Determinants of Households Saving Habit in Urban Oromia: Evidence from Asella Town

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Abstract

Low level of household saving habit and its determinants demand public attentions for effective policy interventions. This study was *conducted to investigate determinants of household saving in urban Oromia with specific reference to Assela Town. To this end, primary data was collected from household using multistage sampling. First, based on strata of whole kebele's (center and periphery) formed, four (two from center and two from peripheries), out of eight kebeles were selected purposively. Then, using simple random sampling household were proportionately selected from sex of household head -based strata formed for selected kebele. Accordingly, 394 households of which 286(72.6%) and 108 (27.4%) were male and female respectively were selected. 240 (60.9%) of the respondents were having saving habit and the other were not. Both descriptive and econometric methods were employed to analyze data. Binary logit model was utilized to identify determinants of households saving behavior. Three interrelated models (log odds, odds ratio, and predicted probability) were estimated. The results of the descriptive analyses shows that 61% of sample households practiced saving and the common challenges were low income, preference of investment in kind and other business, high expenditure. Besides, econometric analyses shows that 15 of 17 stated variables were found to be statistically significant in affecting probability of household saving. Specifically, average income has positive, but age and dependency ratio were found to be negative effect on probability of household saving. Furthermore, being married, widowed, or divorced, were higher probability of saving than the single one. Besides, improvements in level of education to certificate, diploma or degree and above have higher probability than illiterate once. Being self-employed household were more savers than government and private sector employee. Being male, alcohol user, being non house owner have lower tendency of household saving than their counterpart. The study recommended that concerned bodies should design capacity building program through creating awareness on saving, financial planning and budgeting.*

Key words: *Urban, Household Saving, Determinants of saving, Logit, 1. Introduction*

1. Background of the study

Household saving is a driving force of economic success and stability, a tool to break vicious circle of poverty, means of providing an insurance against economic and social shocks, strategy of improving the well-being of individuals, and potential to finance investments (Todaro,M.P,&Smith,S., 2012). Besides, savings at the household level are important for the welfare of family members in the course of economic development as a means to smooth their consumption, increases the possibility to finance productive investments in human and physical capital, insurance against old age support when members become non-earners ((Girma, T., et al, 2013; Kifle, 2012).

Despite such importance, just like other developing countries household saving in Ethiopia is very low (Aron, H. Nigus, A. &Getnet, B., 2013; Abebe, 2017) . Improving the household saving is one of the areas towards which public policies and strategies have been directed. Following those polices successive structural plans such as Plan for Accelerated Growth and Sustainable Development, Growth and Transformation Plan I and II were designed and implemented in Ethiopia with due attentions given to household saving and its mobilization. But results of the interventions were not as expected and rate of saving is still low as per Sub Saharan Africa (Tsega, H. & Yemane, M., 2014; Yonas A. and Gebrekrstos G., 2016; Halefom, 2015). Thus, analysis of habit and determinants of household saving play key role in policy making and development interventions. Factors responsible for saving show considerable variation across regions and so one cannot be sure whether the results of a given region may be applicable to another region or country of interest (Todaro,M.P,&Smith,S., 2012). Accordingly, factors responsible for saving also differ for urban and rural household as their livelihood differ (Zegay, 2018; Obayelu, 2012; Abebe, 2017).

Few studies have been conducted on household saving habit, pattern, and determinants in urban Ethiopia. Moreover, there is no consistency on factors

affecting household saving in urban centers. Urban households saving is affected by institutional (such as lack of access to financial services, lack of incentive to save, low interest rate, high inflation), socio-demographic (age, sex, marital status etc.) and economic factors(income, employment type etc) (Halefom, 2015; Michael, 2013; Tsega, H. & Yemane, M., 2014; Aron, H. Nigus, A. &Getnet, B., 2013). In addition, study conducted by Abebe (2017) found family size, age, sex, wealth ownership and cultural issues as major factors for household saving. Mengasha (2015) identified financial literacy, parental socialization, family size, salary, age, sex, occupation, educational level, peer influence and self-control are among factors affecting saving behavior.

Besides, the results of study conducted in Uganda based on cross sectional household data show that household income, education of household head, spouse education, gender, age, and household location (living in urban areas) are factors positively and significantly influencing household saving. On the other hand, household size, marital status, age square of household head and regional differences negatively and significantly influence household saving (Sawuya, 2018). Besides, extensive literature point out that in agriculture dominated economy like Ethiopia shocks in the agricultural sector affect rural household directly and urban households indirectly. For instance, rural households are prone to adverse shocks such as bad weather conditions and climatic risk, economic fluctuations which directly affect cost of living, affect urban household expenditure as cost of food items rise (Yonas A. and Gebrekrstos G., 2016; Fasil ,E. &Nigit ,M., 2018; Kokeny, 2015; Girma, T., et al, 2013).

Besides, studies so far conducted employed different methodological approaches to analyze motives and factors affecting households' saving behavior. For instance, Yonas and Gebrekrstos (2016) employed probit and tobit model in analyzing utilization of and factors affecting individuals Saving in Ethiopia: The Case of Dire Dawa. Sawuya (2018) using Micro analysis of the determinants of household saving: Empirical evidence from Uganda used OLS estimation. Haile et al.(2017) on their study of saving habits and its determinants in Amhara national Regional State, Ethiopia used

logistic regression with forward likelihood selection method to identify the determining factors associated with saving status. The Heckman's selection model was used by Asare et al. (2018).Girma et al. (2013) applied single equation Tobit model on household survey data to analyses determinants of household saving in Ethiopia. Bogale et al. (2017) in their study of the determinants of saving behavior of household in Ethiopia: The case of Benishangul Gumuz regional state employed double hurdle model. Such difference might have leads to difference in results. Hence, the study compares result from logistic regression with other models and see whether there is difference or not. Accordingly, we adopt methodology best estimate the relationship.

From the above discussion we see that there is no uniformity on factor affecting household in urban centers. Furthermore, the effect of these factors varies in time and space depending on specific situations. Besides, methodology used also varies with no agreement or consensus on which model to be the best. Identifying and prioritizing factors responsible for household saving can help concerned body in designing appropriate policies relevant to specific area to mobilize savings. Thus, this study aim at identify determinants of household savings in urban Ethiopia specifically, the case of Assela town. The specific objectives of the study are:

- To assess the saving behavior of households in the study area
- To identify factors affecting households saving behaviors in Assela town

2. Research Methodology

2.1 Research Design and Data Source

The study used descriptive survey method with quantitative and qualitative approaches to extract the information desired. To this end, both primary and secondary sources of data were used in which major focus was given to primary source. Relevant secondary data were also collected from both published and unpublished materials(working papers and conference proceedings, journals, official reports of organization and other academic papers on the topic) to fill gap in primary source.

2.2. Tools of data collections

Data from primary source was collected using structured questionnaires which include both open and closed ended questionnaires. Closed ended is used to restrict and direct questions to wards objectives and variables, and open-ended questionnaires is to extract additional information. Pilot study on five respondents was conducted to check the validity, relevance, reliability and appropriateness of the questionnaire. In addition, interviews checklist was used to extract more information from experts, managers and front line workers in financial institutions such as banks and microfinance.

2.4. Method of Sampling and Sample Size Determination

Unit of analysis was collected using multi stage sampling: stratified, purposive sampling, stratified and then simple random sampling one after the other. First, total of 8 Kebeles in Assela town were stratified in to two as periphery and center based on business type. Four kebeles with trade and patty activities were categorized as central kebele's and the rest 4 were peripherial Kebele's with semi urban agriculture and residence. Then, two kebeles from each strata were selected purposively. Accordingly; Hanku, Arada, Buseta and Walkessa were selected. Secondly, based on sample frame collected from selected kebele's , population was stratified into two groups based on sex of household head. Third**,** using simple random sampling households were selected from each substratum.

Following Yemane (1967) sample size is determined by $n = \frac{N}{1 + N(e)^2}$

where ; N= The number of total households in the selected kebeles, n = Sample size , e = Level of precision which is equal to 0.05 or margin of error 5% with confidence level 95% is taken. Accordingly, from total population of 22,885 household 394 were selected. That is,

$$n = \frac{N}{1 + N(e)^2} = \frac{22,885}{1 + 22,885(0.05)^2} = 394$$

2.5. Method of Data Analysis

Both descriptive and econometrics methods of data analysis were employed. Descriptive statistics using central tendency (mean, median and mode), measure of dispersion (variance, standard deviation, variance… etc.), were used to help us see the existing situation. To better understand factors affecting household saving econometrics approach was also employed along with descriptive statistics. For the study index model more specifically binary logit model was used. Because dependent variable is binary dichotomous one in which we assess whether a household has saving habit or not (saving or not-saving), the index model generates predicted values between 0 and 1 which fit well to the nonlinear relationship between the probabilities and explanatory variables ((Gujarati, 2004; Maddala, 1992; Maddala.G.S, 1983; Doughrety, 2001). Following Maddala (1983), logit model is specified as:

$$P_i = \Lambda(z) = \frac{e^z}{1+e^z} = \frac{1}{1+e^{-z}} = \frac{\exp^z}{1+\exp^z}$$

Where, P_i is an estimated probability value of saving for the observed household, Λ is the standard cumulative logistic probability distribution e^z. Accordingly, the log-likelihood function for logit is

$$L_i = \ln\left[\frac{P_i}{1-P_i}\right] = Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_k X_k$$

$$L_i = Log\left[\frac{P(Y=1)}{1-P(y=1)}\right] = \sum_{k=1}^{K} \beta_k X_k$$ Where L_i is called the logit score or index.

Then the latent model is

$$Y^* = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_k X_k + U_i \quad (2)$$

Then Y is an indicator of whether this latent variable is positive or not. That is;

$$Y = 1 \text{ if } Y^* > 0 \quad \text{and} \quad Y = 0 \text{ if } Y^* \leq 0$$

Y_i is equal to one denotes if household has certain habit of saving and have willingness to save and zero if not. Explanatory variables include gender (Gen), age(Ag), marital status (MS), family size (FS), educational Status (Educ), income(income), average monthly income(avgincom), additional income(addincom), occupation (Occ), government employ(gov), private employ(priv), dependency ratio (DPR), house ownership(houseo), alcohol use(alco). Therefore, the specified model is:

$$L_i = \ln\left[\frac{P_i}{1-P_i}\right] = Z_i = \beta_0 + \beta_1 \text{Gen} + \beta_2 \text{Age} + \beta_3 \text{MS} + \beta_4 \text{FS} + \beta_5 \text{Educ} + \beta_6 \text{DPR} + \beta_7 \text{avgincome} + \beta_8 \text{Occ} + \beta_9 \text{addincom} + \beta_{10} \text{gov} + \beta_{11} \text{priv} + \beta_{12} \text{alco} + \beta_{13} \text{levelinc}$$

2.6. Variable measurement and Expected sign

Table 1: Summary of variable definition, code, measurement and excepted sign

Variable Name	Description of variables	Variable Type	Measurement	Expected Effect/ sign
Household Saving (Y)	0= no saving habit 1 = those with saving records	binary	Status	
Gender(Gen)	0 for female 1 for male	Dummy	Status	Positive (+)
Age(Ag)	Continuous	Continuous	Years	Positive (+)
Marital Status(MS)	1= single, 2=Married, 3= for divorced, 4= widowed,	Categorical	Status	Negative (-)
Family size(FS)	Continuous	Continuous	Number	Negative (-)
Educational Status (Educ)	1=illiterate, 2= certificate, 3=diploma, 4= degree and above	Categorical	Status	Positive (+)
Average monthly Income (aveincome)	Continuous	Continuous	Birr	Positive (+)
Employment Status(ES)	1=self-employed,2=government employee(gov), 3= private employee.	Categorical	Status	Positive (+)
Dependency ratio(DDR)	Continuous	Continuous	Number	Negative (-)
Alcohol use(Alco)	1 for alcohol use 0 for others	Dummy	Status	Negative (-)
Any asset from parent (Anyasset)	1 for having asset 0 for others	Dummy	Status	Positive (+)
House ownership (houseo)	1 for house owner 0 for others	Dummy	Status	Positive (+)

Source:own

Significance tests were conducted using Wald test using Wald χ^2 statistics to test of significance of individual coefficients in the model. Besides, likelihood ratio test which is alternative and widely used approach for testing the significance if sample size is small or the parameters are large (Wooldridge, 2000).

2.7. Definitions of Terms

Saving is defined as the residual income after deducting current consumption expenditure over a certain period of time usually year.

Household saving that part of income left over consumption expenditure of the family given the income from family member.

3. Result and Discussion

3.1.Descriptive Analysis

3.1.1. Descriptive statistics and Analysis

Descriptive analysis usually helps as understand saving behavior of household. To this end, descriptive statistics of continuous and discrete variables were computed and presented in Table 3.1 and 3.2 respectively. Besides, respondents saving behavior, motive of saving, and factors hindering household saving were presented in Table 3.3, Table 3.4 and Table 3.5 respectively.

There is high variability in household size, age of head of household, and income of household. For instance, the average monthly income of household head was ETB 6772.84 (SD 6292.31) with ETB 800 minimum and ETB 35000 maximum (see Table 3.1). There is 43 years gap between minimum and maximum age with mean of 42 and standard deviation of 10 years. This age is relatively low and nearly equal to the life expectancy in developing countries (Todaro,M.P,&Smith,S., 2012)

Table3.1: Summary statistics of continuous variable

Variable	Mean	Std. Dev.	Min	Max
Age	41.98	9.74	17	60
House hold family size	3.81	1.749	1	9
Dependency ratio	1.05	1.178	0	5
Income of household	6772.84	6292.31	800	35000

Source: Survey Data, 2019

Table 3.2 indicate that majority of household were married male headed household. Furthermore, government employee dominated the other occupations with frequency of 209(53%) followed by self-employment. The majority of the sample household's educational attainment were degree and above (n = 199, 50.5%) followed by Diploma holders and then by certificate holders. For majority of the respondent, monthly income of household head range between1000 to 3000.00(n=124, 31.5%) followed by 3001 to 5000 which is 22.6%. Most of the respondents (around 54%) of the sampled monthly income ranged from 1000 to 5000 which is low.

Table 2.2: Descriptive Statistics for dummy and categorical variables

Dummy variable	Description	Frequency	Percentage
Household head's gender	Male	286	72.6
	Female	108	72.4
Categorical variable			
Marital status	Single	61	15.48
	Married	281	71.32
	Divorced	13	3.3
	Widowed	39	9.90
Educational Status	Illiterate (primary school)	24	6.1
	Certificate	79	20.1
	Diploma	92	23.4
	Degree and above	199	50.5
Employment Status	Government employee	209	53
	Private employee	34	8.6
	Self employed	151	38.3
Average monthly income	< 1000 Birr	12	3
	1000-3000 Birr	124	31.5
	3001-5000 Birr	89	22.6
	5001-8000 Birr	80	20.3
	8001-10000 Birr	24	6.1
	Above 10000 Birr	65	16.5

Source: Survey Data, 2019

3.1.2. Saving behavior of the Respondents

The result of the survey indicate that majority (61%) of the respondent were savers or having saving habit out of which 68% reported as having regular savers (see table 3.3). Among different institutions used for saving bank dominate. They also use bank and other financial institutions such as bank

and Equb followed by bank and saving and credit associations with 30% and 23% respectively. Moreover, they use both formal and informal mechanisms to save in which formal was most common (see Table 3.3).

Table 3.3: Saving Habit and Preference of Saving of the Households

Variables		Frequency(n)	Percentage
Saving habit	Yes	240	60.9
	No	154	39.1
Institutions of saving	Bank	80	33.3
	Equb	5	2
	Saving and Credit	21	9
	Bank and Equb	71	29.6
	Bank and saving and credit	56	23.3
	Bank and Equb and saving and credit	7	3
Preferred form of saving	Formal	100	41.7
	Informal	14	5.8
	Both Formal and Informal	136	56.7
Regularity of saving	Yes	164	68.3
	No	76	31.7

Source: Survey Data, 2019

3.1.3. Motives of Households Saving

Households in study area reported savings were to safeguard unseen circumstances (such as to cover unexpected medical expenses and to cope with future contingencies or for emergency purposes), education of children, safe way to keep with 14.0%, 11.9%, and 11.7% respectively (see Table 3.4). The result is similar to the prior empirical evidence of precautionary motives for saving. Retired and other may hold some precautionary savings in order to pay for unexpected medical treatments and uncertainty.

Table 3.4: Reasons of Saving

Variables	Reasons	Frequency	Percent
Reasons for saving	Safe way to keep	46	11.7
	House improving and house care	33	8.4
	Purchase business asset	14	3.6
	Able to access and pay loans	6	1.5
	Fear for unseen circumstances	55	14.0
	Undertaking a new business	27	6.9
	Education of children	47	11.9
	Retirement (For old age)	17	4.3

Source: - Survey Data, 2019

3.1.4. The Major challenges of saving among Households

As per survey result presented in Table 3.5 some of the challenges of household savings were small income, investments preference, and high spending in order. The majority of respondents' noted that rise in expenditure (inflation) was the first challenge followed by lack of sufficient income (see Table 3.5).

Table 3.5: Challenges of Saving

Variables	Items	Frequency	Percent
Challenges of saving	Small income	98	24.9
	prefer to invest in other business	61	15.5
	too high spending compared to income	166	42.1
	prefer to save in kind	25	6.3

Source: Survey Data, 2019

In addition, response from open-ended questions indicate that on top of high dependency ratio, high family size which include unemployed active labor force along with low income and high expenditure forced them not to save. One of the respondent stated that " I am burdened with many expenses which include high consumption expenditure, large family including economically active unemployed member of the family, educational expenses (elementary, high school and college), social expenses such as iddir, mutual support system…" Besides, he pointed out that "young members are not forming their families due to high cost of living and unemployment situation". Other respondent mentioned stated that "on top of low income there is family responsibility of helping my parents in rural because in our society extended family system exists in which children's are considered as asset investment for their old age and share burden of their families.After all those expense I am left with nothing to save". From this one can see that the low level of saving is due to interrelated factors such as low income, high expenditure, dependency ratio, large family size, and extended family system.

Some of the respondent reported that, they are not saving in financial institutions as return on saving is quite low and they do not want to frequently go to banks to withdraw their money. Respondent stated that they prefers to put their money on certain assets rather saving in financial

institutions. Besides, they rather prefer to put their money in home for unforeseen events and frequent transactions. Such result is consistent with finding of study conducted by Girma et al.(2013) and Aron,H. Nigus, A. Getnet ,B.(2013).

3.2.Econometrics analysis

3.2.1. Model Assessment or Econometrics Diagnosis Test Result

To identify the major determinants of household saving logistic regression of the dependent variable against various independent variables was used. The regression result presented in Table 3.6 revealed that binary logistic model managed to predict 33 % of the responses correctly. The likelihood-ratio chi-square is 100. 72 and it is statistically significant (See Appendix I). The variables considered in this regression were found to be jointly significant to influence the probability of having saving. Logistic model for saving score goodness-of-fit test show that the model is statistically significant (see Appendex IV). As per Logit Model, the probability of household saving was 0.20579251 when all explanatory variables are fixed at their mean values(see Appendix III).

3.2.2.Logit Regression Analysis

To better understand interpretation of the results three interrelated models (log odds, odds ratio, and predicted probability) were estimated. Concise summary of the three estimates log odds, odd ratio, marginal effects, predicted probability evaluated at mean for log odds and marginal effect are presented in column two, three, four and six and seven of Table 3.6 respectively(detail of each measurement along with level of significance are found in Appendix I- Appendix IV) . The first interpretation directly uses log odds coefficients or predicted logged odds of having a characteristic. Despite the simplicity of their interpretation, the logistic regression coefficients lack a meaningful metric (Maddala.G.S, 1983; Gujarati, 2004). It is much easier to interpret odds ratio than coefficients of log odds ratio. The second interpretation comes from transforming logistic coefficients to odds ratio. The third interpretation was done in terms of predicted probability or marginal effects evaluated at mean.

Table3.6: Log odds, Odds ratio, Marginal effect and Predicted Probability of Estimated Model

Independent variable	Log odds Coef.	Odds Ratio	Marginal effectdy/dx)	mean(X)	X*log odds coeff	X*dy/dx	level of significance
sex of head	-0.7835	0.4568	-0.1703	0.7589	-0.5946	-0.1292	**
age of head	-0.0636	0.9384	-0.0138	41.9467	-2.6672	-0.5796	**
marrid	1.2024	3.3282	0.2757	0.7132	0.8576	0.1966	**
Divorced	2.1386	8.4879	0.2788	0.0330	0.0706	0.0092	**
Widowed	2.9529	19.1619	0.3541	0.0990	0.2923	0.0350	**
Certificate	1.2156	3.3723	0.2272	0.2284	0.2777	0.0519	**
Diploma	2.3754	10.7550	0.4174	0.3249	0.7717	0.1356	**
Degree and above	2.4720	11.8457	0.4066	0.2716	0.6713	0.1104	**
Government employee	-0.7988	0.4499	-0.1707	0.5305	-0.4237	-0.0906	**
private employee	-1.2358	0.2906	-0.2954	0.0863	-0.1066	-0.0255	**
Average monthly income	0.9503	2.5866	0.2065	3.4442	3.2731	0.7113	**
additional income	0.5714	1.7707	0.1236	0.4975	0.2842	0.0615	***
House ownership	0.6785	1.9710	0.1488	0.5635	0.3823	0.0838	***
Any asset	0.4248	1.5293	0.0888	0.2716	0.1154	0.0241	Ins
Total Family size	-0.0956	0.9088	-0.0208	3.8096	-0.3642	-0.0792	ins
Dependency ratio	-0.7495	0.4726	-0.1586	0.5711	-0.4280	-0.0906	**
Alcohol use	-1.4052	0.2453	-0.3348	0.0964	-0.1355	-0.0323	**
Constant	-1.5190	0.2189					***
					2.2763	0.3926	

Source: survey data where ** significant at 5%, *** significant at 10%, and ins for insignificant

Gender

The result indicates that gender of the household head was negative and highly significant impact on probability of household saving. Being male has log odds ratio of -0.79 which implies the logged odds of being saver is 0.78 lower for male than for female. This result revealed that household headed by male's have lesser probability to save than female. The odds of a male being saver is about 0. 46 times that of a female being saver. That is, male was less savers than female counterpart.The marginal effect indicates that if a household is male, his probability of saving decrease by 17 percent as compared to female. This finding is consistent with the prior empirical results of Farida, et al.(2011) which says that female were found to have more probability of saving than male counterparts in developing countries. But, it contradict with Wolday and Tekie (2014), Zegaye (2018) and Sawuye (2018) findings that says male headed households had significantly higher cash savings than female households. The possible justification for this is that male headed households have high probability to join or to participate social issues and spend more

Age

The research result indicated that age of household head had a negative and significant impact on household saving behavior. When age increases by one year, the log odds of saving decrease by 0.06 implying individual's capacity to save decrease with age. In terms of odds ratio, the odds of being a saver changes by a factor of 0. 94 or (0.094-1) X100 = 6% holding all other variable kept

Constant. The marginal effect result shows that as age of an individual increases by a year, hes /her possibility of saving decrease by 1.3 percent evaluated at mean age of 42 years. This confirms with the life cycle hypothesis of savings, which claims that a person would be expected to save up to a point and then start dissaving as he/she grows old((Romer, 2006). Besides, as age increase the family size tend to increase and dependency ratio increases leading to high household expenditure and low tendency to save. This result is similar with the results of previous empirical studies by Michael (2013). The result contradict the result of Wogene, (2015), Zegeye

(2018) and Sawuye (2018) found positive relationship between probability household saving and age.

Marital Status

Marital status has significantly correlated with the household savings. Married, divorced, and widowed household were more likely to save than single person. For the study under consideration being married , divorced and widowed has log odds ratio of 1.20, 2.14 and 2.95 times that of the reference category(single) respectively keeping all other variables constant. A married has an odds of being saver is 3.32 times that of the single. Likewise, the effect for divorced indicates that the odds of being saver for divorced is 8.84 times that of the single. Furthermore, the odds of being saver for widowed is 19.16 times that of the single. The result is consistent with the theoretical foundations. After marriage, even though expenditures will increase as responsibilities towards family care and social issues increase, they tend to save more as compared to single. The figure tends to be larger for divorced and widowed than the single group. Besides, the result is in line with the result findings of Hafeez (2010) and Zegaye (2018). However, Wogene (2015) and Sawuye (2018) found that being married is negatively and significantly correlated with the household savings. In another study identified that widowed household save less than married and unmarried household because they face unanticipated and extra risk of life such as rearing children alone (Mengesha, 2015).

Education

An improvement in level of education was found to be positively contributing to savings of household. Log odds of household savings with high school certificate, diploma, and degree and above was 1.22, 2. 37 and 2.47 times that of illiterate group respectively. The exponentiated coefficient for the certificate is 3.37 which indicates that a one-level increase in the variable (from illiterate to certificate) multiplies the odds of household saving by 3.37 times that of illiterate. For diploma graduates, the odds ratio of 10.75 indicates that the odds of saving are 10.75 times greater than those with illiterate group. In similar manner for degree and above graduates, the exponentiated coefficient of 11.84 indicates that the odds of saving were

11.84 times greater than those with illiterate group. A person with certificate or diploma, degree and above have more likely to save than a person with no education. The study results were consistent with theory and empirical study conducted that state education has positive effects on savings as it improves the literacy (Zegay, 2018; Girma, T., et al, 2013; Mengesha, 2015; Sawuya, 2018) .

Employment status

The employment status matter as earning depends on type of employment. The result showed that both government and private sector employment have less probability to save than self-employed household. The coefficients of -1.24 and -0.80 for these two dummy variables indicate that the logged odds of being savers were 1.24 lower for private employee than those with self-employee, and were 0.80 lower for government worker than for those with self-employee. Likewise, the effect for employment indicates that the odds of being saver for government worker and private workers were 0.45 and 0.29 times that of the self-employed once respectively. In terms of predicted probability, if a household is government worker, his/her possibility of saving less than self-employed one by 9 percent. In similar manner, if a household is private worker, his/her predicted probability of saving less than self-employed by 3 percent. This might be due to less wage and salary payment of government institution out of which less is saved. As occupation changes from being government employed / private employed to be self-employed or businessman saving behavior tends to increase. This empirical result is similar with findings of the study conducted by Wolday and Tekie (2014).

Average monthly income

Average income of the household showed positive and highly significant influence on probability of household saving behavior at 5% level of significant. The logistic regression coefficient of 0.95 shows that each additional one birr income increases logged odds of household tendency to save by 0.95. Holding all other variables constant at their mean values, when household average income increases by one birr, odds ratio of households saving increase by about 2.59 or (2.59-1) *100 = 159 percent. This result is

due to the fact that there is multiplier-accelerator effect. The marginal effect or predicted probability of household saving of average income evaluated at mean was 0.71 or 71 percent. This finding is consistent with theoretical underpinning and empirical study conducted in previous (Michael, 2013; Mengesha, 2015; Bogale, Y., Amsalu, B.,& Melkamu, B., 2017; Tsega, H. & Yemane, M., 2014; Sawuya, 2018).

Additional income

Existence of additional income also influences probability of household saving positively. As per the result of the study, when additional income increases by one birr, the log odds of saving increase by 0.57 and it is statistically significant. Using odds ratio, for every birr increase in additional income, the odds of being a saver changes by a factor of 1.77 or (1.77-1) *100= 77%. The marginal effect result shows that as additional income increase by one birr, his/her probability of saving increase by 6 percent evaluated at mean. The result is consistent with theoretical underpinnings. Households with significant income from non-farm or self-employment are expected to have relatively higher cash saving. Similar findings are reported by Asare (2018) and Haile (2017) which confirm additional income has positive effect on household savings.

Dependency ratio of the household and saving behavior

Dependency ratio of the household has negative and significant influence on household saving decision at 5% level of significant (where as P>Z value of 0.020). The logistic regression coefficient of -0.75 shows that each additional dependent member decrease the logged odds of household tendency to save by 0.75. The odds ratio for dependency ratio was 0.47, which says that for every one member increase, the odds of household saving changes by 0.47 or decrease by (1-0.47) *100=53%. If an individual faces responsibility of helping other (burden of dependency), household saving decrease by 9 percent evaluated at mean. This result is consistent with the prior research which says as number of dependent member (elderly and young) increases the household tendency to save decreases (Bogale, Y., Amsalu, B.,& Melkamu, B., 2017; Obayelu, 2012; Wogene, 2015; Kokeny, 2015).

House ownership

House ownership has significant positive impact of household's savings. A person who owns private house has more log odds ratio than non-owners. More specifically, household who owns house has 0.68 log odds more likely to save as compared to non- owners household. In terms of odds ratio, the odds of being a saver changes by a factor of 1.97 or (1.97-1) X100 = 97% holding all other variable kept constant. That is, house owners have more probability of being savers than their counterpart. Being house owner increase the probability of household saving by 0.08 or almost 8% at the mean. This result is consistent with theoretical justifications. The result is also in line with findings of Mangash (2015).

Alcohol use and household savings

As per the study alcohol use has significant negative impact on household's savings. A person who use alcohol has less log odds ratio than non-users. More specifically, alcohols users are -1.40 log odds less likely to save as compared to non-user households. The odds of alcohol user being saver is about 0. 25 times non-alcohol being saver. That is, alcohol user was less savers than their counterpart. Being alcohol user decrease the probability of household saving by 0.03 or almost 3% at the mean. This result is consistent with theoretical justifications.

Any asset and family size

These two variables were found to be statistically insignificant indicating that household saving is not influenced by any asset owned by household and family size. These results of family size contradict with the theory and empirical findings of Zeraye (2018),and Sawuye(2018). It may be due to correlation between family size and dependency ratios.

3.3. Qualitative analysis

In addition to quantitative analysis, qualitative analysis has been done. This is using data collected from household, banks, microfinance, saving and credit association, Iddir and Eqqub, town administration. It is better if we summarize interview result based on institutions.

A. Banks

As per bank's response, household saves to meet their need, to lead good life in the future, to fulfill what they need for the future, unforeseen problem related to health and medication purpose, for retirement age, choice of food preference, etc. This result is substantiating responses of household themselves. It is also in line with theoretical motives of saving which says household save for transaction and precautionary purpose. Some of the major factors which affect household saving are rise of goods price (high inflation rate), income level (low) and not much household consumption expenditure, lack of awareness about saving, low return on saving in financial institution due to high inflation rate (12%) and low interest rate(saving rate which is 7%) which makes savers not profitable or losses.

B. ***Idir* and *Equb***

As per *Idir* and *Equb*, the major motive of saving is inter-temporal choice for good life in the future and for retirement age, transaction purpose in that to settle any transaction needed for the future, precautionary like for medication purpose, to achieve their need or plan, etc. This result is substantiating responses of household themselves above. It is also in line with theoretical motives of saving which says household save for transaction and precautionary purpose. Some of the major factors which affect saving among household are high inflation rate, low income, high expense of the household, low level of awareness of about saving, fear of household to be default especially when group member are not credible etc.

C. **Saving and Credit Association and Microfinance**

As per saving and credit associations leaders interview household saving is influenced by level of income, additional income, level of awareness, credibility, peer influence, sex, age, behavioral issues (being drunkenness or

alcohol usage), etc. As one of the leaders reported "majority of savers are from their salary which is low. They save for transaction motive, precautionary motive and addressing shocks". Some of the factors which influence their saving are income level, education level, age, sex, peer influence, etc. He also added households do not saving much due to low attention given to saving religiously and culturally. This result is consistent with response of household and theoretical foundations.

From above discussion one can understand that household saving is affected by income level, consumption and related expenditure, age, sex, peer influence, lack of awareness about saving, return from saving in financial institutions, and retirement age consideration. Besides, their motive of saving is more of transaction and precautionary. This result is in line with theoretical underpinning for household saving.

4. Summary and Conclusion

4.1. Summary

The study aimed at identifying factors affecting household saving using data collected from household in Assela town. Both descriptive and econometric approaches (logit model) were employed. Descriptive analysis indicate that majority of the respondents were male headed household. The average number of family size was approximately four with relatively high variability. The average age of household head was 40.98 years (SD = 9.74) with 17 minimum and 60 maximum years. The household's educational attainment was dominated by degree and above followed by Diploma and then certificate. Dependency ratio of the household family members ranged from 0 to 5 with an average of 1.05 (SD = 1.178). Average monthly income of household head was 3.4442 with most of the sampled respondents earning ranges from 1000 to 5000. Majority of the respondents have saving habit and their motive of saving is precautionary type such as fear for unseen circumstances, education of children, safe way to keep. They save in different institution in which banks and equb were common and followed by microfinance institutions. They reported that some of common challenges for saving were small income, investments preference, and high spending.

Low income may not enable them cover their expenditures and save much given the current inflation and cost of living in the country.

Econometric analysis indicated that probability of household saving is significantly influenced by demographic, economic, institutional and policy driven factors. More specifically, household with female head were more tendency to save than male counterpart and income of head was positive and significant impact on household tendency to save. As age of head increase the household tendency to save decline. Self-employed household were more savers than government and private sector employee. Furthermore, as educational attainment increases from illiterate to certificate, diploma and then degree and above the household probability of saving increases as compared to illiterate. The dependency ratio of households was also statistically significant in reducing household saving. Furthermore, house ownership increases the possibility of household saving as compared to non-owners. However, the study found that any asset ownership and household family size do not have any significant effect on the possibility of household savings. The results obtained

are mostly in accordance with the previous empirical evidences on saving behavior of household.

The study show that household saving is key factor for growth and development in any given economy. But saving is low with poor saving habit. Factors responsible for household saving are demographic (age , sex, family size, marital status, educational achievement, dependency ratio), economic (low level of income, high consumption and related expenditure, ownership of certain assets, employment status, high rate of inflation), institutional factor (low rate of saving in financial institutions), low level of awareness on saving. Unless such factors are addressed there is no way that desired growth, improvement in social welfare and mobilization of financial resource for investment can be recorded.

4.2. Recommendation/policy implications

The above conclusions have an important policy implication for government, non-government, and society/household. Initiatives directed at these

determinants will have positive impact on the household economic and financial life in influencing saving habit of urban household in Ethiopian. One of the recommendation is that the government should promote policies aimed at enhancing household saving behavior and to continually checking effectiveness, and extensiveness of those policies. Some of these polices should be related to housing, using family planning to reduce dependency ratio, retarding consumption of alcohol through taxies on those items etc. Besides, concerned bodies (government and others) should pursue policies that will improve productivity and income base of the household through the creation of employment opportunities for citizens especially own business, diversify income base through provision of additional capital, and business and entrepreneurial trainings. Furthermore, government should continue and spend the utmost effort to stabilize inflationary pressures using short-term and long-term strategies. Moreover, concerned body (government) should make initiative and budgetary allocation to subsidize human resource development a country through successive practical trainings and formal education. Enhance awareness on household savings through education and trainings so that they cut down their expenses to induce savings through different mechanisms such as effective budget planning and efficient resource utilization of household can be recommended as one another options. Last but the least is efforts should be made to encourage financial institutions to make to mobilize saving and hence business investments through different mechanisms

4.3. Direction for Future Researchers

Current study was based on a small sample taken from a large number of households. One cannot generalize factors of saving at a regional or national level. So, concerned body should encourage further study on the topic to see whether factors affecting household saving Assela can also be true for other towns in the country. Furthermore, extend the study area on motive of saving and another related topics using both quantitative and qualitative approach to gain more in-depth understanding for household savings habit. Thus, future extensive researches should be conducted on area in collaboration with stakeholders.

List of Acronyms and Abbreviations

CIA	Central Intelligence Agency
GDP	Gross Domestic Product
GDS	Gross Domestic Saving
GTP	Growth and Transformation Plan
HH	Household
IMF	International Monetary Fund
LCH	Life Cycle Hypothesis
SSA	Sub Saharan Africa
UNDP	United Nations Development program

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Appendix

Appendix I: Log odds coefficient of logit model

Saving score	Coef.	Robust SE	z	P>z
sex of head	-0.7834917	0.3023496	-2.59	0.010
age of head	-0.0635843	0.0280899	-2.26	0.024
married	1.202432	0.4855327	2.48	0.013
Divorced	2.138646	0.9612152	2.22	0.026
Widowed	2.952925	0.8123607	3.63	0.000
Certificate	1.215598	0.4378393	2.78	0.005
Diploma	2.375369	0.5547836	4.28	0.000
Degree and above	2.471962	0.6822689	3.62	0.000
govt employee	-0.7988006	0.3374904	-2.37	0.018
private employee	-1.235778	0.6643915	-1.86	0.063
Average level monthly income	0.9503305	0.166076	5.72	0.000
Additional income	0.5713797	0.2976712	1.92	0.055
house ownership	0.67852	0.3581192	1.89	0.058
any assest	0.42481	0.3256764	1.3	0.192
Family size	-0.095604	0.1418084	-0.67	0.500
dependency ratio	-0.7495143	0.3690284	-2.03	0.042
alcohol use	-1.405192	0.4358452	-3.22	0.001
Constant	-1.518955	0.8486456	-1.79	0.073
Number of obs		394		
Wald chi2(17)	=	100.72		
Prob > chi2	=	0.0000		
Log pseudolikelihood	=	-177.05231		
Pseudo R2	=	0.3284		

Appendix II: Odds Ratio of logit model

Variables	Odds Ratio	Std. Err.	z	P>z
sex of head	0.4568082	0.1162424	-3.08	0.0020
age of head	0.938395	0.0240013	-2.49	0.0130
married	3.3282	1.744082	2.29	0.0220
Divorced	8.487941	11.76672	1.54	0.1230
Widowed	19.16192	15.03042	3.76	0.0000
Certificate	3.37231	1.580174	2.59	0.0090
Diploma	10.75498	5.889112	4.34	0.0000
Degree and above	11.84566	8.072098	3.63	0.0000
govt employee	0.4498682	0.1507221	-2.38	0.0170
private employee	0.2906084	0.1924548	-1.87	0.0620
Average level monthly income	2.586564	0.3771956	6.52	0.0000
Additional income	1.770708	0.5406773	1.87	0.0610
house ownership	1.970959	0.7474838	1.79	0.0740
any assest	1.5293	0.5124497	1.27	0.2050
Family size	0.9088238	0.1148827	-0.76	0.4490
dependency ratio	0.472596	0.1822292	-1.94	0.0520
alcohol use	0.2453199	0.1077117	-3.2	0.0010
Constant	0.2189407	0.1706986	-1.95	0.0510
Number of obs		394		
Wald chi2(17)	=	173.17		
Prob > chi2	=	0.0000		
Log pseudolikelihood	=	-177.05231		
Pseudo R2	=	0.3284		

Appendix III: Marginal Effect of logit model

variable	Marginal effect (dy/dx)	Std. Err.	z	P>z	mean
sex of head	-0.1702704	0.05506	-3.09	0.002	0.758883
age of head	-0.0138183	0.00548	-2.52	0.012	41.9467
married	0.275711	0.12197	2.26	0.024	0.713198
Divorced	0.2787903	0.08063	3.46	0.001	0.032995
Widowed	0.3540575	0.04756	7.44	0.000	0.098985
Certificate	0.2272495	0.07285	3.12	0.002	0.228426
Diploma	0.4173994	0.07398	5.64	0.000	0.324873
Degree and above	0.4066218	0.08068	5.04	0.000	0.271574

govt employee	-0.1707218	0.06928	-2.46	0.014	0.530457
private employee	-0.295386	0.15776	-1.87	0.061	0.086294
Average level monthly income	0.2065282	0.02975	6.94	0.000	3.44416
Additional income	0.1235976	0.06528	1.89	0.058	0.497462
house ownership	0.1487839	0.08304	1.79	0.073	0.563452
any assest	0.0887864	0.06747	1.32	0.188	0.271574
Family size	-0.0207769	0.02758	-0.75	0.451	3.80964
dependency ratio	-0.1586432	0.07816	-2.03	0.042	0.571066
alcohol use	-0.3348338	0.10117	-3.31	0.001	0.096447
Constant					

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Marginal effects after logistic

y = Pr(savingscore) (predict)

= .68076915

Appendix IV: Goodness of Fit For Logit Model

```
. lfit
```

Logistic model for savingscore, goodness-of-fit test

```
      number of observations =       394
 number of covariate patterns =       286
           Pearson chi2(268) =       419.95
                 Prob > chi2 =         0.0000
```