Determinants of Urban Poverty in Oromia: A Case Study in Some Selected District, Ethiopia

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Abstract

The study was conducted in south west Shewa zone districts, Oromia National Region, Ethiopia. Stratified sampling techniques were applied in order to obtain a representative sample were selected to collect data by using these strata since in study there were constituted 3 urban areas were selected from a total of 4 towns in Waliso districts. Based on this condition sampling will be conducted separately in each subgroup or stratum. Descriptive statistics and binary logit were employed to determine factors that influence the economic status of households. A sum of twelve explanatory variables for the binary logit model was used, out of which eight variables were found to significantly affect the economic returns of households at 5%. These are: household family size, education of household head, the gender of household head, marital status, age of household head, , income of household head, house ownership, previous residence, and four of the following were at 10% like household health status, household head occupation, dependency ratio and saving of household and the other variables like household health status, household head occupation, and dependency ratio were not significant at a maximum of 10% significance level. The study recommends that the strong negative relationship between income and the probability of being poor point out that there must be a need to consider households income character by government and non-government organization in designing policies targeted to curb urban poverty intervening to household health status, household head occupation, dependency ratio and saving of household.

Keywords: Rural poverty, Binary Logit Model, Waliso district.

1. Background of the Study

Poverty is viewed as encompassing both income and non income dimension of deprivation, lack of empowerment and extreme vulnerability to external shocks.Poverty is pronounced deprivation in wellbeing; extreme poverty is living on less than 1.9 USA dollars per day, and moderate poverty defined as less than 3.10 a day (World Bank, 2018). Rural poverty and urban poverty differ on many levels, with distinctive environment based issues that characterize quality of life. United Nation development program (2017) described poverty as a consequence of gender inequality, low productivity, vulnerability in changing labor market, lack of basic education and the absence of social support. The issue of poverty remains on the agenda of developing countries.

Ethiopia is one of the world's poorest countries, where about 30 percent of the population lives under the poverty line, and 37 million Ethiopians remain either poor or vulnerable to falling into poverty in the week of a shock (World Bank, 2017). Ethiopia as one of the developing countries in the world is the poorest of the poor by any standard (Mohammed, 2016). Poverty is widespread and multifaceted in Ethiopia. It affects a significant portion of the rural and urban population. Most of them live in rural areas with agriculture as their main occupation. With 80% of Ethiopians dependent on agriculture as their main livelihood, severe dry conditions due to persistent lack of rainfall have worsened poverty. UNDP (2017) ranked Ethiopia by human development index (HDI) and human poverty index (HPI) respectively 174st and 6th out of 188 and 94 developing countries. Poverty in Ethiopia is more pronounced in the rural areas as compared to the urban areas. The situation worsened recently because of sharp increases in the prices of food and fertilizers on world markets, which made it more difficult for poor households in Ethiopia, as elsewhere, to secure adequate food supplies (Ayalneh, 2014). To overcome this problem the government of Ethiopia used policies and strategy that targeted the reduction of poverty.

Ethiopia had successfully reduced poverty rate from 56 percent to 29.6 percent between 2000 and 2017(World Bank, 2017). This trend was however getting disturbed by the country's fast economic growth and rapid urbanization. The urban population swelled from19.5 percent in 2006 to 20.4 percent in 20017(World Bank, 2017). In Ethiopia the acceleration of urbanization has been accompanied by increase of urban poverty together with crowding, uneven distribution of development benefit and the change in the ecology of urban environment (Mohammed, 2017). However if managed proactively, the expansion of urban areas presents a huge opportunity to shift the structure and location of economic activity from rural agriculture to the larger and more diversified urban industrial and services sector.

In Ethiopia Urban growth and increased access to urban centers has been an important complement to agricultural growth. Growth in non agricultural urban demand is important complements to agricultural output growth to attain poverty reduction. In addition to ongoing the successful combine of agricultural growth and

investments in the provision of basic services and direct transfer to rural households, additional drivers of poverty reduction will be needed, particularly those that encourage the structural transformation of Ethiopia's economy. This fact indicates addressing poverty in large urban centers should be an important focus of development policy. However in Ethiopia as country urbanizes so too does poverty. In 1999, 13 percent of Ethiopian people lived in cities, but this rose to 20.4 percent in 2017 (World Bank 2017). This indicates in Ethiopia poverty rate fall and inequality increases as city size increases.

2. Research Methodology

The study was conducted in Waliso district. Waliso is one of the eleven administrative districts of South West Shewa Zone of Oromia Regional state. This district is consists 35 rural kebeles and 4 city administrations. The district is bounded by SNNPR to the South, Saden Sodo and Bacho to East, Wonchi district to West and Dawo district to North. This district is situated on area having an average elevation of 1850-2850 meters above sea level. Thus it has Kolla, Woinedega, and Dega climatic condition. The total geographical area of the district, mountains and hill cover 10 percent, plain covers 70 percent, forest and others covers 20 percent. It has an annual average rainfall within a range of 1200 to 1350mm. The district is populated by Oromo (95.8 percent), Gurage (3.6 percent), Amharas (0.5 percent) and others (0.1 percent). According to CSA census of 2007 the population size of the district was 143,391 of which 71,567 are females and 71,824 are males. The current population of the district is estimated at 451,645. The majority of the residents of the district are followers of Christianity (75.5 percent) followed by Muslims (21 percent) and Wakefata (3.5 percent). The dominant language spoken in the district is Oromiffa followed by Amharic and Guraginga.

In this study, both primary and secondary data sources were used. Discussion with group of household was done to gather information. Key informants were also used as information source from different actors. A multi stage sampling procedure was used to select sample households. In the first stage, three towns were selected purposively from four towns of Waliso districts. In the second stage after lists of farmers were obtained from district pertaining to how sampled households are selected from each stratum the study followed were the method of proportional allocation under which the size of sample from the different Strata are kept proportional to the size of strata. This means if Pi were represents proportion of population included in stratum i and n represents the total sample size, the number of elements were selected from stratum i is n Pi taking sample size from the Strata town of Waliso, Dilela and Korke towns. 397 urban respondents were selected using random sampling based on their proportion of selected town. The data was collected from 2018 for one year's using cross sectional data survey.

In this study, descriptive statistics (percentage, frequency and mean) were mainly used. The descriptive analysis was conducted using Statistical Package for Social Science (SPPS). Binary logistic regression was incorporated to analyze relationships between a dichotomous dependent variable and independent variables. The logistic regression was fitted using method of urban poverty as dependent variable and the listed demographic and socioeconomic variables as explanatory variables which is assumed to determine being under status of poverty or not under poverty. The response variable is binary, taking values of one if the households escape from poverty and zero otherwise. However, the independent variables are categorical, continuous and dummy.

The justification for using logit were the simplicity of calculation as the dependent variable has a dichotomous nature (poor or non poor), a binary logistic regression was used where the estimated probabilities lie between logical limit 0 and 1 (Gujarati, 1995). Accordingly, variables assumed to have influence on the probability of being poor or non poor in different contexts were tested in the model. The general description of the model and its application is described below. The study was employed Logistic regression model (Equation 1) with the dependent variable (the status of respondents regarding to poverty) being a binary variable having a value of one if a respondents will be found poor , and a value of zero otherwise:

$$Pi = E(y = 1 \ /Xi) = \frac{1}{1 + e^{-zi}} = \frac{e^{zi}}{1 + e^{zi}} \ --------------- \text{Equation 1}$$

Where e is an exponential term Pi is the probability of respondent to be poor. Y is the observed status of a respondent regarding to poverty. X_i is the respondent set of explanatory variables Z_i is a function of n-explanatory variables (X_i) which can be expressed in linear form as:

$$Zi = \beta 0 + \beta 1 X1 + \beta 2 X2 + \cdots + \beta n Xn$$

From Equation 1, the probability of a respondents being non poor is given by $(1 - Pi)$ which can be written as:

$$1 - pi = 1 - \frac{1}{1 + e^{-zi}} = \frac{1 + e^{-zi} - 1}{1 + e^{-zi}}$$

$$= \frac{e^{-zi}}{1 + e^{-zi}} \ ------------- \text{Equation 2}$$

Therefore, the odds ratio $\frac{pi}{(1-pi)}$ is given by:

$$\frac{pi}{(1-pi)} = \frac{1+e^{zi}}{1+e^{-zi}} = e^{zi} \quad ------------------ \text{Equation 3}$$

Now, $\frac{pi}{(1-pi)}$ is the odds ratio in favor of being poor and It is simply the ratio of the probability that a respondent would be poor (Pi) to the probability that a respondent would be non poor (1-Pi). According to Gujarati, 1995 if we take the natural log of the above equation (equation 3) we obtain a very interesting result.

$$Li = \ln\left\{\frac{pi}{1-pi}\right\}$$
$$= Zi \quad ---------------------- \text{Equation4}$$

Where, *Li* is the log of odds ratio which is not only linear in variables but also (from the estimation view point) linear in parameter. The above equation is logit and hence the name logit model for models likes the above model. If the disturbance term is introduced, the Logistic regression model in Equation 4 is represented below:

$$Zi = \beta 0 + \beta_1 X1 + \beta 2 X2 + \beta 3 X3 + \ldots\ldots + \beta n\, Xn + \varepsilon \quad ------$$
$$---\text{Equation 5}$$

In Equation 5, the terms βi are parameters to be estimated, and X1 to Xn are explanatory variables such as: the gender of the family head, family size of the household, marital status of household head, education of the household head, occupation of household head and other variable associated with urban poverty. In this logit model the slope coefficient of a variable gives the change in the log of odds ratio in favor of being poor associated with a unit change in that variables ,holding all other variable constant. But in the logit model the rate of change in the probability of an event happening is given by $pi(1-pi)\beta i$, where βi is the (partial regression) coefficient of the ith explanatory variable(Gujarati, 2004). Depend on this in our case the rate of change in the probability of being poor is given by $(1-pi)\beta i$.

$$\frac{\partial pi}{\partial Xi} = pi(1-pi)\beta i ------------------------------$$
$$- \text{Equation 6}$$

This equation shows us the marginal effects of each explanatory variable on the probability of being poor were calculated from the estimated Logistic regression model.

3. Results and Discussion
### 3.1. Respondents Background
The very majority of the respondent's males were headed by 71.69 percent and the remaining about 28.31 percents households were headed by females. This is atypical representative of developing countries where male headship is dominant.

Figure 1: Sex of Household Head
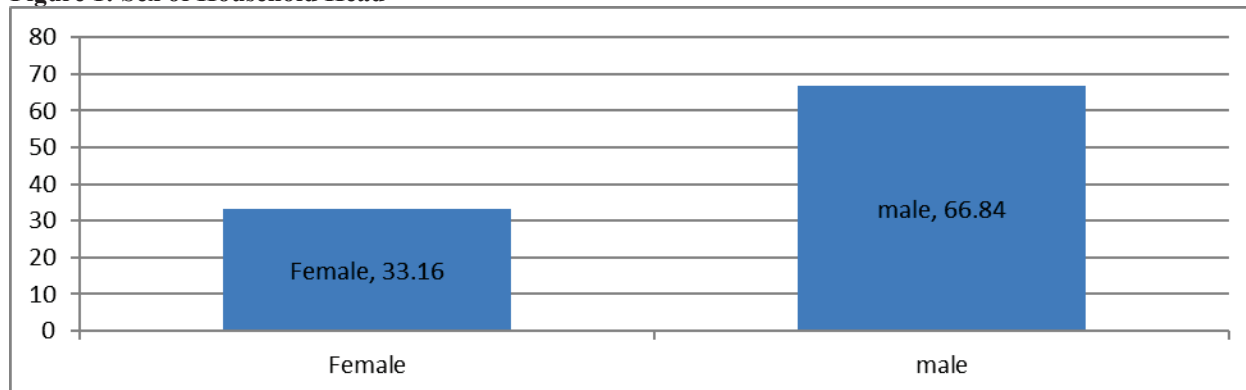
About 18.08 percent can't read and write, 9.59 percent read and write, while 31.37 percent have attend primary level of education, the majority of sample household heads where attend primary education level followed by tertiary education and secondary education level which accounts 30.63 percent and 10.33 percent respectively.

Figure 2: Education level of Household Head
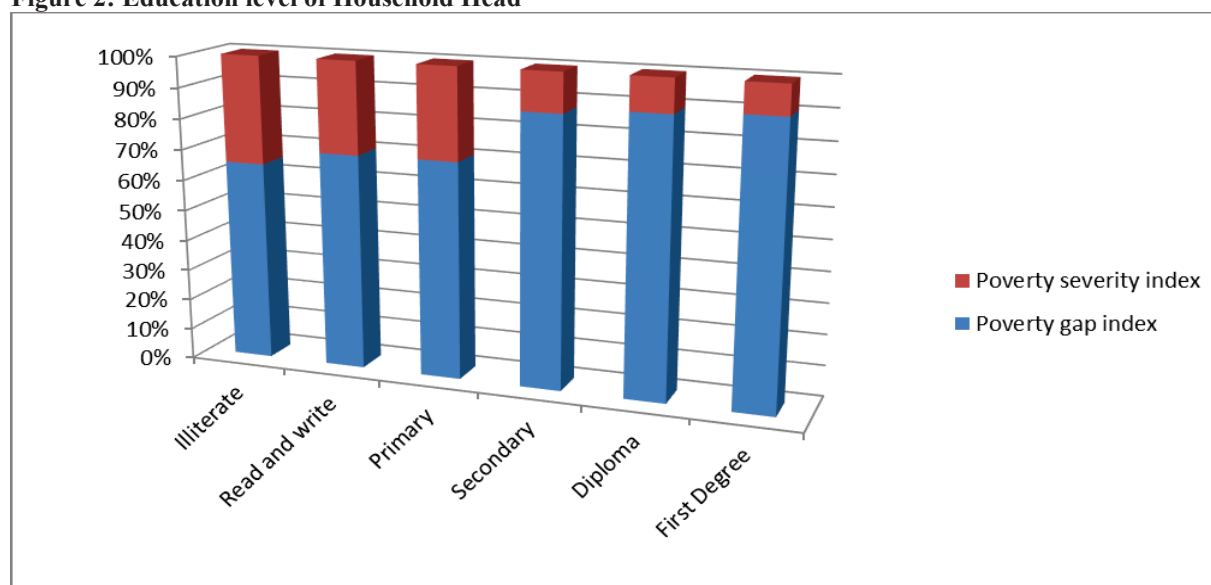
As regard to the ages of household respondent were show that a probability that a household will be poor decreases at old age. As it is shown in the following table most of the household heads (36.9 percent) fall under age group of 39 to 48 years age followed by 49 to 58 (33.68 percent) years of the age together accounting about 70 percent of poor sampled households. This implies that older household heads generate more income and expend more than younger aged household heads.

Table 1: Age range of poor households

Age of household head	Number of poor households	Percentage share
27-38	39	20.86
39-48	69	36.90
49-58	63	33.68
Above 59	16	8.56

Source: Owen survey result, March 2018

Regarding to marital status the result reveals that 4.04 percent, 79.78 percent, 9.56 percent, 6.62 percent of sampled households are never married, married, divorce and widow respectively.

Figure 3: Marital status of household respondents
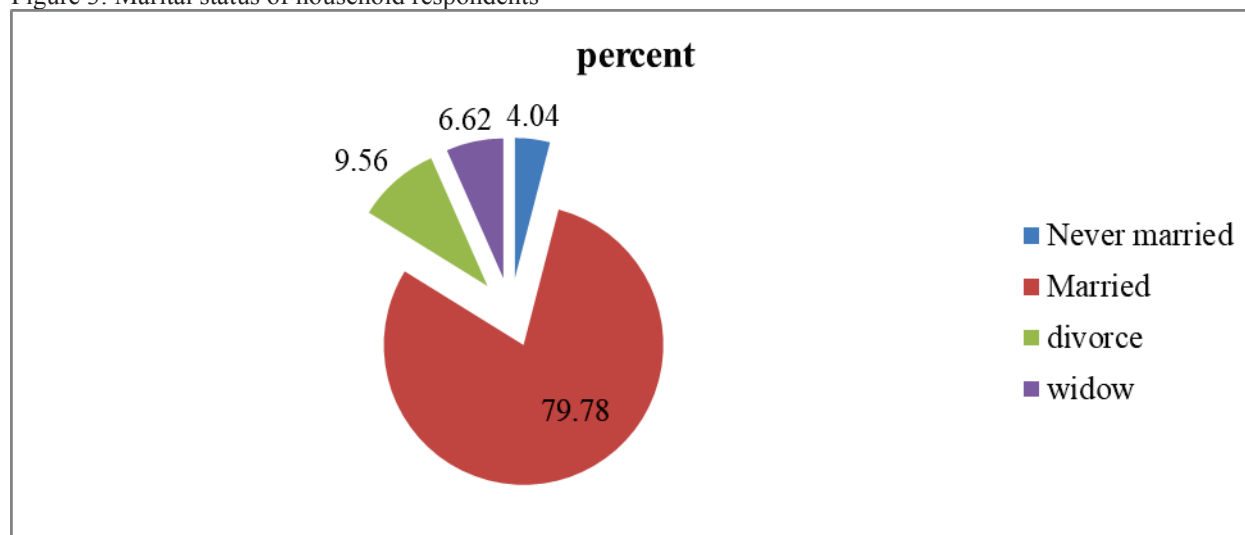
3.2. Main Determinants of urban poverty
Urban poverty is a multidimensional is determined by demographic and socioeconomic variables. Under this section the study were discuss the link of poverty with demographic and socioeconomic variable in the study area. In addition to this, under this part the study tested whether a particular independent variable is significant or not holding other variable constant. The study used t test to test a hypothesis about any individual partial

regression coefficient. The partial regression coefficient measures the change in the probability of being poor per unit change in explanatory variable. This study employed logistic regression model to estimate and to figure out factors having a certain sort of relationship to urban poverty. The output of the logistic regression model showed that eight variables determine the probability of faced by poverty in urban area. These are household family size, education of household head, the gender of household head, marital status, age of household head, , income of household head, house ownership, previous residence at 5% and the other such like household health status, household head occupation, dependency ratio and saving of household were significant at 10%, and the other variables like household health status, household head occupation, and dependency ratio were not significant at a maximum of 10% significance level

Age of household head: this variable influences economic status of urban negatively and significant at 5% level of significant (p=0.027) (table 4). The marginal effect (-0.0000114) shows that keeping other explanatory variables constant, as age of household increases by one year the probability of households falling into poverty decreases by 0.00114%. The result of this study was show children comprise a greater share of the population in poverty than their share of the general population.

Family size of household head: this variable is significant at 5% of significance level (p=0.014) to affect positively urban dwellers economy (table 4). The marginal effect (0.0002144) also reveals keeping all other explanatory variables constant, a 5% increases in family size increases household probability of escaping from poverty by 0.24%. This was suggested as family size is among the major variable in influencing decisions of households probability escaping from poverty.

Table 2: Estimation result of variable analysis of binary logit model

Variable	Robust coefficient	Odds ratio	P>[Z]	S.E	Marginal effect
AHH	-.2269279	0.7969782	0.089*	.1063776	-.0000117
GHH	3.788843	44.20521	0.108	104.1344	.0007591
MSHH	-6.109344	0.002222	0.041**	.0066555	-.0001541
EHH	-.4525257	.6360197	0.054*	.1491046	-.0000233
PRHH	-6.091347	.0022624	0.185	.0103869	-.0006019
HHFS	4.270914	71.58706	0.007***	114.2826	.0002195
OCHH	2.56776	13.03659	0.274	30.63262	.0001315
SHH	-4.394191	.0123489	0.028**	.0247118	-.0006836
DRHH	9.728432	16788.21	0.189	124380.9	0.0005
IHH	-.0031234	.9968815	0.013**	.0012593	-1.61e-07
HHH	1.253144	3.501332	0.489	6.339902	0.0000753
HOWN	-5.340965	.0047912	0.032**	.0119059	-.0013042
Constant	15.69572	6554883	0.176	7.69e+07	
Source: own computation based on data (2018)					

Education level of household head: It is a variable negatively correlated with urban poverty challenged and significantly influence the escaped poverty by1% level of significance (p=0.054). The marginal effect (-.0000233) means that keeping other factor variables constant, if education year of the household increases by one year the probability of household falling into poverty reduces by 0.0000233 percent, This is due to educated household head plays a significant role in shaping household members and educated household head have opportunities to get employments with good income.

Household family size: It affects the probability of being poor positively and significant at 5percent significant level. As family size increases by one member the probability that a household will be poor increases by .0002195percent, other thing remain constant. The sign of the coefficients of saving in the regression results showed a negative relationship with the probability that of falling into poverty.

4. Conclusion and Recommendation

The objective of this study was to evaluate the determinants of urban poverty in Oromia taking some selected district. Binary logit and cross-sectional survey data were used to attain the objective of the study. The study employed cross sectional household level data collected in 2018/19 household income survey from 397 sample farming households. The main factors affecting urban economic status were household family size, education of household head, the gender of household head, marital status, age of household head, , income of household head, house ownership, previous residence, and four of the following were at 10% like household health status, household head occupation, dependency ratio and saving of household and the other variables like household health status, household head occupation. The most important problem in urban poverty is getting high earned job opportunities. It is therefore, changing the attitudes of household is a crucial factor in escaping poverty, household heads with very limited education encounter in successfully managing, and also what to earn in line with taste and preference of household demand, especially in the presence of ineffective earned jobs. So

stakeholders' and government authorities have to create awareness about the benefits of escaped from poverty. Continuous education and training are important in this regard. Intervention aimed at improving the economic status would adopt. The improved access to diversified and qualified household aware still remains critically important.

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