarterly and medium term saving accounts to half yearly and more than one year where as long term saving were applied on a two year, five-year and on a above five year basis. Farmers were not that inclined in depositing in formal financial institution because of long distance from them and less income. In this study from total respondent of the sample

394,105(26.6%) of farmers were far from formal financial institution less than 10 KM, among these 62(27.55%) were depositor and 43(25.44%) were non depositor, 186(47.2%)of farmers were far from formal financial institution less than 10 to 20 KM, among these 124(55.11%)were depositor 62(36.68%) non depositer,and103(%) farmers were lives greater than 21KM,among these 39(17.33%) of them depositor and 64 (37.86%) were non depositor respectively

4.1.11 PERCEPTION TO INTEREST RATE

As in table 2 indicated from total sample respondents of 394 samples 206(52.3%) of respondents were have willingness to increase interest rate. The rest 188(47.7%) of them were not willing to increase of interest rate. From farmers those willing to increase interest rate 120(53.33%) of them were depositor and 8 6(50.88%) of them non depositor. While from those not willing interest rate increase 105(46.66%) of them were depositor and 83(49.11%) were non depositors. As described in Ejigu (2020) when identifying determinants of small holder farmers saving he was suggested that Perception about interest rate on saving interest rate was related with households. However in case of this study perception to interest rate was statistically insignificant. The key informant interviews from micro finance institution OCSCO, CBO and CBE s banks officers indicated that most of farmers of the study area were Muslim religion follower they discourage interest rate increase. Therefore the percentage difference between two groups was statistically insignificant.

Table: 2 summery statistics of respondent characteristics

Respondents characteristics	Total number of respondent N(394)		Saving decision				Chi-square Value
			Depositor N(225)		Non depositor N(169)		
	N	%	N	%	N	%	
Sex of respondent							
Female	19	4.8%	6	2.66%	13	7.7%	
Male	375	95.2%	219	97.33%	156	92.3%	5.311**
Age of respondent							
<35	97	24.6	32	14.22%	65	38.46%	
36-55	228	57.9	156	69.33%	72	42.6%	
>56	69	17.5	37	16.44%	32	18.93%	
Family size							
<5	152	38.57%	118	52.44%	34	20.11%	
6 to 10	198	88%	89	39.55%	109	64.5%	42.8***
>11	44	19.55%	18	8%	26	15.38%	
Level of education							14.291***
Illiterate	144	36.5	67	22.77%	77	45%	
Read and write	185	47	111	49.33%	74	43.78%	
Secondary	48	12.2	33	14.66%	15	8.87%	
College and above	17	4.3	14	6.22%	3	1.77%	
Marital status							
Widowed	14	3.6%	4	1.77%	10	5.91%	
Divorcé	15	3.8%	9	4%	6	3.55%	4.848
Single	36	9.1%	21	9.33%	15	8.87%	
Married	329	83.5%	191	84.88%	138	81.65%	
Income of farmers							
<1,0000	83	21.06 %	18	8 %	65	38.46%	57.5***
10,001 to 30,000	138	61.33%	84	37.33%	54	31.9%	

30,001 to 60,000	92	23.35%	64	28.44%	28	16.56%	
60,001 to 100,000	63	15.98%	45	20%	18	10.65%	
>100000	18	4.5%	14	6.2%	4	2.3%	
Type of production							48.389***
Coffee	170	43.3	129	57.33%	41	24.26%	
Cereal crop	176	44.7	82	36.44%	94	55.62 %	
Livestock	12	3	3	1.33%	9	5.32 %	
Mixed farm	20	5.1	5	2.22%	15	8.87%	
Non farming activities	16	4.1	6	2.66%	10	5.91%	
Access to credit							76.46***
Yes	214	54.31%	165	73.33%	49	28.99%	
No	180	45.68%	60	35.5%	120	71%	
Land size							11.34***
<2	136	34.51%	62	27.55%	74	43.78%	
2 to 4	212	53.8%	133	59.11%	79	46.74%	
>4	46	11.67%	30	13.33%	16	9.47%	
Distance to financial institutions							22.671***
Less than 10 KM	105	26.7	62	27.55	43	25.44	
10 to 20 KM	186	47.2	124	55.11	62	36.68	
Above 21 km	103	26.1	39	17.33	64	37.86	
Perception to interest rate							.231
Yes	206	52.28	120	53.33	86	50.88	
No	188	47.72	105	46.66	83	49.11	

4.2 ECONOMETRIC ANALYSIS

In this study in addition to descriptive analysis, the logestic regression model was employed to investigate the main determinants of small holder farmers saving in the study are

Before analyses Multi collinearity was also tested by using correlation matrix and it is detected there is no multi collinearity problem between explanatory variables. According to (Gujarati,2004) as rule of tumb multi-collinearity is a serious problem, when a pair wise correlation coefficient between two independent variables is greater than or equal to 0.8. Therefore from correlation marix and Contingency coefficient chi-square it is showed that there is no series multi collinearity problem between variables.

Hetroscedasticity Assumptions in linier regression analysis is that the errors (ui) have a constant variance σ*2*.if the errors do not have a constant variance; we say that they are heteroscedastic (Gujarati, 2004). However, the estimated parameters of regression in which hetrosdasticity is present consistent, though they are inefficient. In case binary logit model, it is more practical to make some assumptions about the nature of hetroscedasticity and estimate the model than just to say that maximum Likelihood estimates are inefficient if hetroscedasticity is ignored (Gujarati, 2004). In this study, hetroscedasticity was tested for all important variables include in model using robust standard error test (Wooldridge, 2002). Therefore there was no serious problem of hetroscedasticity in the model.

Test of goodness of Fit of the model

Logistic regression uses maximum likelihood, which is an iterative procedure. The first iteration (called intration0) is the log likelihood of the "null" model, that is, a model with no predictors. At the next iteration, the predictors are included in the model. At each Iteration log likelihood was increased because the goal is to maximize the log likelihood. When the difference between successive iterations is very small, the model is said to be have "converged".

The deviance (-2LL) is measure of difference between a given model and the saturated model, smaller values indicate better fit. The smaller than the null deviance, hence the set of predictors significantly improved model fit.

Test of significance of Hosmer- Lemeshow Goodness of fit statistic Hosmer- Lemeshow test

Chi- square	Df	Sig
8.53	8	0.3835

The p – value (0.3835) which is greater than 0.05 in the above table indicate not reject null hypothesis. Hence the model is good fit to data.

Determinants of small holder farmers saving practice

In this section the binary logistic regression is applied identify determinants of farmers saving status, which is a dichotomous response variables, with the explanatory variables. STATA version 14.0 is used to perform binary logistic regression analysis.

The estimated result of the regression was shown in4. 1 a total of 11 explanatory variables were included in the model out of which seven variables were found to be significant. These were Age of farmers, family size of farmers, annual income of farmers educational levels of farmers, land holding size of farmers, accesses to credit of farmers and type of production were among found to be significantly affecting the saving practice of small holder farmers

Table: 3 output of binary logistic regression determinants of small holder farmers saving

saving practice	.Odds Ratio	Std. Err	Z	P>z	[95% Conf.Interval]	
Sex						
Male	2.625059	1.995213	1.27	0.204	0.5917948	11.64413
Age						
36-55	7.025347	3.001376	4.56	0.000***	3.041001	16.23002
55 and above	6.991249	3.811786	3.57	0.000***	2.401378	20.35397
Marital status						
Divorce	1.745381	2.215204	0.44	0.661	0.1450649	20.99996
Single	0.419239	0.547239	-0.67	0.505	0.032462	5.414361
Married	0.92044	1.007601	-0.08	0.940	0.1076933	7.866871
Level ofeducation						
read and write	1.97222	0.745084	1.80	0.072*	0.9405469	4.135521
Secondary	7.526039	5.045584	3.01	0.003***	2.022584	28.00441
college and above	11.77742	12.23454	2.37	0.018**	1.537484	90.21729
Family size						
6 to10	0.415526	0.139522	-2.62	0.009***	0.2151737	0.80243
11 and the above	0.147848	0.074289	-3.80	0.000***	0.0552222	0.3958386
Land size						
2 to 4	2.36442	0.911691	2.23	0.026**	1.110482	5.034281
Above 4	5.424643	3.024244	3.03	0.002**	1.81897	16.1777
Annual income						
10001-30000	3.20398	1.41714	2.63	0.008***	1.346474	7.623976
30001-60000	3.949477	1.90762	2.84	0.004***	1.532514	10.17829
60000-100000	4.288037	2.397836	2.60	0.009***	1.43309	12.8305
Above 100000	6.930238	5.581314	2.40	0.016**	1.429641	33.59457
Access to credit						
Yes	10.17566	3.423677	6.90	0.000***	5.262228	19.67686

DTFI						
11 to 20	1.074257	0.39659	0.19	0.846	0.5210322	2.214888
21 and above	0.566976	0.236964	-1.36	0.175	0.2499258	1.286229
Type of production						
cereal crop	0.213521	0.074547	-4.42	0.000***	0.1077115	0.423273
Livestock	0.09694	0.098999	-2.29	0.022**	0.0130988	0.7174303
mixed farming	0.050289	0.041394	-3.63	0.000***	0.0100191	0.2524173
non farming work	0.176685	0.147595	-2.08	0.038***	0.0343674	0.908351
Perception tointerestrate						
Yes	1.131168	0.352948	0.40	0.693	0.6136696	2.085064
_cons	0.022275	0.028114	-3.01	0.003	0.001877	0.2643352

Logistic regression Number of obs = 394Prob > chi2 = .000

Log likelihood = -149.36201LR chi2(25) = 239.49, Pseudo R2 = 0.4450

Source: own computation, 2021

***Note**: the symbol ***, ** indicate that the estimate is significant at1% and 5% level. The first category variable (0) was taken as reference. **Reference categories were**: female for sex, less than 56 for age, illiterate for education, less than 5 for family size, less than 2heck for land size, widowed for marital status, less than 10,000 for income and coffee for production type*.

AGE OF FARMERS: The age of farmers in the age groups between, '36 to 55 'were 7times more likely to save compared to farmers in the age group less than 36 years; while farmers in the age group above 55 were 6.9 times more likely to save compared to farmers in age group less than 36 controlling the other variables in the model. The result of this study indicated that the age of farmer's household head has significant effect on the farmers saving with ($p < 0.01$). That is, as the farmer's age increases his saving status will increase; this maybe because his possibility of getting income, asset, experience and awareness about saving will increase as age increases. The result is similar to Bogale,(2017), Ashok, Kumar, and Jagadeshwara (1985) found that savings was low for younger and old groups and high for middle age groups. However Odoemenem, Ezihe, &Akerele (2013) study indicated that age composition did not have significant influence on saving.

EDUCATIONAL LEVEL: The Small holder farmers who can read and write were 1.97 times more likely to save compared to illiterate farmers. The odd of farmers having saving experience who had secondary education was 7.5 times high ire than the odd of farmers having saving experience illiterate farmers; while the odds of farmers having saving experience who had collage and above was 11.7 times higher than the odds of farmers having saving experience illiterate farmers controlling for other variable un model constant. This is because being educated farmers may relatively gather information related to saving and understanding the procedure of saving in financial institution, education also may have positive impact on income of farmers as result saving status also increase as income increases. The finding is similar with Tsega and Yemane (2014.) who showed positive relation between house hold saving and educational level.

FAMILY SIZE: Family size as a result of binary logistic regration showed in table:4.12 family sizes was one of the determinants of saving practice of small holder farmers. Farmers those having large family size above 11 were 0.147 odds ratio or 85.3% times less likely to save compared to farmers having small family less than six; while farmers grouped in having family size between 6 to 10 were 0.415 odd ratio (58.5%) times less likely to save compared to farmers having small family less than six family size with ($p < 0.01$) controlling for the other variables in the model..The reason is that the large family size the consumption pattern is high so the saving status becomes reduced. The reason is that in the large family size the

consumption pattern is high so the saving condition becomes reduced. Therefore the same finding was true in Million, (2016) taking the household size as a whole, he was found family size as determinants of saving practice.

LAND SIZE OF FARMERS: From the table, if all other variables were held constant, the odds of small holder farmers holding farm land between 2 to 4 hectares were more than twice more likely to save compared to farmers holds less than two hectare; While farmers holding farm land above four hectares were 5.4 times more likely to save compared to farmers holds less than two hectare with ($p< 0.05$). As a result, farm households those own larger land size produce more output which leads to higher income and deposit more. The farm land size indicates the economic tendency of farmers as it acts as an economic value for any physical asset to be considered. The result is consistent with Temam and Gebru, (2018).

HOUSEHOLD ANNUAL GROSS INCOME: From the binary regression output table, if all other variables were held constant, the odd ratio of sma1l holder farmer those earned gross annual income above 100,000 were about 6.9 times, those earned 60,000 to 100,00 were 4.2 times, those earned 30,001 to 60,000 3.9 times, and those 10001 to 30,000 were 3.2 times more likely to save when we compared those farmers earned gross annual income less than 10,000 respectively with ($p<0.05$ and 0.0l) significance level. Consequently In this study gross annual income of farmers household was one of the determinants of saving of small holder farmer with significantly different from zero at 1 % and 5% level. This fact comes from when income rise households 'capability to save increase it means as income increase proportion of income saved also increases which were because share of income consumed decreases. This is indicated that different income groups have different saving status those high income groups have a significant high saving status and low income groups have insignificant saving. It is consistent with Dalal,(2011) saving and income are positively related, empirical studies bay Qin and Ndiege, (2013). And similar with the study conducted by Abera, (2016) around Diredawa

CREDIT ACCESSES OF FARMERS: The odds of farmers those having saving experience who had access to credit was 10 times higher than the odds of farmers those having saving experience who had no access to credit at 1% significance level controlling the other variables in the model constant. The reason behind the result is Credit access is the helping smallholder farmers to acquiring inputs, equipment and different mechanized tools for farming such as fertilizer, tractors, livestock, and different pesticides to increase his agricultural product .For these reasons credit access is critical for small holder farmers. The study result also indicate these facts

TYPE OF PRODUCTION: Production type is one of the factors for farmer's income to increase or decrease. In this study production type was one of the variables including the model. Accordingly the researcher contacted five category of production type of farmers. In case, the first variable (coffee) were considered as the reference of category for comparison purpose and the rest of four variables were included in model. As result farmers those participating in cereal crop were (odds ratio = 0.21) 0.21 times, those producing livestock were (odd ratio =0.09) 0.09 times, those farmed mixed farming were (odd ratio =0.05) and those participating in non farming were (odds ratio =0.17) less likely to save compared to coffee producer farmers at 1% and 5% level of significance.

CHAPTRE FIVE

5. CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

Most of limu seka woreda population is small holder farmers and they have large share in economic activity of the country. But their contribution was not that much as the large their number Because of experiencing rural poverty, low income, unemployment and inflation. The farmers' saving is one of the important components of farmer's economic activity and country growth as a whole. In order to understand the main determinants of small holder farmers saving .In this study, efforts were med to investigate the main determinants of small holder farmers saving in Jimma zone limu seka woreda.

The study particularly addressed small holder farmer's decision determinants to save or not was analyzed. The approach used for analysis involved the use of descriptive and econometric model of binary logit regression analysis to identify the main determinants of small holder farmers saving and practice were analyzed. The research indicate that as age of farmers increase saving practice also increase at increasing rate and decrease at decreasing rate at old age. It we look in to saving practice of farmers we find that saving are accounted to be very low habit as because of their low land size holding and low annual income. To having large family size leads to farmers consume their all income and results unable to save. To increase educational status is also increase saving habit of farmers at study area as this study indicated the number of farmers having savings practice increased with higher level of education but most of rural small holder farmers have low educational status which is resulting in less awareness of the farmers towards the benefit of saving. The result of the data collected from the field also showed those who had the opportunity to get accessed credit have saving practice more than those not have access to credit.

. Most of the small holder farmer's household's heads were engaged in production of coffee and cereal crops. The remaining low percentage was producing livestock, participating in mixed farming and non farming activities. As finding of this research producing coffee was proving more opportunities to increase saving practice of the farmers. The research however,

found that sex, marital status, distance to financial institution, and perception to interest rate do not have any effect on the possibility to saving habit of farmers.

The result of the data collected from the field also showed those who had the opportunity to get accessed credit have saving practice more than those not have access to credit.. Thus this study may contribute knowledge on determinants of small holder farmers saving in rural farmers of the country and encourage evidence based intervention and providing solution

5.2 RECOMMENDATION

Based on result researcher was drawn from the data collected from the limu seka woreda and analysis made above on saving practice and determinants of small holder farmers saving the study area recommended as the following. First a limitation to the study was since farmers form of saving is different from the other the study was not able to identify form of small holder farmers saving. It is the fact that many of farmers diversifying their saving instead of deposit to financial institution investing their money to livestock and other fixed asset because lack of different factors. Therefore the study proposes that researchers/ studies for future it will be investigate much deeper into for the form or the way of rural farmers saving.

Since educational status of the farmers was strong positive relationship with saving, strong and efficient educational system is important. The study acknowledges that the country at the moment to start to implement to increases accessibility and quality of education. Therefore, the local government and concerned body should give attention for the educational sector and farmers' extension training programs. The government and concerned body it is better to try to improve income of small holder farmers by diversifying income sources. The agricultural extension that provides small holder farmers with advanced inputs, technical training aimed to increasing the productivity of their frames to increase income and saving

The study was indicated family size negatively related to small holder farmers saving. Therefore family size must be managed through, educating women, expanding accesses of health service, and proper family planning is can solve problem. Access to credit service has a significant positive impact on saving practice of farmers. Therefore, financial institutions,

government, private creditors and other body who give services of credit should be try expand credit service to small holder farmers.

The woreda and concerned body should be try to use farm land properly in efficient and effective way .since land is fixed and scarce proper land management is important .To increase farmers capacity of production. This is implies that when production capacity of farmers increase income and saving practice increase. The other is policy maker and concerned body should have to think about equitable land distribution as a whole.

The concerned body in study area should expanding and diversifying other crop production to coffee farming production can leads to increase saving practice in the study are

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APPENDIX

i. RESEARCH QUESTIONNAIRE

Jimma University

College of Business and economics

Department Of Economics, School of Post Graduate Studies

A questioner to be filled by respondents

Dear respondents,

I'm a student of Development Economics in Jimma University. The questioner is designed to gather data on research entitled Determinants of small holder farmers saving; the case of LimuSeka district Jimma zone, Oromia, Ethiopia

The data you provide were believed to be have a great value for the success of this research. I would like to assure you that this research is purely for academic purposes. Your response would be treated with extremes confidentiality. Hence, there would be no way anyone can trace the result back to responses of any individual respondent. I would like to express my deepest appreciation for generous time, honest and prompt response.

BY DilargachewTsegaye

Part I: Respondent's Information

Respondent's Full Name _____ Study

WoredaLimuSekaWoreda_____

Date of Data Collection_____Kebele_____

Signature_____

Part 11: Interview Questionnaires for Households'

1. Sex of respondent's Male ☐ Female ☐
2. What is your Age in yeas? _____
3. What is your Marital Status? Single ☐ Married ☐ Divorced ☐ Widowed ☐
4. Were you the small holder farmer households? Yes ☐ No ☐
5. What is the level of your education?

Illiterate ☐ primary ☐ Secondary ☐ College and the above ☐

6. How many people usually live in your household? (This includes you_____
7. How many members of your family were dependent on you ? ___
8. How many your families were active for farming /other work _____?
9. How many members of your household were above the age of 65? _____
10. How many hectarewere farm land you have? _____
11. What is your dominant type of production?-_____
12. What is your major source of income? _____
13. How much average total income do you earn?

Income Within a month on average(Approximately_____

Income Within three month on average(Approximately)_____

Income Within six month on average(Approximately) _____

Income Annually on average(Approximately) _____

14. Do you save money from your income/earning? Yes ☐ No ☐

15. If your answer is “yes” in question number 15, how much birr do you save on the average?

Within a month_____

Within three month on average_____

Within six month on average_____

Within annual on average_____

16. If your answer is “no” for question number 15, please justify your major reason

_____

_____

____

17. What is the rate of your saying performance?

Poor ☐ satisfactory ☐ good very good ☐ excellent ☐

18. If your response for question number 18 is “poor”, please justify your reasons._____

19. How much birr do you spend per month on average? _____

20. Do you have saving access in your woreda? Yes ☐ No ☐

21. Where do you prefer to save your money?

Formal institution (or modern) ☐ Informal institutions (like Equb, Edir) ☐

22. If your response for question number 22 is informal/traditional, why? Justify your answer._____

23. What is your reason if your answer for question number 22 is modem or formal institution?

Please list your reasons._____

24. If your response for question number 22 not save money in both informal/traditional where or how do you save your money?_____

25. How often do you save your money?

Every time I get moneyr ☐ ly quarterly y ☐ ☐

26. How long is the formal institution far from your home in KM? _____

Is it suitable YesN ☐ ☐

27. Have you awareness that you can earn interest on your saying accounts?

Yes ☐ No ☐

28. Will you decide to save more if the current interest rate rises?

Yes ☐ No ☐

29. Do you have access to credit facilities? Yes ☐ No ☐

30. If your answer is "yes" for question number 30, what is your source of credit?

Private money lenders ☐ Micro finance institutions ☐ Commercial Banks ☐

Friends or relatives ☐ others ☐

31. If your answer is "No" for question number 29, what is your reason?

Lack of credit facilities ☐ have never heard of credit facilities ☐ Others' ☐

32. Pease list if there is anything that you think would be important in analyzing small holder farmers Saving

_____

_____

Part II

Interview Questions prepered for key informants of formal financial institution saving officer, loan officer and head.

1. What problem did you face while running saving small holder farmers?

A. Economic factor _____

B. Social factors

_____

C. Legal and Administration factor

_____

2. What other problem did youface relating to small holder farmers saving?

_____

3. What measures did you take to solve the problems you faced?

_____

4. How do you explain the relationship you have with depositors

_____

5. How do you explain the practice/habit of small holder farmers saving?

_____

6. What is the problem of small holder farmer's household head depositor level of saving?

_____

7. What measures did you take to solve the problems you faced?

_____

8. How is your relationship with depositor / small holder farmers?

_____

9. What is the main identified problem of small holder farmers saving if you know?

_____

_____

This Is The End Of The Interview.

Thank You for Your Kind Cooperation!!!