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Youth unemployment and its main determinants in Ethiopia

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Abstract
Unemployment is a major social problem in Ethiopia. Throughout the world, the youth is the locomotive of national development. However, recently youth unemployment is both a national and global problem. The main objective of the study was to identify the determinants of youth unemployment in the Wolaita Zone. The study adopted cross-sectional data on youth unemployment. The primary data was collected from 379 sample respondents through an interview questionnaire in the Wolaita zone. To achieve the objective, the study has employed a binary logistic regression model. The descriptive statistics analysis results revealed that about 78.1 % of the youth are unemployed while 21.9 % are employed. Based on the result of the logit model eight out of nine independent variables were found significant determinants of unemployment; from which, age, sex, alcohol-abusing, access to credit use, and educational level negatively affects youth unemployment whereas, marital status, Job information, migration positively affects unemployment. The econometric results suggested the need for the government goes board on creating job opportunities for young youths. It also recommended that the government should facilitate the formalization of familiar employment which reduces the problem of youth unemployment, especially among skilled and educated youth and all secondary schools should have an active partnership with employers. As well as the government must increase the availability of initial working capital, the identification of profitable business areas, and provision of practical training for young youths to be engaged in their own business.

Keywords
Determents, Youth Unemployment, Logistic Regression Model, Ethiopia

Introduction

Throughout the world, the youth is the locomotive of national development. However, recently youth unemployment is both a national and global problem. Currently, the novel coronavirus pandemic (COVID-19) is also causing a tremendous economic crisis, increasing the dropout of workers from various institutions in both developing and developed countries. This escalates the unemployment rate to an unmanageable number leading to a significant impact on poverty, and homelessness and affecting family cohesion. It causes hopelessness and other social evils such as crime, violence, break up of families, alcoholism, etc.

Global youth unemployment stands at 17.7%. In sub-Saharan Africa, youth unemployment is estimated to be about 22.8% (Organisation 2020). They have the potential to stimulate economic growth, social progress, and overall national development. Unemployment is described as the condition of people who are without jobs. The International Labour Organization (Matandare 2018) report policies define, unemployment as numbers of the economically active population who are without work, but available for and seeking work,

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including people who have lost their jobs and those who have voluntarily left work.

According to the (Ulku and Georgieva 2022, Yildirim, Yildirim et al. 2022)report youth unemployment constitutes a social problem that is posing major challenges to most African governments irrespective of their socio-economic development. As explained by(Ajufo 2013), unemployment has been identified as one Recently Youth unemployment is both a global and African problem. Global youth unemployment stands at 12.7%. In North Africa, youth unemployment is estimated to be about 27%, while for Sub- Saharan Africa it is 12.8% (Van Aardt 2012).

Youths in Africa face the same renowned difficulties outlined these challenges be high unemployment rates, limited access to training and education vulnerability to contracting HIV/AIDS, and engaging in criminal activities. Unemployment in Africa is associated with social, economic, political, and psychological consequences. Psychological, unemployment usually experiences trauma, anger, frustration, low self-esteem, negative life satisfaction, unhappiness, and mental disorder including depression and acute stress. Unemployment has also contributed to the increasing feminization of poverty among young of survival and leads to trafficking for they go across the Middle East and other parts of the world (Assaad and Roudi-Fahimi 2007).

Youth follows the UN definition as those people between the ages of 15 and 24 years, as opposed to Ethiopia's central statistical agency (CSA)(Ababa 2011, Bezu and Holden 2014) definition of those persons between the ages of 15 and 29 years. The Millennium Development Goals as well as the United Nations report define youth as those individuals between the ages of 15 to 24 years. While this constitutes the generally accepted international standard used to define youth, a young person is often characterized as such based on socioeconomic, cultural, or institutional contexts that vary by country and individual situation. Youth make up a major proportion of the population, especially in developing countries. There is 1.2 billion youth between the age of 15 and 24 years in the world. About 18% representation of the world population(Economic and Affairs 2004).

In Ethiopian youth unemployment impose a heavy social and economic cost, which results not only in low economic growth but also in the erosion of the tax base, increased welfare cost, and unused investment in education and training. It is very damaging for young people and is associated with social instability, conflict and greater poverty, crime, and many social problems. The problem of youth unemployment in Ethiopia challenges national development (Mohammed, Gebeyehu et al. , Melese 2018, Abdurahman and Ahmed 2021). This study seeks to identify the major determinants of youth unemployment in the Wolaita Zone.

Research methodology

Research Design

The study adopted a cross-sectional survey research design to identify the major determents of youth unemployment in the Wolaita Zone.

Data sources and method of data collection. The sources of the data for this study were both primary and secondary data sources. To get the background information of respondents in the study area, secondary data were reviewed from various sources such as reports and other records. Other published and unpublished documents, the internet, and previous findings which are found to be relevant to the study will be also used. The other related information and primary data were collected from unemployed youth (sample) in the study area by using questionnaire interviews. It includes data on demographic characteristics, educational level, household income, marital status, migration status, and so on. The target population consists of professional unemployed and employed youths at the time of the survey. Questionnaires, observations, and focused group discussions were used to collect data. In order to prove the validity of the instrument pilot testing for the questionnaire was done before the main data collection.

Sampling Techniques for this study. In this study, a stratified sampling technique was used to select the sample size. Accordingly, some kebeles were selected from the Wolaita zone and we used a stratified sampling method. The samples were distributed proportionally to each Woredas in the zone. Finally, the estimated number of samples from the target population was 379.

Sample size determination In conducting research that requires taking a sample, we always have the stage of deciding the sample size. The decision is important because taking too large a sample implies a waste of resources while too small a sample reduces the usefulness

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of the results. In order to have an optimum sample size, there are a number of issues/points one has to take into account. Some of the issues are objective of the research, design of the research, cost constraint, and degree of precision required for generalization see Tesfaye and Getachew (2018) .

Prior to the actual data collection, emphasis will be made on the determination of sample size that is mainly dependent on the purpose of the study, available resources, and precision (variance) required. Often, the sample size is expressed in terms of variance. When the variance is unknown, (Cochran 1977)listed four ways of estimating population variances for sample size determination: (i) take the sample in two steps, and use the results of the first step to determine how many additional responses are needed to attain an appropriate sample size based on the variance observed in the first step data; (ii) use pilot study results; (iii) use data from previous studies of the same or similar population; (iv) estimate or guess the structure of the population assisted by some logical mathematical results.

Based on the above information, there are several formulas developed for sample size calculation that conforms to different research situations. According to the sample size determination formula [1], that was adopted in this study (Cochran 1977).

$$n=\frac{\frac{(z_{\alpha/2})^2 p(1-p)}{d^2}}{1+\frac{1}{N}\left[\frac{z_{\alpha/2}{}^2 p(1-p)}{d^2}-1\right]} \qquad [1]$$

Where: n= the sample size of household heads; N=the total number of households in the study area. Where d is some margin of error to tolerate in estimation; P is the proportion of unemployed youth; N is the total number of youth unemployed; n is the total sample size; Z is the value of standard normal distribution for a given level of significance (α). In fixing this sample size will be, d= 0.05 to increase precision, α=0.05, and P=0.05 were used.

Table 1. *The estimated sample size*

No.	Woreda/town	Stratifications	Employed in 2021	Unemployed	Sub-Total population	Selected samples
1	Sodo zuria woreda	Strata-1	360	3441	3801	58
2	Areka town	Strata-2	1007	3108	4115	63
3	Bodit town	Strata-3	2686	3651	6337	97
4	Humbo woreda	Strata-4	2950	3650	6600	101
5	Kindo Koyisha	Strata-5	1096	2863	3959	60
	Total		8099	16713	24812	379

Data Source: Wolaita Zone (unpublished document), 2022

Definition of Variables and Hypothesis

The dependent and independent variables that were considered to affect the status of unemployment status of youth were selected based on experiences from the available similar studies like from published journals and different kinds of literature with similar studies.

The response variable. The response variable of this study is the unemployment and employment status of youths in some selected woredas, in Wolaita Zone. According to (Dagume and Gyekye 2016, Basta, Karakonstantis et al. 2019, Gazzola and Mazzacani 2019, Lysova, Allan et al. 2019, Chen, Woo et al. 2020, Chodorow-Reich and Coglianese 2021) definition, those persons who are simultaneous without work, currently available for work and seeking work are considered unemployed.

For the purpose of our study, the response variable, unemployment, and employment status of youths are classified as unemployed youth (those youths who were not working for a wage during the period of the survey) and otherwise employed youth. Therefore, the outcome for the i^{th} youth is represented by a random variable Y_i with two possible values coded as 1 and 0. In view of this, the outcome of the i^{th} youth, $Y_i$was measured as a dichotomous variable.

$$y_i=\begin{cases}1=if\ i^{th}\ youth\ is\ unemployed\\ 0\qquad =otherwise\end{cases} \qquad [2]$$

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Youth unemployment. It is obvious that unemployed youth people use different mechanisms to achieve their livelihoods. Unemployment affects youth people's income, which in turn affects their established lifestyle and social relations because wage earnings are not the base only to sustain an established lifestyle and maintain social engagements, but it also promotes self-reliance and recognition which many youth people value most(Fric 2019, Morgan and Wang 2019, Norström, Waenerlund et al. 2019, Wolf, Metzing et al. 2022). In order to deal with the consequences of unemployment young people have used different mechanisms such as going back to school to improve their education levels and competencies, migration, skills, family assistance, state provisions, and delaying adulthood responsibilities such as marriages(Baert and Verhaest 2019, Kim and Scheller-Wolf 2019).

Independent variables. The major independent variables that are influencing and affecting the unemployment status of the youth and their associated hypotheses of the research study with respect to each one of the explanatory variables are presented below.

Sex/gender: It is a dummy variable representing the sex of a respondent represented as 1 for males and 0 for females. Males are in a better position to have employment than female ones because in Ethiopia females have a lack of chance for education in the family (Anbacha and Kjosavik 2019, Cuervo and Miranda 2019, Krisch, Averdijk et al. 2019).

Educational level: Educational levels of unemployment status of youth were measured by using categories. This indicator shows the employment rates of people according to their education levels: below upper secondary, upper secondary non-tertiary, or tertiary. The employment rate refers to the number of persons in employment as a percentage of the population of working age (Ettner 1996, Machin and Manning 1999, Nurmi, Salmela-Aro et al. 2002, McArdle, Waters et al. 2007, Awad and Hussain 2022, Meurisse, Lajot et al. 2022).

Migration status. Migration is one of the components of population dynamics which can affect the population size of an area when its volume is significant(Marzana, Damia et al. 2019, Yu, Lou et al. 2019). The report produced by CSA presents only inward movements of the population while it is necessary to have both in the ward and out ward movements as it is the balance of these two movements that would show us the influence of migration on population size.

Access to credit. Is defined as the combination of knowledge, skills, attitudes, and especially behaviors that people need to make sound personal finance decisions, suited to their social and financial circumstances. To address the challenge of low financial capabilities of youth and to equip youth with the confidence to make sound financial decisions, effectively manage financial services, and develop and work toward a tangible savings goal, policymakers should develop national financial-literacy strategies for youth, as well as entrepreneurship programs that increase the financial capabilities of youth unemployed(Choudhry, Marelli et al. 2012, Elzahi Saaid Ali 2022, Senou, Gbinlo et al. 2022, Shihadeh 2022).

Alcohol abuse. The relationship between job loss and alcohol use is a reciprocal process, and therefore, both alcohol abuse and unemployment can be viewed as causal factors. The reciprocal causation hypothesis has been presented in studies in which the findings have given support to both the drift and the social causation hypothesis (Dooley, Catalano et al. 1992, Compton, Gfroerer et al. 2014, Dubey, Ghosh et al. 2020, Mokona, Yohannes et al. 2020). The contradictory findings regarding the relationship between unemployment and drinking behavior suggest that the reciprocal causation hypothesis reflects most accurately the reality.

Method of data analysis

Binary logistic regression analysis. We used a binary logistic regression model to identify major determinants of youth unemployment of unemployed youths in the study area. In the terminology of logistic regression analysis, the odds of success are defined to be the ratio of the probability of success to the probability of a failure. Let Y be a vector of the response variable with $y_i = 1$ if the i^{th} youth understudy is unemployed and $y_i = 0$ if the i^{th} youth is employed, X is an $n\ (k+1)$ design matrix of explanatory variables, β is a $(k+1)\ 1$ vector of parameters. The data layout for $X$is given as follows.

$$X = \begin{bmatrix} 1 & x_{11} & x_{12} & . & . & x_{1k} \\ 1 & x_{21} & x_{22} & . & . & x_{2k} \\ . & . & . & . & . & . \\ 1 & x_{n1} & x_{n2} & . & . & x_{nk} \end{bmatrix} \qquad [3]$$

X without the leading column of 1s, is termed a predictor data matrix. Let the conditional probability

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that the outcome is present (probability of success) be given by:

$$\prod = \frac{\exp(x'\beta)}{1+\exp(x'\beta)} \quad [4]$$

The odds of success are calculated by

$$adds(y=1) = \frac{\prod}{1-\prod} = \exp(x'\beta) \quad [5]$$

In logistic regression analysis, it is assumed that the explanatory variables affect the response through a suitable transformation of the probability of success. This transformation is a suitable link function and is called the logit-link of, which is defined as:

$$\log it(\prod) = \log\left(\frac{\prod}{1-\prod}\right) = \log(e^{X'\beta}) \quad [6]$$

Results and Discussion

Unemployment Status

When the data collection was undergone the respondents were specifically requested about their employment status earlier to the survey time. During the survey time the maximum number of the respondents was unemployed from the total sample size of 379 interviewed respondents 296(78.1 percent) were unemployed and 83(21.9 percent) of the respondents were employed at the time of data collection period as shown in table-2 below. *T*able 2 indicates there is no difference between unemployed youth with respect to gender/sex in the study area. The result indicates most of the employed youth are male. This implies that the unemployment status with respect to sex, female unemployment status is less than the males' unemployment status. Although the chi-square test also indicates that there is no association between gender and unemployment status at a 5 percent significant level and the unemployment status of females is smaller than males.

Table 2. *Unemployment status of respondent*

Sex of respondents * employment status Cross tabulation					^{2}-	p-values
	Count	Employment status		Total	value	0.224
		Employed	Unemployed		1.476	
Sex	Female	27	118	145		
	Male	56	178	234		
	Total	83 (21.9%)	296 (78.1%)	379		

Econometric Analysis

Post-Estimation diagnostic test checking - Multicollinearity test. The variables included in the model were tested for the existence of Multicollinearity if any. Contingency coefficient and variance inflation factor were used for the Multicollinearity test of dummy and continuous variables respectively.

According to (Table 3), as a rule of thumb, continuous variables having a variance inflation factor (VIF) of less than 10 are believed to have no Multicollinearity and those with a VIF of above 10 are subjected to the problem and should be excluded from the model. The computational results of the variance inflation factor (Table 3) confirmed the non-existence of association between the variables and were included in the model.

When we see (Table 4) the contingency coefficient value ranges between 0 and 1, and as a rule of thumb variable with a contingency coefficient below 0.75 shows a weak association, and a value above it indicates a strong association of variables. The contingency coefficient for the dummy variables included in the model was less than 0.75 which did not suggest Multicollinearity to be a serious concern. In this study, the contingency coefficient of dummy variables is less than 0.5 in the model.

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Variable	VIF	Tolerance
Family size	1.82	0.551
Income	1.79	0.557
Age	1.03	0.969
Mean VIF	1.55	

Table 3. *Variance Inflation Factor (VIF) for continuous variable*

	Sex	Marital_s	Addit_al	Credit
Sex	1.000			
Marital_s	0.1559	1.000		
Addit_al	0.9110	0.2598	1.000	
Credit	0.4201	0.6277	0.2428	1.000

Source: Author's computation, 2022

Table 4. *Contingency coefficient value for dummy variables*

According to (Table 3), as a rule of thumb, continuous variables having a Variance Inflation Factor (VIF) of less than 10 are believed to have no Multicollinearity and those with a VIF of above 10 are subjected to the problem and should be excluded from the model. The computational results of the variance inflation factor (Table 3) confirmed the non-existence of association between the variables and were included in the model. When we see (Table 4) the contingency coefficient value ranges between 0 and 1, and as a rule of thumb variable with a contingency coefficient below 0.75 shows a weak association, and a value above it indicates a strong association of variables. The contingency coefficient for the dummy variables included in the model was less than 0.75 which did not suggest Multicollinearity to be a serious concern. In this study, the contingency coefficient of dummy variables is less than 0.5 in the model.

Econometric results

In this section, we have determined the determinants of youth unemployment in Wolaita Zone. A binary logit model was selected to identify the determinants of youth unemployment in the Wolaita Zone. The estimated binary logit model is presented in table 5 below.

Table 5. *Logistic regression analysis*

Variable	Coefficient	S.E.	z-value	p-value
Sex	-6.77	3.6487	10.03	0.000*
Age	-0.142	0.0579	-2.46	0.014
Marital status	0.0450	0.3187	2.14	0.008**
Alcohol abusing	-8.334	1.8244	-10.28	0.000*
Access to credit	-4.106	0.774	20.260	0.002*
Job information	2.153	0.694	3.921	0.087***
Migration status	3.243	0.971	12.132	0.000*
Family size	0.0517	0.1105	0.47	0.639
Educational level	-2.529	0.638	8.478	0.000***
Mother's education	0.1616	0.3064	0.53	0.598
Constant	5.9040	11.474	0.04	0.970

* =Significant at 1%, **= Significant at 5%, ***= Significant at 10%
Source: author, 2022

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From results, indicate that the migration status of individuals affects their unemployment status positively at a 1% significant level. It seems that non-migrants may have a better opportunity for education and another advantage, while migrants particularly from rural areas who had a low level of education coupled with weak social networks could increase their risks of being unemployed. Furthermore, some information gathered from the keynotes of the interview also implies that, due to the expansion of socio-economic sectors, young people migrated to the town in search of employment opportunities, education, and other services. These days it is common to see newcomers in the center of the town and some other places in the town', the place where daily laborers search for a job.

The educational status of an individual could be a key factor that affects the employment status of youth in the study area. Those people having high educational levels were more productive they have relatively high opportunities and they were highly salaried comparatively. The result indicates the probability of the educational level of unemployed youth was statistically significant at 1%.

From results indicate that job information has a significant impact on the likelihood of youth unemployment status. The job information was statistically significant at 1% of the level of significance. This indicates that job information was one of the main determinants for unemployed youth in the study area.

Access to credit services is also statistically significant and negatively related to unemployment status. It is quite clear that a young youth utilizing credit is able to either finance to trade different things and other immediate food and non-food requirements or invest in different income generating activities expecting profit in the long run which ultimately leads them to exit youth unemployment. Increased access to the credit market enhances unemployed youth welfare through the provision of investment to boost youth income as well as smooth consumption which could significantly influence unemployed youth income by helping its members to tap economic opportunities, thereby assisting them to get out of the unemployment rate.

Conclusions and recommendations

The main objective of this study was to identify determinants of youth unemployment in the Wolaita zone, Ethiopia. In this study, we applied the Binary logit regression model. In the model, youth unemployment status of youth was taken as the outcome variable and nine independent variables were included.

The major determinant variables for youth unemployment in the study area were age, sex, marital status, alcohol abuse, job information, access to credit use, migration from rural to urban and educational level. Based on the result of the logit model eight out of nine independent variables were found significant determinants of unemployment; from which, age, sex, alcohol abuse, access to credit use, and educational level negatively affect youth unemployment whereas, marital status, Job information, and migration positively affects unemployment. It revealed that youth who have no access to credit use was more unemployed. Thus, intervention is required to finance youth through the participation of all private investors and government offices. The educational level of the youth has a positive effect on youth unemployment and is statistically significant. It revealed that years spent on education or investment in education acts as better signaling of productivity of the youth, thereby it increases the probability of being employed. The marital status of youth indicates has positively affected unemployment. This indicates that female youths are more likely to be unemployed compared to males which means females have less chance to be employed than males because males youth were reference category in this study.

Alcohol abuse of youth has a negative effect on youth unemployment. Access to job information is significantly associated with youth employment status. Youth who have more job information for job searching indicators of the playing field are more likely to be employed, according to researchers at the Wolaita Zone. The government or concerned bodies should take necessary measures to eliminate young unemployment by expanding the Small Enterprises training program and assisting them with job placement, land, financing, and training for those who are jobless. To reduce rural-urban youth mobility, it is preferable to enhance rural livelihoods by using modern agricultural technologies.

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