



DMU



AJIDS

Determinants of Rural Households' Saving Amount in Libokemkem District, North-west Ethiopia

Melsew Nibret^{1,*}, Girmachew Seraw², Tesfaye Belete³, Birhanu Melesse² and Beneberu Assefa⁴

¹Department of Rural Development and Agricultural Extension, College of Agriculture and Natural Resource, Mekdela Amba University, P.O. Box 32, Tuluawilya, Ethiopia.

²Department of Rural Development and Agricultural Extension, College of Agriculture and Environmental Sciences, Bahir Dar University, Bahir Dar, Ethiopia.

³Ethiopia Cooperative Commission, Libokemkem District Branch, Addis Zemen, Ethiopia.

⁴Ethiopian Policy Studies Institute, Economic Sector Policy Studies, Addis Ababa, Ethiopia

*Correspondence author email: melsewnibret@gmail.com

Abstract

This study filled a research gap by examining the factors that affected household savings levels (amount) in the rural Libokemkem district. Although many studies have explored saving amount behaviors in both industrialized and developing nations, the majority of research has focused on macro-level issues. Comprehensive research on household savings amount in Ethiopia, particularly in rural areas, has been lacking, and fewer studies have examined saving amount behaviors at the household level. This study sought to bridge this gap by examining the factors that affected rural households' saving amount habits in the Libokemkem district. The study employed both quantitative and qualitative research designs and used a purposive and random sampling technique to collect data from 157 households using primary and secondary data sources. Narrative and descriptive techniques were used to analyze the qualitative information gathered from key informant interviews and focus group discussions. The Ordinary Least Square (OLS) Regression model and descriptive analysis were used for analysis. The results showed that formal financial saving was practiced by 45.2% of the studied households. Regression analysis results indicated that family size and livestock ownership had a positive effect on savings levels, whereas educational attainment and proximity (distance) to savings institutions had a negative significant effect. To encourage improved financial behaviors among rural households, the study suggested boosting consumer awareness and strengthening credit services.

Keywords: Amounts, finance, Libokemkem, rural, saving

1. Introduction

Because household savings have a major impact on the flow of income within an economy, they are essential to the economic

development of both developed and developing countries (Iyoha et al., 2003). Future investment opportunities at the macro and micro levels are influenced by household savings, which support economic

expansion. Conversely, a lack of savings can result in increased borrowing costs for firms and financial risks for individuals, which can impede social welfare advancements and productivity growth (Abu, 2004; Wilcox, 2008). Due to a lack of domestic savings, many less developed nations (LDCs) are forced to rely on foreign capital inflows, which results in borrowing from outside sources to fund investments. This tactic may lead to debt accumulation over time (Addis, 2019).

Agricultural income is the main source of savings for rural households in Ethiopia (Dejene, 2003). However, because of the seasonal availability of work and the varying cash flow from agricultural sales, the savings rate in rural areas is extremely low and unpredictable (Bealu, 2018). Households' financial stability and the nation's savings culture as a whole are threatened by this irregular saving.

Ethiopia has very limited domestic funds to finance investments due to its poor saving practices, according to empirical evidence (Aron et al., 2013). Savings from domestic sources, particularly households, can be leveraged to fund local initiatives in nations with greater saving rates (Mengesha, 2015). However, Ethiopia uses a combination of grants, foreign loans, and domestic government borrowing to fund investments in the short term. This approach raises the nation's debt load and is unsustainable over time. Ethiopia must prioritize raising local savings due to the risks involved in obtaining outside funding. The National Bank of Ethiopia (2018) reports that the average gross domestic savings rate is 18.8% of GDP. As a result, worries about

the nation's financial stability have grown as investment funding has shifted from domestic savings to foreign direct investment and external borrowing.

In Ethiopia, especially in the Amhara region, the financial industry is still in its infancy. Even while banks and microfinance organizations have grown recently, their reach is still quite small. Furthermore, these institutions prioritize loan provision above savings mobilization, leading to a credit-led approach to savings as opposed to a savings-led strategy (Hailu et al., 2023).

The majority of research has concentrated on macro-level issues, although many studies have looked at saving behaviors in both industrialized and developing nations. Comprehensive research on household savings in Ethiopia, particularly in rural areas, is lacking, and fewer studies have examined saving behaviors at the household level (Halefom, 2015).

Low levels of saving are found among rural households in the Amhara Regional State, especially in the Libokemkem district. This is demonstrated by their incapacity to provide for their fundamental necessities during agricultural hardships, which affects both personal financial security and the accumulation of national capital, impeding overall economic progress. Even while Libokemkem district has seen some advancement, including the creation of bank branches, microfinance organizations, health insurance programs, crop insurance pilots, and savings and credit cooperatives, these initiatives continue to confront numerous obstacles. These include a lack of funding, poor outreach, and an inability to deliver

services at the size that is required (Hailu et al., 2023).

In the Amhara region, it is common for rural households to amass substantial sums of money during the harvest season, but many of them squander it, leaving them in a precarious financial position when the harvest season concludes. This frequently leads to a lack of funds for necessary agricultural supplies for the upcoming growing season (Getamesay and Desta, 2024).

Current research on savings faces at least three significant limitations. First, while several studies have sought to investigate the factors affecting saving behaviors in Ethiopia and other regions (e.g., Duressa and Ejara, 2018; Lidi et al., 2017; Moses et al., 2019; Obalola et al., 2018; Ruranga and Hacker, 2020), most of these studies focus on macro-level determinants of savings, with limited attention given to household-level analysis. Second, many prior studies have not distinctly examined rural savings separately from urban savings (e.g., Abdu et al., 2021; Borko, 2018; Million and Belay, 2019; Ruranga and Hacker, 2020). Third, the majority of existing research in Ethiopia does not simultaneously address the factors influencing the decision to save and the amount saved (e.g., Azeref and Gelagil, 2018; Borko, 2018; Duressa and Ejara, 2018; Gonosa et al., 2020; Mulatu, 2020; Negeri and Kebede, 2018). As a result, there is a clear need for this study, which aims to analyze the saving patterns and the amount saving of rural households and the factors that shape them. Therefore, the purpose of this study was to identify the factors determining rural households' saving

amounts in formal financial institutions (banks, microfinance, savings, and credit cooperatives).

The primary significance of this research lies in its potential to provide decision-makers at regional and national levels with valuable insights for developing effective strategies to address the challenges of promoting savings in rural areas. Importantly, this study will act as a foundational reference for future researchers exploring similar topics in other parts of Ethiopia. In summary, the findings of this study could serve as a guide for regional and federal policymakers, as well as relevant organizations, to foster private savings in rural communities.

2. Review of Related Literature

2.1. Theoretical review of literature

Several saving hypotheses are inferred by consumption theories because of the quantity of money that is saved. These include the Keynesian Absolute Income Hypothesis, the Duensberry Relative Income Hypothesis, Friedman's Permanent Income Hypothesis, and the Modigliani Life Cycle Hypothesis. These theories are only touched upon in passing in the theoretical literature. The Keynesian absolute income hypothesis states that individuals save aside funds from their current earnings to cover their projected future expenses. If their income drops, people delay their present spending to preserve the utility level of consumption in the future, which affects the amount of money saved as a precaution (Njung'e, 2013). Accordingly, one can only save if they have enough money to pay for all of their basic needs and can only save what

remains once those needs are met (Otto, 2009, as cited in Michael, 2013). In contrast to the lifecycle or permanent-income theory, which holds that an individual's lifetime resources increase in tandem with growth rates, Duesenberry's relative income hypothesis states that greater growth rates lead to higher saving rates (Nayak, 2013).

The permanent income hypothesis, on the other hand, states that people would spend money in a way that is consistent with their expected average income over the long run. A household will only begin saving if its current income surpasses the amount of its anticipated permanent income to guard against future income declines. According to this hypothesis, one of the main elements influencing domestic saving is income growth, which affects the working population's lifetime income. This is because higher income growth rates raise the total income of active workers in comparison to inactive workers, increasing the workers' lifetime resources needed for spending and saving (Nayak, 2013).

Lastly, Franco Modigliani and Richard Brumberg's life-cycle theory assumes that people base their consumption on a predetermined proportion of their anticipated lifetime income. There will be a net positive saving since there are more young people than old and more people saving than not as a result of population growth. This is because the total amount of money that the elderly do not save will be less than the total amount that the young save. Similar to population growth, economic expansion results in positive savings, and the faster the growth, the higher the rate of saving. Younger people will save

more money than older people if incomes are rising (Nayak, 2013). The life cycle hypothesis identifies per capita income growth as one of the major factors influencing saving rates because people save for the future and base their decisions on their lifetime income. But in practice, current income also plays a big role in understanding how people save (Ahmad and Hussein, 2010).

2.2. Empirical review of literature

Numerous empirical studies from around the world, including Ethiopia, have explored the predictors that determine rural households' savings amount. In summary, these reviews highlight that demographic, socioeconomic, and institutional factors influence savings behavior differently across locations. This variation underscores the need for location- and resource-specific research to identify the key factors affecting rural households' savings amount in different areas.

A society's saving habits are greatly influenced by the social, economic, and demographic traits of its households. Over time, changes in these variables may cause the national saving rate to fluctuate (Schultz, 2005). The average annual savings of Ethiopian households in financial institutions is 875 Birr (7 USD), which is insufficient to support the country's economic growth (Feyissa & Gebbisa, 2021). Ethiopia's savings rate is significantly lower than the averages for least developed countries (27%) and sub-Saharan African nations (21%) in 2021 (World Bank, 2022). Between 2015/2016 and 2018/2019, the average investment and savings gap stood at

37% and 31% of GDP, respectively (National Bank of Ethiopia, NBE, 2019). This low savings rate can be attributed to several factors, such as limited access to financial services, insufficient incentives for saving, low financial literacy, lack of awareness, and financial exclusion (Abdu et al., 2021). Girma et al. (2013) examined Ethiopian saving factors using a Tobit model using household survey data and discovered that household income, land size, and the head of the household's level of education all had a positive impact on savings. It is challenging to monitor these funds in the national accounts because many households predominantly use informal saving strategies, according to their analysis.

A study by Strzelecka and Zawadzka (2023) aimed to analyze the factors influencing farm households' tendency to save, using classification and regression tree analysis. The research surveyed 348 farmers and found that income was the most significant factor affecting savings, followed by farm size and the education level of the household head. The study also revealed that for lower-income families, having a successor, combined with the head of the household being over 34.5 years old and having at least a secondary education, negatively impacted savings accumulation.

In a separate study, Bollinger et al. (2022) explored whether access to higher education influences household saving rates. Using a two-period model of family saving decisions, the research analyzed survey data from Chinese households during a period of significant educational expansion. By comparing families before and after the reform, the study found that a 10% increase

in the likelihood of attending college raised the saving rate by 5.9 percentage points, highlighting the role of education in shaping saving behavior.

Another study by Sibuea and Sibuea (2020) examined the impact of socioeconomic factors on households' ability to save. Conducted in Deli Serdang Regency, North Sumatera, the research surveyed 60 out of 312 paddy rice farmers. The results indicated that factors such as the age of the household head, number of dependents, education level, and farming experience significantly influenced saving capacity. Additionally, economic factors like land size, pricing, income, and consumption played a crucial role in determining households' ability to save.

3. Research Methods

3.1. Description of the study area

The study was conducted in Libokemkem district, South Gondar Zone, Amhara Region, located East of Lake Tana and bordered by Ebinat, Fogera, and West Belessa districts. Its administrative center, Addis Zemen, is 652 km from Addis Ababa and 80 km from Bahir Dar. The district covers 1,081.57 sq km, with 42% plains, 30% uneven terrain, 21% hills, 6% water bodies, and 1% gorges. It includes 33 rural kebeles and spans the high altitude (22%) and temperate (78%) agroecological zones, with elevations of 1,800–2,850 meters. Annual rainfall ranges from 900–1,400 mm and temperatures average is 18–25°C.

Agriculture is the primary livelihood, with 92% engaged in mixed farming, relying on traditional, rain-fed systems. Crop production and livestock rearing are the

main income sources. The district has telecommunication, postal services, three private banks, two commercial banks, and two microfinance institutions. Road infrastructure includes 73 km of all-weather and 30 km of dry-weather roads, with 16 rural kebeles accessible year-round and seven only during dry seasons.

Libokemkem district in South Gondar Zone, Amhara Region, is characterized by low

savings levels among rural smallholder farmers. Most production is done by smallholders, but formal savings are limited. Assessing the determinants of rural households' savings levels (amounts) can help identify constraints, improve savings, and promote capital accumulation and investment growth.

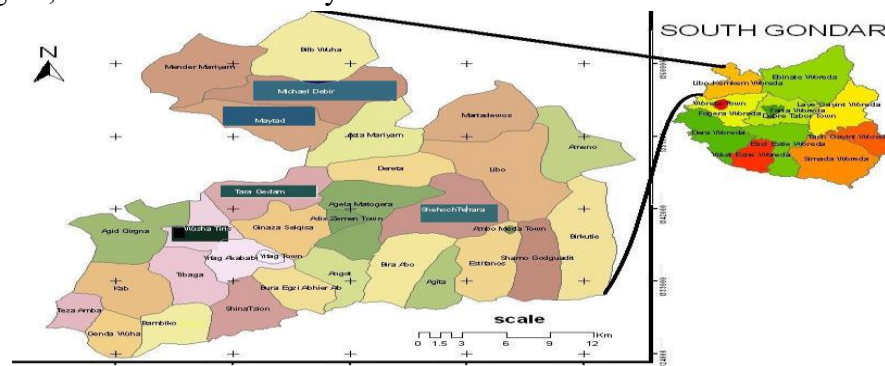


Figure 1. Libokemkem District Location Map

3.2.Data type and source

Both quantitative and qualitative data were used in this investigation. Data was gathered from numerous primary and secondary sources. A variety of sources, including both published and unpublished works, were examined for secondary data. To locate pertinent secondary data and ideas for the study questions, a variety of websites were searched. Theoretical literature and empirical studies from Ethiopia and other developing nations were also reviewed. Household surveys were used to collect primary data.

3.3.Sampling procedure and sample size determination

The study's representative households were chosen using a two-stage sampling technique. To investigate the saving habits

of rural households, the Libokemkem district was specifically chosen, taking into account variables like time, money, and accessibility. Three kebeles (the smallest administrative units in Ethiopia) (*Bura*, *Bira*, and *Agela Mantogera*) were chosen using simple random sampling out of the district's 34 rural kebeles to maximize precision, minimize bias, and provide every kebele an equal chance of being included. Since households served as the main unit of analysis, 157 households (57 from *Bura*, 55 from *Bira*, and 45 from *Agela Mantogera*) were chosen through systematic sampling, with the sample size being proportionate to the population in each kebele. Because rural settlements are separated, the systematic sampling technique was chosen for its spatial efficiency. A lottery was used to select the first household in each kebele, and

subsequent households were chosen at intervals of 25 households.

The sample size was established by using the scientific formula (Yemane, 1967) as illustrated below to obtain a trustworthy and representative sample from the target population. The sample frame of the study was less than 10,000, which may be used as an excuse for favoring this scientific formula.

$$n = \frac{N}{1 + N(e)^2} \quad \text{----- (1)}$$

Where;

n = is the sample size,

N= the number of total households in the sample kebele

e =level of precision which is equal to 0.08

1 = constant

The researcher chose to use a 92% confidence interval and an 8% level of precision because the socioeconomic features and agroecology of the study area were homogeneous.

$$\text{Then } n = \frac{3903}{1 + 3903(0.08)^2} = 157$$

Table 1. Distribution of sampled respondents among the selected Kebeles

No	Name of kebeles	Sex household heads	of Total population	Sample population	Percentage
1	Bura	Male	1206	49	
		Female	217	8	
		Subtotal	1423	57	36
2	Bira	Male	1147	47	
		Female	206	8	
		Subtotal	1353	55	35
3	Agelamantogera	Male	955	39	
		Female	172	6	
		Subtotal	1127	45	29
		Total	3903	157	100

Source: Own computation based on each kebele office of agriculture report data; 2020

3.4. Method of data analysis

The data was descriptively analyzed using statistical methods such as means, frequencies, percentages, and standard deviations. A regression model using ordinary least squares (OLS) was used to evaluate the factors affecting the amount of savings in rural households. STATA software and SPSS statistical tools were used to analyze the data. Narrative and descriptive techniques were used to analyze the qualitative information gathered from key informant interviews and focus group discussions.

The analysis methods used for secondary data in this paper involved using narration as a background. This included taking the contents of literature, which were both theoretical and empirical, and matching them with the objectives of the paper as well as in the discussion.

3.4.1. Specification of Ordinary Least Square Regression Model

The determinants impacting households' savings levels (amount) in the formal financial institution were identified by multiple regression analysis utilizing the Ordinary Least Square (OLS) regression model. The amount saved at the formal financial institution is represented by the dependent variable, which is continuous. The multiple linear regression models were described as follows by Greene (2012):

$$Y_i = \beta X_i + u_i \dots \dots \dots (1)$$

Where: Y_i = represents the status of rural household saving amount, X_i = represents a vector of independent variables, β_i = represents a vector of parameters to be estimated and u_i = the error term.

4. Results and Discussion

The analysis of the survey data and the interpretation of the analysis's findings are covered in this chapter. Specifically, descriptive statistics such as frequency distribution, minimum, maximum, mean, and standard deviation were used. The link between the independent and dependent variables was also examined using the OLS regression model.

4.1. Model test

Before taking the selected variables into the logit and OLS, it is necessary to check for the diagnostic tests of the data set based on the assumptions.

Normality test

Based on the result shown in the Table 3 below the Kolmogorov-Smirnov and Shapiro-Wilk test statistic p-values are not significant that the researcher failed to reject the null hypothesis since the p-value is greater than 5%, which says the residual value is normally distributed. Therefore, there is no normality problem in the data used for this study.

Multicollinearity test

It occurs when two or more variables in multiple linear regressions are highly correlated among the continuous variables

and verifies the degree of association among discrete variables. Two measures are often suggested to test the presence of multicollinearity. These are: the variance inflation factor for association among the continuous explanatory variables and the contingency coefficient of dummy variables. The techniques of variance inflation factor were employed to detect the problem of

multicollinearity among the continuous variables.

As a rule of thumb, if the variable exceeds 10, there is a multicollinearity problem. The values displayed in Table 4 below have shown that all the continuous explanatory variables have no serious multicollinearity problem.

Table 2. Variables definition, measurement, and its hypothesis

S. no	Variables	Variable type	Definitions	Measurements	Expected sign
1	Amount of saving	Continuous	Amount of ETB (Ethiopian Birr) that the household head saved at the time of the study	ETB (Ethiopian Birr)	Dependent
2	Sex of the household head	Dummy	The head of the household is male or female	1=Male 0=Female	+ve/-ve
3	Age of the household head	Continuous	The household heads age at the time of the study	Years	+ve/-ve
4	Family size of the households	Continuous	The total number of family members in the household	Number	+ve
5	Marital status of household	Dummy	The household marital status at the time of study	1=Married 0=Single	+ve
6	Education status of household head	Dummy	The household head's education level at the time of study	1=Literate 0=Illiterate	+ve
7	Distance to saving institutions	Categorical	The household access to saving institutions	1=1/2 2=1 3=2 4=above2 hour of wake	-ve
8	Distance to market	Categorical	Household access to the market	1=1/2 2=1 3=2 4=above hour of wake	-ve
9	Annual Income	Continuous	The stock of resources that are held at the time of the study	ETB	+ve
10	Annual Consumption	Continuous	The household's Consumption expenditure	ETB	-ve
11	Access to credit	Dummy	The household credit user or not at the time of study	1=Credit users 0=non user	+ve
12	Farmland size	Continuous	It is the total land size cultivated by the household	Hectare	+ve
13	Dependency ratio	Continuous	Those under age 15 and over 65 as a share of the total household composition	Percentage	-ve
14	Frequency of extension contact	Continuous	The number of contacts with extension agents that the respondent made in the year	Number	+ve
15	Livestock ownership	Continuous	The total number of livestock possessed by the household	TLU	+ve

Table 3. Tests of normality

	Kolomogorov			Shapiro-Wilk		
	Statistic	df	Sig	Statistic	df	sig
Standardized Residual for participation	0.054	157	0.200	0.990	157	0.376
Source:	Model		output		(2020)	

Table 4. Variance Inflation Factor (VIF) for continuous explanatory variables (7 Variables)

Variables	VIF
Age	1.552
Family size	1.398
Dependency ratio	1.085
Income	2.207
Consumption	1.478
Farmland size	1.504
Frequency of extension contact	1.072

Source: Model output (2020)

Heteroscedasticity test

Heteroscedasticity is a situation when the non-constant variance of the error term has occurred and the error variance changes proportionally for any change in the independent variable. In this study, Heteroscedasticity was tested by normality tests like the Breusch-Pagan test. The idea of the Breusch-Pagan test is that the null hypothesis if the data are homoscedasticity and the alternative hypothesis if it is heteroscedasticity. The ANOVA Table 5 Table 5. Heteroscedasticity test

below by taking the square of residual as a dependent variable with the independent results p-value greater than 0.05 supports the null hypothesis then the data is homoscedasticity. Based on the result shown in the table p-values is 0.761^a failed to reject the null hypothesis since the p-value is greater than 5%, which says the data is homoscedasticity. Therefore, there is no heteroscedasticity problem on the data used for this study.

Model	Sum of squares	Df	Mean square	F	Sig
Regression	17.843	14	1.274	0.710	0.761
Residual	251.151	143	1.756		
Total	268.994	157			

Source: Model output (2020)

**Omitted variables test**

The other problem in regression analysis is omitted variables that were dropped for the necessary variables at the time of model analysis. However, there were no omitted variables in the analysis of the model and the result was tested for all variables using the Ramsey regression specification-error test for omitted variables and the result is shown here.

4.2.Factors affecting rural households' savings amounts

Only the saver sample households were used in this section's analysis of the factors influencing household savings amounts in formal financial institutions (Banks, microfinance, and savings and credit cooperatives) using the ordinary least square (OLS) regression model.

The ordinary least square (OLS) regression model was employed to analyze the factors influencing the amount of savings households participated in. The results, displayed in Table 6, indicate an R-squared value of 0.8076, meaning that the explanatory variables in the model accounted for 80.76% of the variation in household amount of savings participation. Moreover, the omnibus test for coefficients' goodness of fit indicates that the overall significance of the model is significant at the 1 percent level (Chi-square value =127.342 and p-value = 0.000). This implies that the model passed the goodness-of-fit test.

Four of the twelve variables were identified as significant factors influencing households' changes in the amount saved in

formal savings (such as banks, microfinance institutions, and savings and credit cooperatives): family size, educational status, livestock ownership, and distance to an institution. The other variables sex, age, marital status, dependency ratio, income, consumption, farmland size, distance to market, access to credit, and frequency of extension contact—did not significantly account for the variations in the dependent variable. Table 6 below presents interpretations of the significant explanatory variables based on this result.

Livestock ownership: At the 1% probability level, there is a positive and statistically significant correlation between household savings' and livestock ownership. This suggests that rural households' savings increase in increments with the number of livestock they own. A unit increment in livestock TLU (measured in Tropical livestock Units, or TLU) increases the level of household savings by 1595.30 birr per year among the saver households. This implies that livestock constitutes a significant monetary asset in rural regions, increasing the amount of money that households can save. The outcomes are similar to Bealu's (2018) findings, which showed that, under the assumption that all other factors stayed the same; a one-unit rise in TLU resulted in an average increase in savings of ETB (Ethiopian Birr) 14.74 (1 USD is equal to 124 ETB).

Family size: Family size was revealed to be another important factor impacting

household savings. The findings showed a significant positive correlation between family size and savings at the 10% probability level. In particular, the amount invested in formal savings institutions rose by ETB 835.50 annually for every extra family member. This implies that families with more members typically save more

money. Since it was thought that larger families may result in lower savings, the direction of this link was surprising.

The outcome, however, can be explained by the fact that a bigger family size typically translates into more people of working age, which raises the household's income and, as a result, its ability to save more.

Table 6. Factors affecting the amount of savings in rural households (OLS) regression model)

Variables	Coef.	Std. Er	T	Sig
Sex	212.470	4650.867	0.046	0.964
Age	-33.107	81.699	-0.405	0.687
Marital status	2997.892	4809.661	0.623	0.536
Family size	835.513	487.074	1.715	0.092*
Dependency Ratio	-3003.789	4800.195	-0.626	0.534
Educational status	-4426.652	1751.553	-2.527	0.014**
Income	-0.021	0.035	-0.589	0.558
Consumption	0.055	0.068	0.807	0.423
Livestock ownership	1595.316	382.444	4.171	0.000***
Farmland size	-823.674	1999.521	-0.412	0.682
Distance to market	-145.794	901.180	-0.162	0.872
Access to credit	1173.164	2178.352	0.539	0.592
Frequency of extension contact	127.209	880.502	0.144	0.886
Distance to institution	-1830.371	776.004	-2.359	0.022**
(Constant)	-1571.638	7657.461	-0.205	0.838

R²=0.8076; number of observation = 71; log likelihood = -20.801208; Prob >chi² = 0.000

Note: *, ** and *** refer to significance at 10% (p<0.1), 5% (p<0.05) and 1% (p<0.01), Respectively.

Source: authors' computation from a survey (2020)

Educational status: It was determined that there was a negative and statistically significant at 5% probability level

correlation between household savings and the educational attainment of household heads. In particular, all sampled households'

annual savings in formal financial institutions fell by ETB 4426.65 when the heads of rural households were literate. Initial expectations were not met by this connection. This is most likely because educated heads of households prioritize their children's education, committing more funds to it and thus saving less. This result is consistent with other research, like Wogene (2015), who discovered that educated household heads typically save less and spend more. Alebachew et al. (2018) found that savings fell by ETB 135.4 annually for every extra year of schooling earned by the household head.

Distance to the financial institution: Rural households' savings levels were shown to be negatively correlated with the household's residence distance to financial institutions; this correlation was statistically significant at the 5% probability level. The result shows that for every one-hour increase in distance from the financial institution, household savings decreased by ETB 1830.37 per annum. Households that live further away from financial institutions typically save less money in formal institutions and prefer to save in kind, according to focus group discussions.

5. Conclusion and Recommendations

The OLS regression model demonstrates that family size, livestock ownership, educational status, and distance to the financial institution all significantly influence the amount of savings of rural households. The study's conclusions led to the following suggestions being sent out.

There is also a significant positive correlation between the number of livestock

(TLU) and the amount of savings. Thus, the saving institutions need to introduce their service to households that have a small number of tropical livestock units. Distance to financial institutions had a negative and significant effect on the amount of savings. Therefore, the concerned stakeholders should establish financial institutions for remote households as well, and improving the road to reduce trekking time, transportation costs and other marketing costs can improve the savings status of rural households. As observed from the study, educational status had a negative influence on the households' amount of savings. Hence, the concerned stakeholders should provide free education materials and scholarships to the students at the school, college, and university levels. So that households can save more rather than spend on their children's education.

Funding

For this study, the authors did not receive any financial support.

Disclosure statement

Any possible conflicts of interest were not disclosed by the authors.

6. References

- Abdu, E., Adem, M., & McMillan, D. (2021). Determinants of financial inclusion in Afar region: Evidence from selected woredas. *Cogent Economics & Finance*, 9(1), 1920149. <https://doi.org/10.1080/23322039.2021.1920149>
- Addis, F. (2019). Rural Farm Household Saving Habit in Ethiopia: Evidence from South West Amhara Growth

- Corridor." *Academic Journal of Economic Studies*, vol. 5, no. 3, Sept. 2019, pp. 112+. Gale.
- Ahmad, K. & Hussein, A. (2010). Saving determinant in Malaysia, *Journal of Ekonomik Malaysia*, 44 (2010), 23-34.
- Alebachew, G. (2018). Determinants of Rural Household Saving: Ethiopia Department of Logistics and Supply Chain Management, Debre Birehan University.
- Aron, H., Nigus, A. & Getnet, B. (2013). Assessment of saving culture among households Ethiopia, *Journal of Economics and Sustainable*, 4(15).
- Bealu, T. (2018). Determinants of savings behavior among rural households, Department of Economics, College of Business and Economics, Hawassa University Ethiopia
- Bollinger, C., Ding, X., & Lugauer, S. (2022). The expansion of higher education and household saving in China. *China Economic Review*, 71, 101736. <https://doi.org/10.1016/j.chieco.2021.101736>
- Dejene, A. (2003). Informal Financial Institutions: The Economic Importance of Iddir, Iqqub, and Loans, Technological Progress in Ethiopian Agriculture, Proceedings of the National Workshop on Technological Progress in Ethiopian Agriculture; November 29-30, 2001. Economics Department, Addis Ababa University, Ethiopia.
- Egwu, P. N., & Nwibo, S. U. (2014). "Determinants of saving capacity of rural women farmers in Ebonyi State, Nigeria", *Global Journal of Agricultural Research*, 2 (1), 1-10.
- Feyissa, G. F., & Gebbisa, M. B. (2021). Choice and Determinants of Saving in Rural Households of Bale zone: The case of Agarfa district, Oromia, South East Ethiopia. *Open Access Library Journal*, 8(2), 1–20. <https://doi.org/10.4236/oalib.1107167>
- Getamesay Bekele and Desta Mebrate. (2024). Determinants of Farmers' Willingness to Pay for Crop Insurance in Ankober Woreda, North Shewa Zone, Amhara Region, Ethiopia. *African Journal of Economics and Business Research (AJEBR)*, Volume 3 Number 2.
- Gina, A. N., Rainier, D. M., & David, A. (2012). "Determinants of saving among low-income individuals in rural Uganda: Evidence from assets Africa", *Journal of Advances in Applied Sociology*, 2 (4), 280-291
- Girma, T., Belay, K., Bezabih, E., & Jema, H. (2013). Determinants of rural household savings in Ethiopia: The case of East Hararghe zone, Oromia regional state". *Journal of Economics and Sustainable Development*, 4 (3).
- Hailu Elias, Mohammed Beshir, and Abule Mehare. (2023). Hailu, Mohammed, and Abule: *Household Saving Behavior in Rural Ethiopia*:

- Challenges and Policy Options. *Ethiopian Journal of Economics*, Vol. 31 No 2.
- Halefom, Y. (2015). Determinants of household saving in Gedeo zone, Southern Ethiopia. *Journal of Economics and Sustainable Development*, 6 (7).
- Hussein, A. (2007). Farm households 'economic behavior in imperfect market structure. Doctoral thesis, Simidishee University of Agriculture.
- Iwegbue, C. M. A., Nwajei, G. E., & Iyoha, E. H. (2008). Heavy metal residues of chicken meat and gizzard and turkey meat consumed in southern Nigeria. *Bulg. J. Vet. Med.*, 11, No 4, 275–280.
- Kibet, I. K., Mutai, B. K., Ouma, S., & Owuor, G. (2009). Determinants of household saving: A case study of smallholder farmers, entrepreneurs and teachers in rural areas of Kenya”, *Journal Of Development And Agricultural Economics*, 1 (7), 137-143.
- Mengesha, T. (2015). Household saving behavior in Jimma zone of Oromia Region, Ethiopia. *Journal of Research in Commerce, It and Management*.
- Michael, K. (2013). Savings habit and use of savings among households in Ga-East municipality, Dissertation submitted to the University of Ghana, Legon in partial fulfillment of the requirement for the award of a master of philosophy development studies degree.
- National Bank of Ethiopia (NBE). (2010). National Bank Annual Report of 2010. National Bank of Ethiopia.
- Nayak, S. (2013). Determinants and pattern of saving behavior in rural households of western Odisha, A thesis submitted for the partial fulfillment of the master degree in development studies. National Institute of Technology, India, 25-28.
- Ndikumana, (1999). Financial determinants of domestic investment in sub-Saharan Africa. Evidence from the panel.
- Njung'e, P.M. (2013). Gender and household savings behavior in Kenya” a research paper submitted in partial fulfillment of the requirements for the degree of Master of Arts in Economics of the University of Nairobi.
- Nwachukwu, O., & Egwaikhide, A. (2007). An error-correction model of the determinants of private saving in Nigeria, A paper presented at the African Economic Society (AES) conference, Cape Town, South Africa.
- Obayelu, A. (2012). Saving behavior of rural households in Kwara State, Nigeria. *African Journal of Basic and Applied Sciences*, 4 (4): 115-123.

- Obi-Egbedi, o., Alawode, o., & Soneye, A. (2014). Savings determinants among rural households in Southwest Nigeria”, *World Rural Observer*, 6(4):6-11.
- Popovici, G. (2012). Understanding the factors affecting savings of Dutch households, Master thesis M.S.C. University of Groningen and “Alexandru Ioan Cuza” University of Iasi.
- Quartey, P., & Blankson, S. (2008). Household savings in Ghana: 'Does Policy Matter' in the economy of Ghana: Analytical perspective on stability, growth and poverty”, James Curry with Publishing Services, Accra New Town, Ghana.
- Raba, G. (2013). The Role of Saving and Loans in the Economic Growth of Ethiopia. Proceedings of the conference on loan and saving: the role in Ethiopian socio-economic development”, Harmaya University, Dire Dawa, Ethiopia.
- Schultz, T. P. (2005). Demographic determinants of savings: Estimating and Interpreting the Aggregate Association in Asia, Discussion Paper No. 1479 January 2005 Yale University and Institute for the Study of Labor, Bon, September 16-17, 2004.
- Sibuea, M. B., & Sibuea, F. A. (2020). The effect of social economic factors on the ability to save farmers: The role of income supply, education supply, experience, age, land area distribution, piece, consumption, and family. *International Journal Suspension Chain Mgt Vol*, 9(3), 1027.
- Strzelecka, A., & Zawadzka, D. (2023). Savings as a source of financial energy on the farm—What determines the accumulation of savings by agricultural households? Model approach. *Energies*, 16(2), 696. <https://doi.org/10.3390/en16020696>
- Tsega, H. & Yemane, M. (2014). Determinants of household saving in Ethiopia: A case of north Gondar zone, Amhara regional state. *International Journal of Development and Economic Sustainability*, 2(4), 37-49.
- Wogene, M. (2015). Determinants and behavior of rural household saving, College of Business and Economics, Hawassa University, Ethiopia.
- Workneh, A. (2014). The determinant of saving behavior of women in Urban Ethiopia, the case of Arba Minch town, *Journal of Developing Country Studies*, 4 (21).
- World Bank. (2022). *National Accounts Data, and OECD National Accounts Data Files*, 2022. (Retrieved July 19, 2023).
- Yemane, T. (1967). *Statistics: An Introductory Analysis*, 2nd Ed., New York: Harper and Row.

