Global Journal of human-social science: a
Arts & Humanities - Psychology
Volume 16 Issue 4 Version 1.0 Year 2016
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-460X & Print ISSN: 0975-587X

Determinants of Youth Unemployment; Evidence from Ethiopia

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Abstract- *Background:* Youth employment presents a particular challenge to Ethiopia; the country faces growing youth landlessness in rural areas and insignificant rural job creation, potentially leading to an increase in migration to urban areas.

Objective: The main objective of this study is so to identify and describe the determinants of youth unemployment in Ethiopia. Design: The sampling technique employed was multistage stratified cluster sampling.

Results: The study is made based on the 2011 Ethiopian Demographic and Health Survey (DHS) which was conducted by Central Statistical Agency (CSA) of *Ethiopia.* The analyses result revealed that about 10.4% of the youth are unemployed while 89.6% are employed. The regional variations, access to electric power, age, gender, access to market information, economic status of their families and youth's educational level are found to be the significant determinants of youth unemployment in Ethiopia.

Conclusion: The government should facilitate formalization of informal employment sector in order to motivate more youth to engage in different activities which are currently considered to be informal. This will help to reduce the problem of youth unemployment especially on skilled and educated youth in both urban and rural areas..

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GJHSS-A Classification : *FOR Code: 130205p*

Strictly as per the compliance and regulations of:

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List of Abbreviation

CSA	Central Statistical Association
DHS	Demographic and Health Survey
EDHS	Ethiopian Demographic and Health Survey
MDG	Millennium Development Goal
UN	United Nations
ILO	International Labour Organization

I. Introduction

Unemployment is one of the main challenges of the modern era in both the developed and developing countries. Especially youths, which the United Nations defines as, those between the ages of 15-24, are more affected by unemployment. Young people are more vulnerable to lack experience, social networks or other qualifications that would make them difficult to find employment. In most regions youth were nearly three times more likely to be unemployed than adults (ILO, 2012). This is particularly worrying against the background that youths represent a large proportion of the world's population like Ethiopia. In 2010, the 1.2 billion young people in the world constituted 18 percent of the global population (UN, 2010). Their energy and motivation, creativity and talent present a great potential for companies to prosper and an enormous opportunity for economic and social development.

Many policy makers know about the benefits of investing in youths. Governments are targeting on policies and educational programs to improve opportunities for young people to enter the labor market, but still the problem is rampant. UN claims that Policy makers must ensure that educational curricula prepare young people for the job market, providing them with professional, entrepreneurial and job-search skills" (UN, 2007:39), acknowledging that matching school curricula with recent workplace requirements is a difficult task.

Youth unemployment is a pressing issue in Ethiopia where almost two-thirds of the population is younger than 25 years. Being Ethiopia among the countries with a rapidly growing population coupled with a still backward economy, the proper management and efficient utilization of its work force is essential. In this respect, the capacity of the economy in absorbing the potential labour force needs to be monitored regularly, and appropriate employment policy should consequently be adopted. The level of unemployment of a country is widely used as an overall indicator in evaluating the current performance of its economy.

The problem of unemployment is a global issue at the moment that every nation is striving to control it at its minimum level. However, in developing nations it is getting worse mainly due to the unbalanced relationship between the rate of economic development and the rapid population growth. Ethiopia is no exception in this regard, and its recent urbanization is aggravating the problem because of the urban migration of people with scarce or nil real working prospects, which therefore often slip into some form of underemployment or remain idle for productive work.

A high level of unemployment indicates the failure of a country's economy to use its labour resources effectively. There can be various factors explaining unemployment, such as a low level of general economic activity, recession, inflation, rapid changes in technology, disability, willingness to work and discrimination. In the case of Ethiopia, several factors contribute to the causes of youth unemployment.

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Many young people end up facing extended periods of unemployment, or significant under-employment in jobs that fail to offer career opportunities. The analysis of occupational status and unemployment is therefore essential both in tackling present difficulties and foreseeing future changes. The goal of this study is therefore to conduct an analysis so can identify the various possible factors which are associated with youth unemployment in Ethiopia.

II. Research Question

"Why do a substantial number of youths in Ethiopia remain unemployed despite years of government programs on youth employment?"

The main objective of this study is to identify and describe the various possible determinants of

- To examine the socio-demographic factors that affect the participation of the young population to the labour force, as well as those which contribute to the high level of unemployment.
- To describe the prevalence of youth unemployment across the regions and urban/rural districts in Ethiopia.
- To estimate the likelihood of being unemployed among youths in Ethiopia given his/her background and or individual characteristics.
- To draw conclusions from the ongoing experience in order to make recommendations for programmes geared towards enhancing employment creation in the country.

III. Methods

a) Data

Ethiopia is one of the least urbanized countries in the world; only 16 percent of the population lives in urban areas. The majority of the population lives in the highland areas. The main occupation of the settled rural population is farming, while the lowland areas are mostly inhabited by a pastoral people, who depend mainly on livestock production and move from place to place in search of grass and water. The population has increased steadily over the last three decades, from 42.6 million in 1984 to 53.5 million in 1994 and 73.8 million in 2007. There were slight declines in the population growth rates over these periods, from 3.1 percent per annum in 1984 to 2.9 percent in 1994 and 2.6 percent in 2007. More than 80 percent of the country's total population lives in the regional states of Amhara, Oromiya, and SNNP (CSA, 2010).

The dataset used in this study has been taken from the Ethiopia Demographic and Health Survey (EDHS) conducted by central Statistics Agency (CSA) in 2011. The survey utilized multistage cluster sample based on the 1994 Population and Housing Census sample frame and was designed to obtain and provide information on the basic indicators of the health and demographic variables. The study design is cross-sectional, that is data on the independent and outcome variables is collected at the same point in time. There is no follow up time during a data collection process.

b) Study Variables

i. *The Response Variable*

The response variable to this study is employment status of youth in Ethiopia. According to International Loubor Organization's (ILO's) definition, those persons who are simultaneously "without work", "currently available for work" and "seeking work" are considered as unemployed. For the purpose of this study, the response variable, "employment status" is dichotomized as "unemployed" and "employed". Therefore, the outcome for the i^{th} individual is represented by a random variable Y_i with two possible values (unemployed and employed).

ii. *Explanatory Variables/Factors*

Based on the reviewed literatures, some of the common Socio- economic and demographic predictors which are expected to influence the occupational status of young men and women in Ethiopia used under this study are:

Place of residence	Household wealth index
Age	Sex of the youth
Sector of participation in the past	Region
Educational status of the youth	Access to electric power
Access to market information	Educational status of household head
Family size	

iii. *Logistic Regression Analysis*

Logistic Regression is a popular modeling approach used when the dependent variable is categorical (nominal or ordinal scale). The model allows one to predict the log odds of outcomes of a dependent variable from a set of variables that may be continuous, discrete, categorical, or a mix of any of these (Hosmer and Lemeshow, 2000). The most attractive feature of a logistic regression model is that it neither assumes linearity in the relationship between the covariates and the outcome variable, nor does it require normally distributed variables. It also does not assume

homoscedasticity and in general has less stringent requirements than linear regression models. Thus logistic regression is used in a wide range of applications leading to categorical dependent data analysis (Agresti, 2002). A binary logistic regression is a special type of logistic regression model which is used to describe the relationship between one or more independent variables and a binary outcome variable that has only two possible values.

The response variable in this study is dichotomous which is Bernoulli random variable with two possible values, $y_i = 1$ with probability of unemployed $P_i = P(y_i = 1|X_i)$ and $y_i = 0$ with probability of employed, $1 - P_i = 1 - P(y_i = 1|X_i)$.

The logistic model is defined as follows. Let $Y_{n\times 1}$ be a dichotomous outcome random variable as explained above and let $X_{(n\times(k+1))}$ denote the collection of k-predicator variables.

$$\mathbf{X} = \underbrace{\begin{pmatrix} 1 & X_{11} & X_{12} & .... & X_{1k} \\ 1 & X_{21} & X_{22} & .... & X_{2k} \\ . & . & . & .... & . \\ . & . & . & .... & . \\ . & . & . & .... & . \\ 1 & X_{n1} & X_{n2} & .... & X_{nk} \end{pmatrix}}_{n\times(k+1)} = \begin{bmatrix} X_1 \\ X_2 \\ . \\ . \\ . \\ X_n \end{bmatrix}$$

Where, $\mathbf{X}$ is called regression matrix, and without the loading column of 1's, is termed as predictor data matrix. Then, the conditional probability that the $\mathbf{i^{th}}$ individual is unemployed given the vector of predictor variables $\mathbf{X_i}$ is denoted by $\mathbf{P_i} = P(y_i = 1|X_i)$. The expression P_i in logistic regression model can be expressed in the form of:

$$P_i = P(y_i = 1|X_i) = \frac{e^{X_i\beta}}{1+e^{X_i\beta}} \ , i1,2, \dots, n \qquad 3.1$$

Where $P(y_i = 1|X_i)$ is the probability of i^{th} individual is unemployed given his/her individual characteristics $\mathbf{x_i}$, and $\beta = (\beta_0, \beta_1, \dots, \beta_k)^T$ is a vector of unknown coefficients with dimension of $(k + 1) \times 1$.

However, the relationship between the probability of i^{th} individual is unemployed and his/her characteristics are non linear. In order to make meaningful interpretation, it should be written as a linear combination of predictors. This is computed using the logit transformation which is given by:

$$\text{logit}[P_i] = \log\left(\frac{P_i}{1-P_i}\right) = \sum_{j=0}^{k} \beta_j X_{ij} \ , i = 1,2, \dots n; \ j = 0,1, \dots, k \qquad 3.2$$

where $X_{i0} = (1,1, \dots,1)^T$

The parameter β_j refers to the effect of X_j on the log odds that Y = 1, controlling the other X"s in the model.

iv. *Parameter Estimation*

The most commonly used method of estimating the parameters of a logistic regression model is the method of Maximum Likelihood (ML) instead of Ordinary Least Squares (OLS) method.

Consider the logistic model $P(y_i = 1|X_i) = \frac{e^{X_i\beta}}{1+e^{X_i\beta}}$. Since the observed values of $Y(Y_i, \ i = 1,2, \dots, n)$ are independently distributed as Bernoulli random variables, the maximum likelihood function of $\mathbf{y}$ is the joint density funcion given by:

$$L(\beta|Y) = \prod_{i=1}^{n} P(y_i = 1|X_{i1}, \dots, X_{ik}) = \prod_{i=1}^{n} \left[\frac{e^{X_i\beta}}{1+e^{X_i\beta}}\right]^{y_i} \left[\frac{1}{1+e^{X_i\beta}}\right]^{1-y_i} \qquad 3.3$$

The maximum likelihood estimates of the parameters β are obtained by maximizing the log-likelihood function which is given by:

$$\log L(\beta|Y) = \sum_{i=1}^{n} \left\{ y_i \log\left[\frac{e^{X_i\beta}}{1+e^{X_i\beta}}\right] + (1 - y_i)\log\left[\frac{1}{1+e^{X_i\beta}}\right] \right\} \qquad 3.4$$

The maximum likelihood estimate of the parameter is found by the derivation of the log-likelihood function with respect to each β's and set each equation to zero which is given as:

$$\frac{d\log L\ (\beta|Y)}{d\beta_j} = 0, \quad j = 1,2, \dots, k \qquad 3.5$$

v. *Assessment of the Fitting of Logistic Regression Model*

After fitting the logistic regression model or once a model has been developed through the various steps in estimating the coefficients, there are several techniques involved in assessing the appropriateness, adequacy and usefulness of the model. First, the importance of each of the explanatory variables will be assessed by carrying out statistical tests of the significance of the coefficients. Then the overall goodness of fit of the model will be tested (Agresti, 1996). The Pearson's Chi-square, the likelihood ratio tests (LRT), Hosmer and Lemeshow Goodness of fit Test and the Wald tests are the most commonly used measures of goodness of fit for categorical data (Hosmer and Lemeshow, 1989).

a. Goodness of Fit of the Model

Assessing goodness of fit involves investigating how close values are predicted by the model with that of observed values (Bewick et al., 2005). The comparison of observed to predicted values using the likelihood function is based on the statistic called deviance.

$$D = -2\sum_{i=2}^{n}\left[y_i \ln\left(\frac{\hat{p}_i}{y_i}\right) + (1-y_i)\ln\left(\frac{1-\hat{p}_i}{1-y_i}\right)\right] \qquad 3.6$$

For purposes of assessing the significance of an independent variable, the value of D are compared with and without the independent variable in the equation as given below:

$$D = D_o - D_L$$

Where D_0 -deviance of model without the explanatory variable and D_1- deviance of model with the explanatory variable included. D has a chi-square distribution with degree of freedom equal to the difference between the numbers of parameters estimated in the two models.

b. Likelihood-Ratio Test

The G^2 test statistic is defined as two times the natural log of the ratio of likelihood functions of two models evaluated at their Maximum Likelihood Estimates (MLEs). The likelihood-ratio test uses the ratio of the maximized value of the likelihood function for the full model (L_1) over the maximized value of the likelihood function for the reduced model (L_0). Therefore, the likelihood-ratio test statistic is given by:

$$G^2 = -2\ln\left[\frac{L_0}{L_1}\right] = -2\{\ln L_0 - \ln L_1\} \qquad 3.7$$

where L_0 is the likelihood function of the null model and L_1 is the likelihood function of the full model evaluated at the MLEs. This natural log transformation of the likelihood functions yields an asymptotically chi-squared statistic with degree of freedom equal to the difference between the numbers of parameters estimated in the two models (Menard, 2002).

c. The Hosmer and Lemeshow Test Statistic

This goodness-of-fit statistic is used to assess the fit of a logistic regression model. Hosmer and Lemeshow"s goodness of fit test divides subjects into deciles based on predicted probabilities and then computes a chi-square from observed and expected frequencies. Using this grouping strategy, the Hosmer-Lemeshow goodness-of-fit statistic, $\hat{C}$ is obtained by calculating the Pearson chi-square statistic from the gx2 Table of observed and estimated expected frequencies. A formula defining the calculation of $\hat{C}$ is as follows:

$$\hat{C} = \sum_{k=1}^{g}\frac{(O_k - E_k)^2}{V_k} \qquad 3.8$$

Where $E_k = nP_k, V_k = nP_k(1-P_k)$, g is the number of group, $\mathbf{O_k}$ is observed number of events in the k^{th} group, $\mathbf{E_k}$ is expected number of events in the k^{th} group, and $\mathbf{V_k}$ is a variance correction factor for the k^{th} group. If the observed number of events differs from what is expected by the model, the statistic $\hat{C}$ will be large and there will be evidence against the null hypothesis that the model is adequate to fit the data. This statistic has an approximate chi-square distribution with (g-2) degree of freedom.

d. The Wald Test

For each explanatory variable in the model there will be an associated parameter. The Wald test, described by Agresti, 1996; is one of a numbers of ways of testing whether the parameters associated with a group of explanatory variables are zero. If for a particular explanatory variable, or a group of explanatory variables, the Wald test is significant, then would conclude that the parameters associated with these variables are not zero, so that they should be included in the model. If the Wald test is not significant then these variables can be omitted from the model. Wald X^2 statistics can be used to test the significance of individual coefficients in the model and are calculated as follows.

$$Z^2 = \left(\frac{\hat{\beta}}{se(\hat{\beta})}\right)^2 \sim X^2(1) \qquad 3.9$$

Each Wald statistic is compared with a X^2 distribution with 1 degree of freedom.

e. R Squared Statistic

A number of measures have been proposed in logistic regression as analog to R^2 in multiple regressions. The maximum value that the Cox and Snell R^2 attains is less than 1.The Naglekerke R^2 is an adjusted version of the Cox and Snell R^2 and covers the full range from 0 to 1, and therefore it is often preferred, R^2 statistics can be used to indicate how useful the explanatory variables are in predicting the response variable (Bewick et al., 2005).

$$R_{cs}^{\ 2} = 1 - \exp\left(-\frac{2}{n}[D - D(\text{model with the variable})\right) \quad 3.10$$

The Naglekerke measure is given as follows:

$$R_N^{\ 2} = \frac{R_{cs}^{\ 2}}{R_{max}^{\ 2}} \text{ , where } R_{max}^{\ 2} = 1 - \exp\left[2(n)^{-1}D(\text{model with the variable.}\right] \quad 3.11$$

vi. *Outliers and Influential Cases*

The observed response for a few of the cases may not seem to correspond to the model fitted to the bulk of the data. Cases that do not follow the same model as the rest of the data are called outliers, and identifying these cases can be useful. Single cases or small groups of cases can strongly influence the fit of logistic regression model. The most useful and important method of perturbing the data is deleting the cases from the data one at a time. Cases whose removal causes major changes in the analysis are called influential (Sanford, 2005).

DFBETA(S) is a diagnostic measure which measures the change in the logit Coefficients for a given variable when a case is dropped. If DFBETAs is less than unity it implies no specific impact of an observation on the coefficient of a particular predictor variable, while DFBETA of a case is greater than 1.0, is considered as potential outlier.

Cook's distance is a measure of the influence of a case. It is a measure of how much the residual of all cases would change if a particular case were excluded from the computation of the regression coefficients. Cook's distance less than unity shows that an observation had no overall impact on the estimated vector of regression coefficients β.

Analog of Cook's influence statistics of a case greater than 1.0 indicates that a potential outlier, while the value of the leverage statistic less than one shows that no subject has a substantial large impact on the predicted values of a model.

Multicollinearity: refers to a situation where there is either an exact or approximately exact linear relationship among the predictor variables. In other words Multicolinirety is the degree of redundancy or overlap among explanatory variables. The existence of multicollinearity makes it hard to get coefficient estimates with small standard error (Gujarati, 2004).

IV. Results and Discussion

Results in this chapter are presented in two separate sections. The first section displays the descriptive results and the second section reveals results of the Logistic Regression Model.

a) Descriptive Results

During the 2011 Ethiopian DHS, complete information regarding occupational status is collected on a total of 2,858 youths aged between 15-24 years old. Thus, the result shows that about 298 (10.4 percent) of the young population is jobless as displayed in the Table 4.1 below.

Table 4.1 : Shows the Number and Percentage Distribution of occupational Status in Ethiopia (EDHS, 2011)

		Number	Percent
Occupational status	Employed	2560	89.6
	Unemployed	298	10.4

b) Bivariate Results

As shown Table 4.2 below, employment status of youth is significantly associated with region of residence (P value<0.05). The higher (33.6 percent) among unemployed youth is observed in Amhara region followed by Tigray (25.5%). Likewise, employment status of youth is also significantly associated with exposure to mass media (p-value<0.05). Accordingly the highest prevalence (96.6 percent) among unemployed youth is resided to rural parts of the country.

Similarly, childhood immunization status is significantly associated with availability of electric power (p-value<0.05). Accordingly, high prevalence (90.6 %) among unemployed youth is those whose community has no electric power. Table 4.2 also shows that the proportion of employment status of youth varies significantly with access to market information (P-value<0.05). With regard to this, the higher (68.9%) of the unemployed population has no access to market information. According to the 2011 Ethiopia DHS, youth employment status is also significantly differs with educational level (P-value<0.05). The higher (54.2 percent) of unemployed youth have no educational background.

Previous Sector of participation is significantly associated with youth employment (P-value<0.05). The higher (90.9 percent) among unemployed youth have no work experience. Moreover, sex of the youth is significantly associated with his/her employment status (P-value<0.05). The higher (88.3 percent) of unemployed youth are female.

Table 4.2 : Description of Socio-economic and Demographic factors affecting occupational status of Ethiopian youths (EDHS, 2011)

Covariates		Percent within Occupational Status		Chi-square (P-Value)
		Employed	Not employed	
Region of residence	Tigray	16.0	25.5	5.64 (0.00*)
	Affar	3.5	2.0	
	Amhara	11.1	33.6	
	Oromiya	14.2	20.5	
	Somali	2.8	0.7	
	Benishangul-G.	13.7	7	
	SNNP	13.8	8.1	
	Gambela	9.5	1.3	
	Harari	6.7	0.7	
	Addis Ababa	4	0	
	Dire Dawa	4.6	0.7	
Place of residence	Urban	21.6	3.4	51.83 (0.00*)
	Rural	78.4	96.6	
Educational status of household head	No education	48.5	57	82.22 (0.00*
	Primary	41.4	42.3	
	Secondary	5.8	0.7	
	Higher	4.4	0%	
Sex of the youth	Male	77.7	11.7	16.21 (0.00*)
	Female	22.3	88.3	
Access to electric power	No	72.9	90.6	73.01 (0.00*)
	Yes	22.2	2.0	
Wealth index of the family	poor	38.7	62.8	56.31 (0.00*)
	medium+	61.3	37.2	
Access to market information	No at all	58.1	68.9	81.92 (0.00*)
	Some times	26.6	25.0	
	Always	15.3	6.1	
Sector of participation in the past	No	85.2	90.9	15.25 (0.00*)
	Informal	11.8	7.4	
	Formal	3.0	1.7	
Youth's educational status	No education	33.8	54.2	77.35 (0.00*)
	Primary	44.9	41.7	
	Secondary +	8.1	1.7	

**Significance ($p<0.05$)*

c) Results of Binary Logistic Regression Model

A Binary Logistic Regression Analysis is used to identify the most important determinant factors which are associated with the occupational status of youth in Ethiopia. Before giving interpretation to results of the model, we should check whether or not the model fits the data well.

i. *The Hosmer-Lemshow Test*

If the p-value of the Hosmer-Lemshow Goodness of fit test statistic is greater than $\alpha=0.05$, we fail to reject the null hypothesis that there is no difference between observed and predicted values, implying that the model fits the data at an acceptable level. The value of Hosmer-Lemshow statistic has chi-square value of 8.135 and a p-value of 0.420 indicating that the model has a good fit as shown in Table 4.3. This shows that there is no significant difference between the observed and predicted model values and hence the model fits the data well.

Table 4.3 : Hosmer and Lemshow Test

Chi-square	df	Sig.
8.135	8	.420

ii. *Interpretation for Results of a Binary Logistic Regression Model*

After the assessment/ evaluation of the overall model and goodness of fit test, statistical tests of individual predictors are conducted to identify the determinants for occupational status of youth in Ethiopia

As shown in Table 4.5 below; Region of residence, Educational status of the youth, Access to market information, Age, Gender, Access to electric power, wealth index and Access to market information are found to be the most important determinant factors. Whereas, the other variables such as Educational status of household head, Place of residence, Family size and Sector participation in the past are not significantly associated with occupational status of youths in Ethiopia.

Youths occupational status is significantly vary with his/her educational status ($p<0.05$). As a result, those who are not educated and primary level are 5.1 percent and 81.5 percent more likely non-occupational respectively, compared to those whose educational level is secondary & above controlling for the other variables in the model.

The result also shows that youths occupational status is significantly differs with age of the youth ($p<0.05$). Accordingly, a one unit increment of age decreases the likelihood of being unemployed among youth by 15%, controlling for the other variables in the model.

As shown table below, occupational status of youths is also significantly differ with respect to region of residence ($p<0.05$). Concerning to this, those that resides to Amhara, Tigray and Oromia regional states are 57.2%, 16.5% and 28.8% more likely to be non occupational respectively compared to youths in Addis Ababa controlling for the other variables in the model.

Access to market information is also significantly associated with youths' occupational status as shown in the table below. Thus those who have this access are 86% less likely to be non occupational compared to those who have not getting the access, keeping the other variables constant.

Similarly, youth's occupational status in Ethiopia is significantly differs with respect to family wealth index. With respect to this those whose family is poor are 30.1% more likely unemployed compared to those whose family are medium and above. As shown in the table below, access to electric power is also significantly associated with their current occupational status. Concerning this, those who are in a community have electric power are 86% less likely non occupational compared to those who are not, controlling for the other variables in the model. Sex is another demographic variable affecting employment status of the youth. Concerning to this, females are 60.8 % more likely unemployed compared to males.

Table 4.5 : Logistic Regression Model result of Determinants of youth unemployment Status in Ethiopia (EDHS, 2011)

Covariates	$\hat{\beta}$	S.E.	Wald	df	Sig.	Exp($\hat{\beta}$)	95% CI for Exp($\hat{\beta}$)	
							Lower	Upper
Region of residence	-	-	97.330	10	.000*	-	-	-
Tigray	1.642	.757	4.709	1	.030*	5.165	1.172	22.759
Afar	.938	.875	1.150	1	.283	2.555	.460	14.192
Amhara	2.358	.755	9.749	1	.002*	10.572	2.406	46.459
Oromia	1.665	.758	4.825	1	.028*	5.288	1.196	23.374
Somali	.415	1.054	.155	1	.694	1.515	.192	11.958
Benishangul gumuz	.397	.781	.258	1	.611	1.487	.322	6.875
SNNP	.735	.774	.903	1	.342	2.086	.458	9.506
Gambela	-.880	.910	.936	1	.333	.415	.070	2.466
Harari	-.391	1.043	.140	1	.708	.677	.088	5.224
Dire Dawa	-17.502	6.203E3	.000	1	.998	.000	.000	.
Addis Ababa (ref)								
Age	-.095	.037	6.603	1	.010*	.909	.845	.978
Youth's educational level	-	-	8.102	2	.017*	-	-	-
No	.050	.788	1.004	1	.450	1.051	.224	4.927
Primary	.596	.764	6.09	1	.035*	1.815	.406	8.107
Secondary + (ref)								

Sex								
Female	.475	.231	4.241	1	.039*	1.608	1.023	2.528
Male (ref)								
Access to market information	-	-	6.457	2	.040*	-	-	-
Always	-1.936	.767	6.366	1	.012*	.144	.032	.649
Sometimes	-1.967	.805	5.974	1	.015*	.140	.029	.677
No at all (ref)								
Wealth index								
Poor	.579	.161	12.910	1	.000*	1.784	1.301	2.445
Medium and above (ref)								
Access to electric power								
Yes	-1.997	.566	12.457	1	.000*	.136	.045	.411
No (ref)								
Constant	-17.928	.0575	.000	1	.998	.000		

**Significance ($p<0.05$) ref=Reference category.*

*DFBETA*s are all less than unity implying no specific impact of an observation on the coefficient of a particular predictor variable. The result also shows that cook's distance values are all less than unity showing that an observation had no overall impact on the estimated vector of regression coefficients β. The result of the maximum value of analog of Cook's influence statistics for each predictor variable is also less than 1.0. Therefore, there is no potential influential observation.

Multicollinearity in logistic regression is detected by examining the standard errors for the β coefficients. A standard error larger than 2.0 indicates numerical problems, such as multicollinearity among the independent variables. However, none of the coefficients of the independent variables in this analysis had a standard error larger than 2.0.

V. Conclusions and Recommendations

a) Conclusions

The aim of this study is to examine the factors which determine youth unemployment in Ethiopia and suggest way forward towards reduction of the problem. The study uses Binary logistic regression model to analyze the determinants of unemployment in Ethiopia. The dependent variable of the study was youth employment status which was categorized into two categories employed and unemployed. From the findings of this study, this study concludes that Educational status, Age, Region of residence, Access to electric power, Gender and Access to market information, are all significant factors in explaining the difference in youth employment status in Ethiopia.

The findings of the study show that gender is significant determinant of unemployment and male youth stand a high chance of being employed over being unemployed as compared to female youth. Literacy rates are especially low among women. Participation rates also differ more widely between men and women. Reasons for inactivity include home making for rural women and most often being a student for urban men. Women marry earlier than men – a reflection of the different opportunity structure for men and women. Firstly, women may leave the labour force when marrying, which would explain the number of women unpaid family workers. Secondly, the expectation of marrying early may discourage women's education. The low literacy rate among young women, may, in turn explain their higher level of unemployment, as well as their high participation in the informal economy.

Regional location of the youth people is found be significant. Many factors contribute to the disadvantaged position of youth in the labour market and to the unequal distribution of work between different regions of youth. The current policy emphasis to address the employment challenge through the promotion of the private sector, expanding investment to improve the productivity of agriculture and introducing off-farm non-agricultural activities for the purpose of employment diversification that result the overall macroeconomic stability in the country. The role of the private sector has improved in recent years, but compared to the daunting economic and social problems the country is experiencing, much remains to be done.

Compared to the fast growth in the labour force, the jobs created by medium and large-scale private investments over the last decade are not enough to absorb the number of young people who enter the labour market every year. As long as the realization of the investment projects remains sluggish and consequently also the number of jobs created every year, the opportunities for youth will be narrow.

Labour market information and counselling play an important role in providing the efficiency of the labour market. Labour market information is scarce, and moreover is not available to all job seekers. Lack of such services puts new entrants in the job market at a disadvantage. The most popular means of seeking a job are trying to establish an enterprise, checking work sites, relatives and friends and looking at the advertisement board. A higher percentage of youth search for a job on an advertisement board compared to all unemployed and less try to establish an enterprise.

Concerning education, although there is a growing population of high school educated workforce, the majority of the unemployed are uneducated or with limited education. The results on education were supported by the results on impact of skills on youth employment status where unskilled youth were found to be more likely unemployed over being employed.

b) Recommendations

From the findings the study several recommendation are made, first, the government and policy makers should review job market laws and regulation in order to promote smooth transition of youth from education to job market. The findings of the study show that skilled youth and those with more that primary school education are likely to be unemployed over being employed. It is important for the government to create specific interventions especially in the creation of more formal jobs and strengthening job market regulation relating to youth people to ensure that all youth with education or skills realize their investments in education and contribute to the country development.

The findings of the study also show that gender imbalance is a problem in the job market, the results indicate that male youth are at the advantage side to be employed over being unemployed. The government and policy makers should strengthen the laws and regulation relating to gender balance in the job market in order to give equal chance to the youth with the same level of skills or education.

The study also recommends that the government should facilitate formalization of informal employment sector in order to motivate more youth to engage in different activities which are currently considered to be informal. This will help to reduce the problem of youth unemployment especially on skilled and educated youth in both urban and rural areas. The government should give more support and emphasis on those regions with high rates of unemployment. Additionally, further research on socio-cultural practices, distribution of education, women's workload, and other related factors should be emphasized. In order to decreases unemployment levels in regions with lower levels, the socio-economic status of the regions has to be raised. As a consequence, differences in the level of unemployment between regions would be reduced, and job opportunity would be more uniform across all regions.

Efforts should be made to improve youth who live in rural parts of Ethiopia by providing the access of electric power. Because electric power is a powerful service to establish private institutions so that job opportunities to the urban young population would be increased.

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