

Determinants of Households Saving: The Case of Shashamene Town, West Arsi Zone, Oromia, Ethiopia

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Abstract The study was conducted to identify factors affecting household savings in Shashamene town. Primary data were collected using questionnaires, and secondary data sources were also collected from written documents and journal articles. The study used a random sampling technique so that each household would have an equal chance of being selected. To collect primary data, a questionnaire and a total of 381 respondents were included in the survey. To attain the objectives of the study, the researcher employed a descriptive method and logit regression model to analyse the determinants of household savings. Thirteen explanatory variables were included in the model's equation. The results of logit regression indicated that seven variables were statistically significant. Sex of the household head, age of the household head, marital status, family size, household tenure, household annual expenditure and access to credit were among the significant factors affecting household savings. From these significant variables: household head sex, age, Marital status and access to credit positively affected household savings, while the remaining variables negatively affected household savings. Two-sample t-tests and chi-squared tests were employed to compare saver and non-saver patients. Hence, efforts should be made to increase the real income of households through well-paying and better job creation by the establishment of micro- and small-scale enterprises, with the increased provision of economic and social infrastructure. Thus, stakeholder interventions to tackle the determinant factors are important measures to be undertaken.

Keywords: Binary Logit Model, Household Saving, Shashamene town, Ethiopia

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1. Introduction

1.1. Background of the Study

Saving has been considered one of the factors affecting growth to lead developing countries to the path of development. Saving is an important factor of household welfare in developing countries. On the other hand, without savings, households have few other mechanisms to smooth out unexpected variations in their income. For individuals and households, savings provide a cushion of security against future contingencies, whereas nation savings provide the funds needed in developmental efforts [1].

Domestic savings in Africa are dominated by household savings that are not sufficiently channeled into productive use [2]. Understanding why and how households save and what determines their saving behavior, particularly that of poorer households, can help identify appropriate policies that increase the number of resources available for development. Improved access, adequacy, and reliability on the part of the financial sector could trigger an increase

in savings held in a financial form through substitution from nonfinancial to financial saving instruments. Moreover, the credit and insurance markets are mostly unproductive and underdeveloped in all poor countries, making saving the prime source of raising the wealth and assets of society [3].

The domestic saving rate in Ethiopia has been very low and has reduced over time. From 1997 to 2010, the average saving rate in low-income countries of sub-Saharan Africa was approximately 9%, while it was approximately 19% for middle-income countries. In the same period, the average saving rate of "fragile" sub-Saharan African states was 11.5%, which was still significantly higher than Ethiopia's rate of 4% [4].

Saving is strongly correlated with economic growth, as suggested by neoclassical growth models, which stressed the importance of saving as an essential factor to the economic growth of a country. Saving in the form of capital formation is important for economic growth, as countries that were able to accumulate a high level of savings and thus high investments were seen to achieve a faster rate of economic growth [5]. Investment is important for rapid and sustainable economic growth,

which in turn is determined by the amount of domestic (national) savings of a country [6].

The saving culture of society, in general, was poor despite the performance improvement of the saving rate from 6 percent in 2006 to 9.5 percent in 2011, which was the poorest saving rate in the world, and even in Sub-Saharan countries, the cause of which is many and diversified. In Ethiopia, the majority of the population is living in the rural sector, where there is limited access to financial institutions. The financial sector was found to be ineffective in reaching rural societies at the same time with lower transaction costs [7].

Savings should affect food security through its impact on access to food through mechanisms that affect a household's ability to purchase and/or produce food [8]. This study was centered on rural households, while this research watched up urban household savings.

Since most of the previous studies focus on rural households, it is important to analyse the saving behavior of households by identifying the determinants of households' decision to save and their extent of saving in urban areas to suggest practical solutions related to problems of saving mobilization by households. This study is different from some previous studies in that; first, it includes household housing tenure and transitional cost as a variable to analyse the households' decision to save and the extent of saving.

Therefore, this study examined household savings in Shashamene town. To the best of our knowledge, no study dealing with determinants of saving has been conducted in the study area. Therefore, this study attempted to fill this gap and to develop solutions for the existing problems in the study area of Shashamene town Oromia, Ethiopia.

2. Methodology

2.1. Description of the Study Area

The study was conducted in Shashamene town, which is one of the oldest and established in 1910G.C. Shashamene town is found in the Oromia regional state, west Arsi zone. Shashamene urban local government, administration of self-rule by the town, was incorporated among the 20 selected towns in Oromia Regional state and reformed in 2005 in accordance with proclamation No. 65/2003. The town is located 250 km south of AddisAbaba along the Trans-African High way. Geographically, it is located at an approximate coordinate of 70 08' 51''N to 70 18' 19''N latitude and 38 0 32' 43''E 380 41' 07''E longitude.

2.2. Description of Study Population

The study population was the household head, and a representative sample was taken from the list of households kept in the kebele office based on housing number.

2.3. Data Type and Source

Primary and secondary data from different sources were employed for this study. To obtain primary information on household savings in the city, empirical data were collected through structured questionnaires. The structured questionnaires were distributed to the heads of the households. The researcher has been a resident of the study area for nearly five years, and this has allowed the author to draw conclusions by supplementing the data with observations and life experience. Moreover, secondary data sources such as books, previous working literature, statistics and unpublished materials were also used.

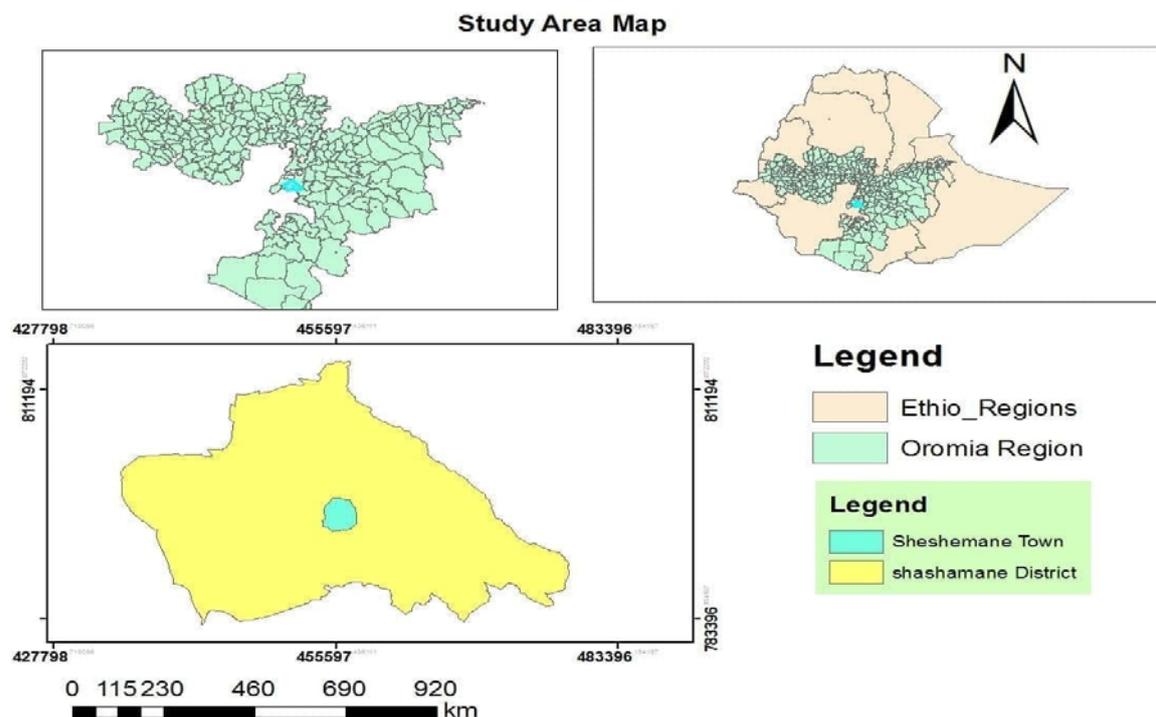


Figure 1. Map of the Study area

2.4. Sampling Size Determination and Sampling Technique

2.4.1. Sample Size

The researcher employed a cross-sectional survey to assess the determinant of household savings in Shashamene town. From the eight kebeles 381, the sample size was determined using a mathematical formula developed by [9].

$$n = \frac{(Z)^2 x (pxq) N}{(e)^2 (N-1) + (Z)^2 x (pxq)} \quad (2.1)$$

$$= \frac{(1.96)^2 x (0.5x0.5) 50,308}{(0.05)^2 (50,308-1) + (1.96)^2 x (0.5x0.5)} = 381$$

Where;

n = Household sample size

N = Total household population size registered in kebele office = 50,308

e = Degree of precision = 0.05% = with the given level of confidence 95%

Z = Confidence level = 1.96

p = 0.5 (sample proportion). q = 0.5 {(1-0.5), i.e., 1-p}.

2.4.2. Sampling Techniques

The sampling technique that was employed by the researcher is a random sampling technique so that each household would have an equal chance of being selected. The town has eight sub-towns: Awasho (kebele 01), Abosto (kebele 02 and 03), Dida Boke (kebele 04), Bulchana (kebele 05), Burka Guddina (kebele 06 and 07), Arada (kebele 08 and 09), Alelu (kebele 10), and Kuyera (11 and 12). Based on this administrative division, eight kebeles were taken for collecting the data. The sampled kebeles were 01, 03, 04, 05, 07, 08, 10 and 12. They were selected randomly to have one kebele from each sub-town. Finally, 381 households were randomly selected from each representative kebele by using probability proportional to size. The sample frame is a registered household list collected through a census by the Population and Vital Statistics Office of the Administration Council with technical support from the Central Statistical Authority, and the list is updated whenever a new household comes to the town as a resident and seeks to obtain any service.

2.5. Methods of Data Collection

The primary and secondary data sources were used to carry out the study. The sources of the primary data are cross-sectional data that were collected from the sample to represent the population. First the questionnaire was prepared. The questionnaire was retested on respondents in similar communities. This is done purposely for clarity, acceptability, flow and reduction of repetition. Based on this, minor modifications were made, and a survey was undertaken. The researcher used interviewers (the researcher and the recruited interviewer) for the collection of data. The interviewer who was recruited was elected from the study area. The interviewer was selected based on two criteria: education and experience. The enumerator was trained for two days by the principal researcher on the

administration of the questionnaire and the data collection process. The questionnaire was designed to provide statistical information on households' demographic composition, income and expenditure, consumption and other important socioeconomic information.

In this survey, the question was distributed to the head of the household, and the responses, therefore, represent an individual's evaluation of the poverty of the entire household. The survey was conducted for thirty consecutive days. For those respondents who did not read and write, the questionnaire items were read, and their answers were immediately recorded by the enumerators. The head of the household can provide detailed information about the socioeconomic condition of the households, and other members of the households were possible when the head of household was not present. Furthermore, households are an important area of public policy and local economic and social development research.

2.6. Methods of Data Analysis and Interpretation

Basically, the analysis and presentation of the study is quantitative. In the first part, the research used descriptive statistics (percentages, means, standard deviations, chi-squares, significance intervals, test and t-test). These were analysed and described quantitatively by making use of STATA software version 13 and tables. In the second part of econometric issues, more specifically, *the binary logit* model was adopted. The logit model is preferable to others to differentiate savers from non-savers. In this part, STATA 13 software was employed to determine the odds and odds ratios of the determinants and to test the statistically significant relationships between the determinants and the dependent variable of savings.

2.7. Econometrics Model Specification

When the dependent variable in regression is binary, the analysis could be conducted by using linear probability and index models, *i.e.*, logit or probit. However, the result of the linear probability model may generate predicted values less than zero or greater than one, which violates the basic principles of probability. However, the index model's logit or probit models generate predicted values between 0 and 1; they fit well to the nonlinear relationship between the probabilities and the explanatory variable. Each model has its own strengths and weaknesses, but in this study, the logit model is preferable to the probit model because it has more plausible features, such as simplicity. The equation of the logit is very simple, and inverse linearizing transformation for the logit model is directly interpretable as log-odds, while the inverse transformation probit model does not have a direct interpretation [10].

2.7.1. Binary Logit Model

The choice of the logit model is premised on the fact that ordinary least squares assume a continuous dependent variable, while in the case of household saving, the response is a binomial process taking the value 1 for saving and 0 for non-saving. The parameters of this model were estimated by using maximum likelihood estimation

rather than movement estimation, which relies on the OLS regression technique. The logit method gives parameter estimates that are asymptotically efficient and consistent. Indeed, the logit approach is known to produce statistically sound results [10]. The probability of saving is specified as the value of the cumulative distribution function, which is specified as a function of the explanatory variables.

$$\Pr = \frac{e^{\beta_0 + \beta_1 X_1}}{1 + e^{\beta_0 + \beta_1 X_1}} \text{ or equivalently } \Pr(\text{event}) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_1)}} \quad (2.2)$$

where β_0 and β_1 are coefficients to be estimated from the data and X_i is the independent variable e is the base of the natural logarithm.

For ease of exposition, the model can be written as (for more than one independent variable)

$$\Pr(\text{even}) = \frac{e^{z_i}}{1 + e^{z_i}} \text{ or equivalently } \Pr(\text{event}) = \frac{1}{1 + e^{-z_i}} \quad (2.3)$$

This particular study addressed the probability of saving or not saving, and this expression was expressed in mathematical form as follows:

The probability of saving (an event occurring) is expressed as follows:

$$\Pr\left(y = \frac{1}{x}\right) = \Pr(Y = 1) = \frac{e^{z_i}}{1 + e^{z_i}} = \frac{1}{1 + e^{-z_i}} \quad (2.4)$$

$$z = \beta_0 + \beta_1 x_1 + \beta_2 x_2 \pm \dots \mp \beta_k x_k + \varepsilon \quad (2.5)$$

Note: - the error term ε also follows a logistic distribution.

For a non-saving cumulative logistic distribution, representing the probability is just $(1-p_i)$, i.e.

$$1 - \Pr\left(y = \frac{1}{x}\right) = \frac{e^{-z_i}}{1 + e^{-z_i}} \quad (2.6)$$

Therefore, by dividing equation (2.4) by equation (2.6), we can obtain the odds ratio in the binary response, which is as stated below:

$$\frac{\Pr\left(y = \frac{1}{x}\right)}{1 - \Pr\left(y = \frac{1}{x}\right)} = \frac{P(Y = 1)}{1 - P(Y = 1)} = \frac{\frac{1}{1 + e^{-z_i}}}{\frac{e^{-z_i}}{1 + e^{-z_i}}} = \frac{1}{e^{-z_i}} = e^{z_i} \quad (2.7)$$

When we take the natural logarithm of the odds ratio of equation (2.7), we will result in the logit model, as we can see below:

$$Li = \ln((p(Y = 1))) = Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} \quad (2.8)$$

Based on the above justification, the researcher specified the logit model for probability of saving or not-saving of a household and determinants of saving as follows: -

$$S_i = \beta_0 + \beta_1 \text{Sex} + \beta_2 \text{Age} + \beta_3 \text{Edu} + \beta_4 \text{Mrs} + \beta_5 \text{FS} + \beta_6 \text{HouTen} + \beta_7 \text{MktDce} + \beta_8 \text{DistFin} + \beta_9 \text{AnInc} + \beta_{10} \text{AnExp} + \beta_{11} \text{AcCr} + \beta_{12} r + \beta_{13} \text{TrCo} + \varepsilon_i \quad (2.9)$$

Therefore, $S_i = 1$ if the household is saving and $=0$ if the household is not saving, β_i is a regression parameter, and ε is the error term. The explanatory variables will be defined under the variable description.

3. Results and Discussion

3.1. Descriptive Analysis

This part of the study addresses the results of the descriptive analysis and binary logit model regression results of the determinants of household savings. Descriptive analysis was employed to explain the relationship between independent variables and saving behavior of households and to identify major saver and non-saver household characteristics. In addition, logistic regression analysis was used to identify the major determinants of household saving behavior. Based on the data collected, from the total population of the survey, 170 (44.62%) were non-savers, and the remaining 211 (55.38%) were savers.

Table 1. Descriptive statistics of dummy variables

Variables	Category	Savers		Nonsavers		P-Value	Chi square
		Frequency	Percent	Frequency	percent		
Sex of households	Male	147	69.67	78	45.88	0.058	0.8083**
	Female	64	30.33	92	54.12		
	Total	211	100	170	100		
Marital Status	Married	168	79.62	43	25.29	0.000	2.34***
	Not married	35	16.59	68	40		
	Divorced	7	3.32	39	22.94		
Access to credit	Widowed	1	0.47	20	11.77	0.000	49.06***
	Total	211	100	170	100		
	Yes	146	69.19	57	33.53		
House Tenure	No	65	30.81	113	66.47	0.002	3.02***
	Ownership	38	22.35	130	61.61		
	Rented (from Private)	110	64.71	75	35.55		
	Rented (from kebele)	22	12.94	6	2.84		
	Total	170	100	211	100		

Note: ***, **, *, represent a level of significance at 1%, 5% and 10%, respectively.

Sex and Saving status: Due to socioeconomic affects, the number of women headed non-saver households is greater than that of their male counterparts. Many studies reason out many factors for the case. Female-headed households have less opportunity in monetary income than households headed by men. Women have less access to productive capital, assets, paid labor, education and decision making. They are discriminated against in political, social and economic decision-making processes. These all makes women to save less. The respondents of this study were 38.32% female household heads, and 61.68% male household heads were included in the survey. Within female-headed households, 54.12% of them were found to be non-savers, and 30.33% were savers. Of the total male-headed households, only 45.88% of the males headed were non-savers, and the remaining 69.67% were savers. The majority of non-savers are female headed households. $\chi^2=0.8083$ with a p-value of 0.058 was significant at the 1% level.

Marital status of the household and saving status: Marital status of the household head is an important constituent of the demographic variables. However, from different angles, there is a positive and vice versa relation between saving and marital status of household household head analysis. Economic theory and most empirical literature support the notion that the chance of falling into non-saving increases as one is married. This is because when people get married, household size will increase as new children are born and expenditures increase, which in turn leads to a decrease in savings. On the other hand, as one is married, the probability of falling into non-saving decreases, as there are more labour forces in the household and unity. Separately, from Table 1, we demonstrate that the probability of being non-saver is higher among married households (68, 40%), which may be because if the household head is married, there will be high consumption, which results in high household expenditures and lower savings. The $\chi^2(1) = 2.34$ A P-value= 0.000 shows significance at the 99% confidence interval, which indicates that marital status of household is one of the determinants of savings in the study area.

Access to credit services and saving status: Credit serves to fill the financial demand of households to participate in businesses; it has the power to increase income. In today's competitive and tiresome real world, it needs a household to have access to credit. By and large, whether to invest in small businesses and/or large investments, there should be a prudent source of finance for households. Specifically, in developing countries, financial institutions (banks and saving and credit institutions) should play a vital role in providing credit for households. This indicator is of dominant importance because it is one-way households accumulate wealth, which generates income flows. Accordingly, in the surveyed area, out of the total respondents, 203 (53.28%) households had access to credit, and 178 (46.72%) had no access to credit. From the respondents, households that had no access to credit were found to be negatively and significantly correlated with saving. As households' inaccessibility to credit increases, the probability of households saving decreases. The $\chi^2 = 49.06$ P-value=0.000 shows significance at the 99% confidence interval, which indicates that access of the households to

credit is the bolded determinant of saving in the study areas.

House Condition and Saving Status: The ownership of houses in urban areas is truly an important indicator of saving in most developing countries. This indicator is of dominant importance because it is household wealth, which generates income flows. Of the total respondents, 168 (44.09%) had their own house, and 213 (55.91%) had no house. Households that are not ownership of house are found to be negatively significantly correlated with saving. As households not own houses increase, the cost paid to the house increases, leading to expenditure increases, income decreases and savings decreases. The $\chi^2(1) = 3.02 > P\text{-value} = 0.002$ shows significance at 99 confidence intervals, which indicates that the housing condition of households is the determinant of saving in the study areas.

Age and Saving Status: The table below (Table 2) shows the average age of Savers is 43.8 and that of non-savers 51.3 and the minimum and maximum years of the respondent were 24 and 83, respectively. Out of the total respondents, 51 (13.4%) of the sample respondents were economically unproductive, and 330 (86.6%) were economically active households. The survey data show that the age of households was dominated by economically productive households in the study area. The productive age group and savings have a positive relationship; as the productive age group increases, the probability of savings increases. The t-test shows $t = 6.1160$ significant at the 1% level of significance.

Household Size and Saving Status: In developing countries, parents increase children to increase the probability that they receive economic support when they become old. Child labor is also the usual practice to generate income in such countries. The presence of high infant mortality rates, particularly among the poor, also tends to cause excess replacement births. This leads to an increase in household size and then pushes families not to save. The minimum and maximum household sizes of the study area were 0 and 16, respectively. The average household size was (4.74) approximately six (5) members per household. As shown in Table 2 below, the share of non-saver households within the category of household size five and below was 25.89% of the total non-savers. Households that have a household size above the average family size account for 74.11% of the total non-savers. Therefore, the majority of households in the study area that had larger than average family size were non-savers. This shows that household family size and non-saving have a positive relationship. As household family size increases, the probability of not saving increases. The statistical analysis showed a significant difference in means of family size between non-saver and saver households, which is 5.71 for non-saver households and 3.77 for saver households. The t-test shows $t = -0.2039$ and at the 1% significance level.

Households' expenditure and saving status: The households' expenditure starts from birr (200) minimum to birr (14,000) maximum per month. Out of this mean expenditure of non-savers is birr 1055.282 and saver households, 3864.493 birr per month. There are substantial differences between the expenditures of the non-savers and savers in the study area. The t-test-values=

14.6009 and significant at the 5% level of significance. This indicates that there is a significant difference between households' expenditures of non-savers and savers, which shows that the expenditures of some households are very high due to support from relatives and highly from their children living outside Ethiopia. The implication here is that the difference (2809.211) can be either saved/used for other purposes by the household.

3.2. Econometric Analysis

As introduced in the model specification section, a logit model was employed to analyse determinants of saving. The suitability of the chosen model for econometric analysis very much depends on how much it predicts from the actual observation or what percent of the actual observation is truly predicted by the model. Therefore, to assess whether the model fits the data, the researcher used different tests. To decide whether to use the logit or probit model, both logit and probit regression models were compared by the researcher using the Akaike information criterion (AIC) and the Bayesian information criterion (BIC). Accordingly, (AIC) for logit=167.9196, which is < (AIC) for probit=170.315. In addition, (BIC) for logit=227.0615 which is < (BIC) for probit=229.4569. The model with less (AIC) and (BIC) is preferable.

In addition to descriptive analysis, a logistic regression model was employed to identify the determinants of household saving in the study area. Before regressing variables included in the model were tested for the existence of multicollinearity, if any. The contingency coefficient and variance inflation factor were used for the multicollinearity test of discrete and continuous variables,

respectively. The contingency coefficient value ranges between 0 and 1, and as a rule of thumb variable with a contingency coefficient below 0.75 shows a weak association, and a value above it indicates a strong association of variables. The contingency coefficient for the discrete variables included in the model was less than 0.75, which did not suggest multicollinearity to be a serious concern. As a common practice, continuous variables with variance inflation factors of less than 10 are believed to have no multicollinearity, and those with VIFs above 10 are subjected to the problem and should be excluded from the model [10].

To identify the major determinants of household saving, the dependent variable was regressed against various independent variables. The regression table revealed that the binary logistic model managed to predict **72%** of the responses correctly. Apart from percent correct predictions, the Chi-square model has "n" degrees of freedom. Accordingly, p-values associated with a chi-square value of 0.0000 degrees of freedom. The indicates that the model as a whole is statistically significant, which shows that the model fits the data well.

Robust logistic regression was used to control for heteroskedasticity in binary outcome models. Heteroskedasticity in binary outcome models will affect both the "Betas" and their standard errors. In this particular study, both regressions, i.e., earlier regression and robust logistic regression, have the same result. None of the coefficients changed, but the standard errors and Z values were slightly different. Had there been more Heteroskedasticity in these data, would have probably seen bigger change. Therefore, this model is free from the heteroskedasticity problem.

Table 2. Descriptive statistics of continuous variables

Variable	Total sample		Non-Savers		Savers		P-value	t-test
	Mean	SD	Mean	SD	Mean	Sd		
Age	47.15	12.438	51.3	14.4913	43.81	9.2629	0.000	6.1160***
Household size	4.74	2.836	3.77	1.62	5.71	2.70	0.060	0.2039*
Annual expenditure	2611.039	119.39	1055.282	51.01031	3864.493	167.6966	0.051	14.6009*

Source: Own computation based on survey data (2020).

Table 3. Results of Model Goodness of fit test

Model	Obs	ll (null)	ll(model)	Df	AIC	BIC
Probit model regression	381	-208.901	-37.5845	11	170.315	229.4569
Logit model regression	381	-208.901	-37.738	11	167.9196	227.0615

Table 4.

Logit regression			Number of observations =	381
LR chi2 (13) =	374.48			
Prob> chi2 =	0.0000			
Log likelihood =	-74.637528		Pseudo R2 =	0.7228
Saving	Coef.	Std. Err.	dy/dx (Marginal effect)	
Sex of the respondent	.8662059	.08205 **	0.094	
Age of the respondent	.1088455	.00467 *	0.010	
Educational status	-.4277881	.05698 **	-0.083	
Marital status	-1.360439	.07567 *	0.120	
Family size in numbers	-.153878	.01461 **	-0.017	
House tener	-1.415561	.08834 *	0.116	
Distance to market	-.082965	.08177	0.005	
Distance to financial institutions	-.0674405	.03662	-0.0074	
Annual income	-.0004195	.00012	0.000032	
Annual expenditure	-.0016684	.00016 **	-0.0001	
Access to Credit Services	1.736456	.09226 *	0.1617	
Interest rate	-25.93703	.43212	-2.523	
Tc	-.0939753	.05211	-0.0028	

Source: Own computation (2020) * significant at 1%, and ** significant at 5%.

The regression results revealed above show that variables that are positively related to the probability of saving are household head sex, age, marital status, household education and access to credit. The variables that are negatively related to the probability of household saving are family size, house tenure and annual expenditure. In the table above, out of 13 independent variables, 7 variables, household sex, household age, family size, marital status, credit access, house tenure and annual expenditure, have a significant effect on household savings at 1 percent and 5 percent. The negative values of the explanatory variables in the table indicate that a unit change in the independent variable leads to a decrease in the probability of household savings.

3.3. Marginal Effect for Logit Regression

Since the logit model we employed for regression analysis is not linear, the marginal effect of each independent variable on the dependent variable is not constant but depends on the value of the independent variables. Thus, marginal effects can be a means for summarizing how change in a response is related to change in a covariate. For categorical variables, the effects of discrete changes are computed, i.e., the marginal effects for categorical variables show how $P(Y = 1)$ is predicted to change as X_k changes from 0 to 1 holding all other X s constant.

For continuous independent variables, the marginal effect measures the instantaneous rate of change, i.e., we compute them for a variable while all other variables are held constant. This means in this study a change in the probability of household savings with a unit change in a continuous independent variable. Thus, opposed to the linear regression case, it is not possible to interpret the estimated parameters as the effect of the independent variable up on saving. However, it is possible to compute the marginal effects at some interesting values of the significant explanatory variables.

Examination of the Logit Maximum-Likelihood estimates demonstrates that the variable household head sex, age, marital status, household education and access to credit. They are positively related to the probability of being poor. On the other hand, variables that are negatively related to the probability of household saving are family size; house tenure and annual expenditure are inversely correlated with the probability of being saving.

Thirteen explanatory variables were regressed, and seven of the variables were found to be statistically significant: at 1 percent and at 5 percent. The remaining variables are not statistically significant and rather inconclusive.

The explanation of the logit results based on the coefficient of the model indicates by what factor the dependent variable changes whenever a unit change occurs in independent variables. The analysis is useful, first, to verify the relative role of the various factors in determining saving status and, second, to assess the potential impact that policy-induced changes in these factors are likely to have on the probability of being saver, holding other things constant.

By and large, the combined effect and role of household composition variables such as household size, number of children in a household, education level, and age should be treated carefully in analysing determinates of household

saving and to reach a better conclusion. Therefore, further detailed research is needed in this area.

Household family size has a significant negative coefficient. The larger the household size, the lower the probability of being a saver. The reason is that either many of them are not working (many children and elderly) or they are being remunerated compensated by which, in the totality, leads to an increase in the per capita expenditure. As the number of families in the household increased by one, keeping all other variables constant, savings decreased by a factor of 0.017. This assures that the addition of a household member above the average family size pushes up the household to the non-saver significantly in the study area.

The marital status of households also shows a statistically positive significant result, implying that as households get married, keeping other variables constant, the odds and odds ratio of being saver increases by a factor of 0.12. This means that when people get married, the probability of saving increases. The household can use the advantages of economies of scale, and marriage can bring an additional workforce that helps to increase household income, which in turn increases the household's probability of saving.

The coefficient variable of not owning a house has a negative and statistically significant coefficient. If households do not have their own house, they are obliged to spend additional costs for housing rent, which in turn affects the income of a household. As a result, the saving will diminish. As households not owning a house increase by one, other things remain constant, and the probability of saving will decrease by 0.116 factors.

The variable annual expenditure of households reveals a significant determinant of the probability of a household being saver. The variable is a negative relationship with saving and significant at the 5% level of significance. From the model, a unit increase in the annual expenditure of households, the values of other variables remain constant, and the probability of non-saver increases by a factor of 0.0006.

4. Conclusions and Recommendations

4.1. Conclusions

The objective of the study was to assess determinants of household saving and its relationships with urban saving in Shashamene town. Both primary and secondary sources were used to carry out the study. A total of 381 household heads were randomly selected. Systematic random sampling was used to select households from the 8 sub-towns based on kebeles on registration.

The research found that out of 381 surveyed households, 170 (44.62%) were non-savers. Variables that we attempted to analyse household savings in terms of household specificity were selected and analysed. These were sex of the households, age of the households, education level of the households, marital status of the households, family size of the households, housing tenure, market distance, distance from the financial institutions, annual income of the households, annual expenditure of the households, access to credit, interest rate and transaction costs. These variables were analysed through descriptive statistics and

the econometrics model. A logit model was used to compute the relationship between some selected determinants and saving.

Descriptive part analysis was performed using STATA13.1 software version. In these parts, categorical responses were treated via percentages, chi-squares, and significance levels with the help of tables. Continuous variables were analysed by means, standard deviations, and t-tests. In the econometric part, the study employed the logit model. The coefficient that tells by what factor does the dependent variable change given a unit change of the explanatory variable was also discussed. Based on the descriptive and econometric analysis (logit model), the following results were obtained. Educational attainment of the household head is found to be the most important variable related to urban saving.

The average household size of the study area was found to be (5.74) six people per household. The number of poor households with a household size of six and below was very small, but households with a household size above six accounted for a high share, which was 74.07% of the total non-savers. The model estimation of the variable household size has been negatively and significantly correlated with saving. This has a clear effect for the residents of Shashamene with large household size pushes into the non-savers more easily than those who have average and small family size.

Annual expenditure and probability of being saver are found to be significantly negative correlates. When the annual expenditure of a household increases, the probability of household savings diminishes significantly. Although expenditure only is not a measure of saving, the study found households that increase their expenditure were also in shortage with other resources like a house, education attainment, and other infrastructures.

The household that does not own a house has a negatively and statistically significant coefficient. If households do not have their own house, they are obliged to spend additional costs for housing rent, which in turn affects the income of a household. As a result, the saving will diminish. Therefore, encouraging and supporting households to own houses is another remedial measure to increase and alleviate urban household non-saving.

In general, one cause of non-saving may become a consequence. This means that one variable may be a cause and consequence simultaneously. Critical identification of the variables is important for direct and concrete solutions. Therefore, urban saving can be alleviated through multiple strategies that affect the saving situation of households in a different direction. Additionally, this research is cross-sectional and can provide the results of a one-time survey. However, people's well-being changes over time, and hence, there is a tendency to move in and out of saver over time. If a longitudinal survey is undertaken, the result would reflect a better measure of saving.

4.2. Recommendations

Based on the above findings, the following recommendations of the study stand out:

Since the household's annual expenditure is one of the determinants that is positive and significant in the study area, ways of reducing the household's expenditure should

be introduced. From this side, both the community members and the government should have the joint effort and responsibility to find possible remedies. One way of doing this is through expanding the entrepreneurship skill of the local communities. Moreover, the expansion of micro- and small-scale enterprises through interconnecting them with the micro finance institution, which advises households to minimize their expenditure and maximize savings in the town, could be used as one mechanism.

Household size was negatively and significantly correlated with saving in Shashamene, as the study shows. This has a clear implication for the residents of the town in those households with large size will fall into non-saver sections easily than those who have not. Thus, to minimize such problems, family plans and awareness education for couples are provided by the concerned bodies in collaboration with religious leaders. In this regard, the town's health service should play a great role.

Maximization efforts should be made through broad-based planning to increase the real incomes of residents. This can be done through secure employment creation. The principal route out of maximizing saving is sustainable work that generates better income. There is a need to develop and promote micro- and small-scale enterprises relating to households' skills, household age, and market opportunities. However, it is impossible to build enterprises without access to sufficient credit. Therefore, efforts should be made for households to acquire credit based on the real situation of society, such as religious affiliation to credit with interest and others. Hence, microfinance activities will go hand in hand with entrepreneurship, enabling households to borrow for production purposes, save and build their assets, and as a result, non-saving will be reduced.

Households use their house to perform different production and service activities that generate income. Therefore, encouraging and supporting households to have their own house should be another remedial measure to maximize urban household savings. This can be in the form of free and fast land delivery for housing construction, affordable credit facilities, and building condominium houses. This requires the companies' efforts of governments; city administration and microfinance institutions should be needed.

Finally, all these factors will help to increase savings, if not completely eradicate, of non-savers in the town. Therefore, a joint effort is needed at every level and kind of activities from the government, nongovernmental organizations, community-based organizations, researchers, the households themselves, and any stakeholder(s) of interest.

Conflict of Interest

This work is our original work; therefore, there is no conflict of interest as far as this research is concerned.

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