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Determinants of Urban Unemployment in Injibara Town, Awi Zone, Amhara Region, North Western Ethiopia

Yibeltal Bantie Kebie[1,], Ayaleneh Mossie Tekalign[1]*

[1]Department of Economics, College of Business and Economics, Debre Markos University, Debre Markos, P.O.Box 269, Ethiopia,

*Corresponding Author Email: -yibeltal.bantie@gmail.com, yibeltal_bantie@dmu.edu et

Abstract

Identifying the determinants of urban unemployment in Injibara town using cross sectional data obtained from 397 sample respondents by distributing structured questionnaire was the main objective of this study. Simple random sampling methods was used to select the samples. Binary logit regression model was employed to identify the factors affecting urban unemployment in the study area. Unemployment was the dependent variable and 10 independent variables were taken in to consideration and age of respondents, educational level of respondents, social networking, job training, migration status and access to work place were the explanatory variables determining unemployment significantly in the study area. Access to job training, age, educational level, social networking and access to work place affects unemployment negatively and significantly but, migration status has a positive significant effect on unemployment in the town of Injibara. Therefore, in reducing unemployment rate in Injibara town, it is important to improve their educational level to enable them fit into the work environment and dynamics. To this effect, joint effort of educational institutions, labor and job creation; and other concerned offices is required. It is also important to educate people in order to improve their social communication behavior through both private and public means of communication, promoting individuals in accessing and using internet facilities, telephone, accessing and negotiating private employment companies, relatives and friend. Furthermore, it is important to create job opportunities in rural areas to uphold people from migrating to towns and cities searching for job and better life. Concerned offices such as women, youth, children and social affairs bureau, youth and sport bureau, agriculture offices could join hands to create an enabling environment including creating job opportunities in the rural areas.

Keywords: *Youth, Injibara Town, Awi Zone, Binary Logit, Unemployment, Urban*

1. Introduction

According to Ahmad (2020) as cited by Mengistu *et al.,* (2023), both personal development, economic, social and political growth of one country's is highly affected by unemployment. Unemployment can be defined as, when individuals of a country are not getting jobs, despite having both the capacity and preference to work. Unemployment is a problematic issue for many years already for governments and people especially in urban area where the world now is facing increasing urbanization and reducing unemployment is a challenging task for all economies worldwide.

Generally, at large, government revenue, countries GDP and development and specifically, it affects household income, health. As a macroeconomic problem, unemployment has both direct and figurative effect on one country's population. At individual level, it leads to problems related psychology including, frustration, hopelessness, hostility and finally moving them to the manner of criminal character (Bakare 2011). Furthermore, regarding to its long-lasting effect, unemployment always brings hardship in finance financial, multi-dimensional poverty, unable to have own house, acting against the society's tradition, isolating himself/herself from the society, losing confidence and not respecting him/herself which primarily the degrading health at society level.

According to the ILO (2019), at worldwide level nearly 172 million people were not employed in the year 2018, which represents 5.0 percent unemployment rate. In only one year the rate increases from 5.0 % to 5.6% in 2019, showing that, unemployment increases at the world level.

In our country, Ethiopia, which is one of countries with fast economic growth in Africa, economically active population that are required to sustain the overall growth of the country's economy, could not efficiently employed. That is, employment possibilities which uphold the existing working labor forces with implementing employment rules and regulations could not create by the Ethiopian government and the private entrepreneurs (CSA, 2014). Unemployment in Ethiopia was 1,733, 000 in 2020, 2,065,000 in 2021, 2,346, 000 in 2022 and 2,491,000 in 2023 (IMF, 2023). This shows that the number of unemployed people is increasing through the passage of time, thus it is important to know the factors for increasing such unemployment to find solutions.

In Amhara region, unemployment was around 17 percent in 2021. Injibara town is a town in Awi zone facing the same situations where there are no enough job opportunities created by the government, by private sector or private entrepreneurs for the urban residents. Thus, it is sometimes a must to identify the major factors affecting unemployment in order to develop promising economic policy particularly related with employment which decreases unemployment rate in Ethiopia at aggregate level and in Injibara particularly, since no studies had been conducted on the determinants of unemployment in Injibara town as far as the researchers' knowledge is concerned. Therefore, the study aims in determining the major factors affecting unemployment thereby to provide policy recommendations to curve the rising unemployment.

2. Research Methodology

2.1.Study Area Description

Injibara town which is found in Amhara region, Ethiopia was the location of this. It is the capital of Awi zone, Amhara region and located 447 kilometers from the capital city of Addis Ababa. Currently Injibara is expanding in all its surrounding areas, there is increasing migration from rural areas to the town, and also the exists large number of people actively searching for job,but not able to get required job. According to labor and enterprise, office of Injibara town (2023) the unemployment amount was 7064 in 2022 and raised to 8691 in 2023, that is unemployment is on the rise despite the town administration is working in collaboration with private entrepreneurs to reduce the unemployed number of people with creating employment opportunity for 1,457 in 2022 to 2,119 in 2023. Therefore, the main objective of this research was identifying the factors affecting unemployment in Injibara and hence to

provide policy recommendations to curve the rising unemployment.

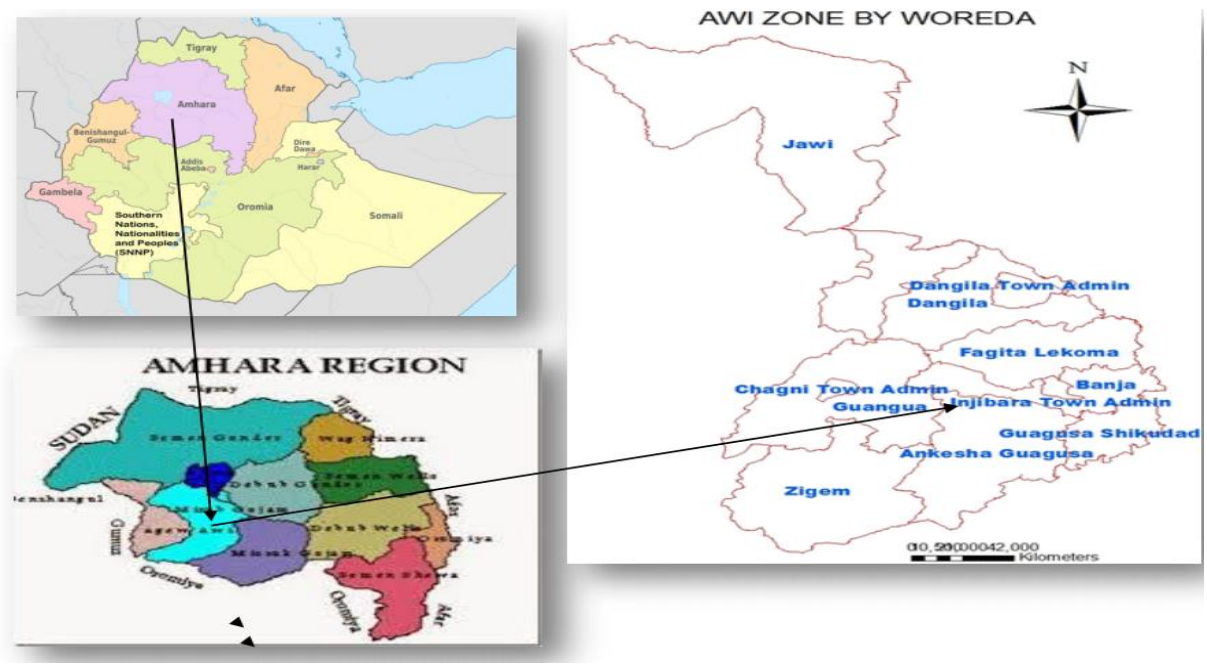

Figure 1. Map of the Study Area

Source: Injibara Town Administration Communication Office (2023)

2.2.Study Design

By using quantitative research method, this study applied a cross-sectional research design. With the current prevailing differences between people, subjects or phenomena, a cross-sectional study design is important for the interpretation and driving of inferences. Since it provides reasonable and worthy conclusions, in addition to its efficiency in terms of time and cost. The cross-sectional research design considered appropriate for this study because. As unemployment of individuals is frequent and changes overtime, the study used cross-sectional data. That is a person unemployed currently may be employed next year or a person employed this year may get unemployed next year, so cross-sectional research design is selected.

2.3. Data Types and Sources

The 2023 primary data were used in this study. Secondary data collected from published and unpublished documents were used from Injibara Town Administration Communication Office (2023). In order to collect the first-hand date from the surveyed sampled individuals, the structured questionnaire was used for this study.

2.4.Sampling Technique

The population of Injibara town was the target population of the study. Injibara town has five kebeles and the sample size was determined from these kebeles using Yemane (1967) formula. The target population was 63, 330 (Injibara municipality, 2023).

In order to select sampled respondents, simple random probability sampling method was used, in which every member has the same probability to be included as candidate samples of the population and it avoids selection biases.

2.5.Sample size Determination

The target population is homogeneous in the study area. They were either employed or unemployed. When population in which the sample to be selected were homogeneous, Yemane formula is appropriate in determining the size of the sample which are acceptable for this study. Yamane (1967) formula which is mathematically represented as: - $n = \frac{N}{1+N(e^2)}$, where n represents the size of the sample, N is representing population in Injibara town, and e is margin of error. The total population of the study area is 63,330. So $n = \frac{63330}{1+63330(0.05^2)} = \frac{63330}{1+158.325} = 397$ which is the total sample used for the study. The samples were calculated proportionally in each kebele population using $ni = \frac{Ni}{N} * n$, where, Ni=number of populations in each kebele, ni =sample size from each kebele, N =total number of people in the 5 kebeles and n = sample size. By using, the above formula the proportional number of respondents in each kebele was calculated and presented according to Table 1. The proportional sample size determination was done using a formula/calculation above. Here is the sample size from each kebele based on that calculation.

Table 1. Total population and sample of selected kebeles

S.No.	Kebele	Total Population in each kebele	Each kebele Sample
1.	01	18690	117
2.	02	10683	67
3.	03	11089	70
4.	04	14191	89
5.	05	8677	54
	Total	63330	397

Source: Own calculation based on Injibara municipality data, 2023.

2.6.Methods of Data Collection

The data used in this study were collected from cross sectional primary data, from selected respondents using structured questionnaire, which was prepared in such a way that it could assist the data collectors to obtain exhaustive information regarding with economic, demographic and social characteristics of respondents. In addition, document review using published and unpublished documents obtained from the town's communication office was used as secondary data in order to get supplementary data on the existing situation of unemployment in the town of Injibara.

2.7.Data Analysis Technique

Since unemployment of respondents is a binary variable taking a cardinal number, 1 when persons are not employed 0 otherwise. For determining the determinantal factor affecting unemployment, the Binary logit model was used. Binary outcomes model is recommended as appropriate suggested by many econometricians such as Wooldridge (2002) to specify the dependency among set

explanatory variables and unemployment which was dichotomous dependent variable.

2.7.1. Model Specification

In identifying the fundamental determinants of unemployment, first there is a need to assign a dichotomous variable either the person is employed or not employed. The explained variable, unemployment which was a latent variable and represented by Yi. When the i^{th} individual is unemployed, it is represented by 1, and takes 0 for the counterpart.

In order to understand the interpretation of the coefficients, the study used logistic model written in terms of the odds ratio and log of odds ratio for the response obtained from the respondents (Gujarati 2003). When the respondent will be unemployed, and represented with probability of (qi) is divided to the probability that he/she will be employed (1-qi), it yields the odds ratio

$$qi = f(Yi) = f(a + BiXi) = \frac{1}{1 + 1e^{-(a+\varepsilon BiXi)}} \dots\dots\dots\dots\dots\dots\dots\dots\dots 1$$

Because, $Yi = a + BiXi,$ in order to understand the mathematical equation more precisely, equation 1 can be rewrite in the following way.

$$1 - qi = \frac{1}{1 + e^{yi}} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 2$$

$$\frac{qi}{1 - qi} = \frac{1 + e^{yi}}{1 + e^{-yi}} = e^{yi} \dots\dots\dots\dots\dots\dots\dots 3$$

Therefore,

$$\frac{qi}{1-qi} = \frac{1+e^{yi}}{1+e^{-yi}} = e^{a+BiXi} \dots\dots\dots\dots\dots\dots\dots\dots 4$$

When we took the natural logarithm of the above equation, equation (4) $will\ be\ Yi = \ln\left(\frac{qi}{1-qi}\right) = a + \sum_{i=1}^{k}(BiXi) + Ui$

Where: K=the number of independent variables; Xi= represents the i^{th} exogenous demographic and socio-economic attributes of respondents, U_i = the residual, α =represents the log odd ratio value of $\frac{qi}{1-qi}$ at the time independent variable is zero, and β = represents the change in L (logit) when explanatory variables (X) change by one amount.

Thus, the estimable model becomes: -

$$\begin{aligned}\text{Unempl't} = \beta_0 &+ \beta_1\text{SexR} + \beta_2\text{AgeR} \\ &+ \beta_3\text{EducationLR} \\ &+ \beta_4\text{FamilySR} \\ &+ \beta_5\text{MaritalSR} \\ &+ \beta_6\text{AccessSN} \\ &+ \beta_7\text{MigrationSR} \\ &+ \beta_8\text{AccessJI} \\ &+ \beta_9\text{AccessWP} \\ &+ \beta_{10}\text{AccessJT} + u_i\end{aligned}$$

2.8. Variable Description and Measurement

2.8.1. Dependent Variable

Unemployment of the respondents which is represented as dichotomous variable with taking 1, when individual I respondent is unemployed, and 0 for the counterpart, that is when they are employed, is the determined variable.

2.8.2. Explanatory variables

SexR: Respondents' Sex- a dichotomous variable measured as 1 if the respondent is male, 0, if female. It is hypothesized that being male is expected to be positively associated with unemployment.

AgeR: - Respondents' age- is a represented as continuous variable which is measured by the number of years in life after birth. It is hypothesized that being unemployed decreases with age.

MaritalSR: - Marital status of respondents- is a dummy variable and represented by 1 if married, and for their counterpart it is represented by 0. It may have negative or positive effect on unemployment. According to Aynalem, (2016), marital status had a positive effect on unemployment status but, according to Asalfew (2011), marital status had negative effect.

EducationLR: -Education level of respondent- is a dichotomous variable taking 1for literate, 0 therwise. According to Peace *et al. (*2015) there is positive relation sheep between unemployment rate and education. It is difficult to find permanent job in Ethiopia, due to shortage of resources. But, according to Aynalem (2016) education and unemployment were negatively related. Therfore it is hypothesized that education to have either positive or negative effect on being unemployed in Injibara town.

AccessSN: - Access to social network- is represented as dummy variable with 1 if the person has access to social network, 0 0therwise According to Aynalem (2016), social network had positive effect and thus it is expected to have positive relation with unemployment status.

MigrationSR: - Migration status of respondents- is represented as dummy variable with 1 if a person migrates, and 0 if the person is not migrant. It was hypothesized to have positive effect with unemployment, so because a migrant may unable to search jobs and being may not trusted employed by others (Bakare, 2011).

FamilySR-Respondents' family size- measured by the total member of individuals in the household. As household members increase the tendency of being unemployed decreases. From the study finding of Mengistu *et al.* (2023) family size negatively determines unemployment status.

AccessWP: -Access to work place- its nature was dummy with taking a value of 1 if the respondent has access to work place, 0 otherwise and it is hypothesized that if the respondent has access to work place, then the respondent can start his business and become employed so have negative effect on unemployment. According to Mengistu *et al.* (2023) access to work place affected unemployment negatively.

AccessJI: -Job information accessibility- measures as a dichotomous variable taking 1 for those having access to job information; 0 for respondents have no access to job information. It is hypothesized to have negative effect on unemployment. According to Mengistu *et al.* (2023) unemployment was affected negatively by job information accessibility.

AccessJT: -Job training accessibility- is a dichotomous variable taking 1, if participating in job training, 0, otherwise. It was expected to reduce unemployment. According to Mengistu *et al.* (2023) participating in training program negatively affects unemployment status.

3. Results and Discussion

3.1.Some Diagnostic tests in Logit Model

The multicollinearity test by variance inflation factor, hetroscedasticity test, the Hosmer and Leme's goodness-of-fit test and link test were conducted and presented as follows.

Link Test: -According to Wooldridge, (2002), in order to check the prevalence of omitted variables, mathematical formulation problems and model specification errors, Link test is a relevant test. The link test result, hat-square = 0.056 (5.6%) which was greater than 0.05(5%), showed that there was no mathematical formulation problem, model specification error and no omitted variable, in the model used in this study.

Goodness-of-fit test (Hosmer-Leme show):-To determine how much the explained variable varied because of all the explanatory variables, goodness-of-fit of the estimated regression was used. It lies between 0 and 1, provided there is an intercept term in the model. It is better goodness of fit where the value of (Probability > chi2) is greater than 0.05(5%). In this case, the p-value (.1649) is greater than 0.05. Therefore, in this study there was no goodness of-fit problem.

Multicollinearity Test: -According to Guajarati (2003), the presence or absence of multicollinearity detected by variance inflation factor (VIF) or tolerance of variance (1/VIF). The most familiar methods of detecting the problem of multicollinearity among the explanatory variables is VIF and 1/VIF. So VIF used in this research paper to check the existence of multicollinearity. If VIF of a variable is greater than 10, it is an indicator that there is a serious problem of multicollinearity. Therefore, in this case, all the VIFs in the model were below 10 implying that multicollinearity among the variables was not a serious problem.

Heteroscedasticity test: -Finally, the test of hetroscedasticity was conducted to increase the forecasting (predicting) ability of the model. The hettest for heteroscedasticity was used to test the presence of heteroscedasticity problem, since the number of observations is higher than 30. We would have not accepted the null hypothesis that says there is no hetroscedasticity, if the p-value was very small. In this study, the p-value was too small (0.0000), which was less than 0.05 and thus the null hypothesis was rejected. To provide a solution to the problem of heteroscedasticity, the model was regressed by robust standard error method.

3.2.Logistic Regression Model Result

In order to identify the determinant factors for unemployment, binary logistic regression was employed. In this study, independent variables expected to affect the dependent variable are discussed as follows.

As shown in table 2, age of respondents was an important variable determining unemployment of individuals at the study area negatively and significantly (1% significant level). Keeping other variables constant, when age of respondents increases by one unit, the probability of being unemployed decreased by 0.003(0.3%) which is consistent with the findings of Esay (2020) who concluded that age significantly but negatively affects youth unemployement,but inconsistent with the finding of Asalfew (2011).

Table 2. Maximum likelihood estimates of Binary logit Model

Variables	Coefficient	Standard error (robust)	Marginal effect	P-value
Sex R	0.0751	0 .5350	0 .0036	0.879
Age R	-0.0707	0 .0267	-0.0033	0.008
Marital SR	0.2508	0 .1856	0 .0120	0.260
Education LR	-0.5501	0 .1948	-0.0262	0.004
Access SN	-1.2367	0 .4787	-0.0581	0.014
Access JI	-0.4906	0 .4357	-0.0243	0.305
Family SR	-0.6366	0 .3838	-0.0303	0.295
Access JT	-1.1257	0 .5434	-0.0785	0.038
Migration SR	5.0819	0 .5596	0.7810	0.000

Access WP	-0.9879	0 .4340	-0.0420	0.040
Constant	-3.7238	1.6796		
Sensitivity = 73.33%	Specificity 97.63%	Wald $chi^2(10)$ =	103.32	
No of observation = 397		$Prob>chi^2$=0.000		
Pseudo R^2 = 0.5200		Log likelihood	-80.932382	

Source: own data calculation, 2023.

Respondents' educational level is also the significant factors that can explain unemployment of sample respondents as shown in Table 2. The model result showed negative and significant effect of educational level of respondents on the probability of being unemployed at 1% significance level. Keeping all other variables constant, the probability of being unemployed for literate respondents would decrease by 0.026 (2.6%) on the average compared to their counterpart. This is because literate people acquire new knowledge, new entrepreneurship ability and they can become employed by others or by themselves as self-employed. This finding is similar with the findings of Esay (2020).

Having strong social networking was another significant variable affecting respondents' unemployment negatively and significantly (5% significance level) in the study area. Ceteris paribus, the probability of being unemployed decreased with 0.058 (5.8%) for those respondents who have access to social networking compared to respondents who had no access to this social networking. This is because when individuals had access to social networking, there is high access of job vacancy and thereby the probability of being unemployed would decrease. This finding is consistent with Amanuel (2016), and Asalfew (2011), whose findings indicated that social network inaccessibility had positive effect on the probability to be unemployed.

As expected, access to job training significantly and negatively determines unemployment in the study area at 5% level of significance. Keeping other variables constant, getting job training decreases the probability of being unemployed by 0.079 (7.9%). In other words, the probability of being unemployed would be decreased by 7.9 % for those who got job training compared to their counterparts. The finding confirmed the results of Mengistu *et al.* (2023).

As shown on Table 2 migration status is another important variable affecting unemployment in the study area. Migration status significantly and positively affects unemployment at 1% significance level. In Injibara town, the probability of being unemployed for those migrant respondents increased by 0.781 (78.1%), keeping other variables constant. The reason may be migrants do not know their destination place and due to lack of identification certificate, they fail to be employed. The finding of this study was similar to the study results of Todaro (1994) and Anh *et al*. (2005). Most of the time, it seems that migrants may have no opportunity for education and other advantage, while non-migrants particularly who had high level of education coupled with strong social networks could decrease their risks of being unemployed.

Access to work place is also important variable determining unemployment in Injibara town. Access to work place affects unemployment significantly and negatively. The probability of being unemployed would be decreased by 0.042 (4.19%) for those individuals who have access to work place comparing to their counterparts. This may be because having work place may solve financial capital problem to start business.

The result is similar to Mengistu *et al.* (2023) who concluded that work place accessability affects unemployment status negatively and significantly.

4. Conclusions and Recommendations

4.1.Conclusions

This study aimed to determine and evaluate unemployment determining variables in Injibara town. In order to make successful its objective, the study used Binary logit regression econometric model to estimate the parameter coefficients, affecting the dichotomous explained unemployment variable. From the regression findings of the logit model, six independent variables affect unemployment significantly which includes, age of respondents, educational level of respondents, social networking, job training, migration status and access to work place were significant. Migration status affects unemployment positively and the other variables training, access to work place age, educational level, and social networking determine unemployment negatively in Injibara town.

4.2.Recommendations

Based on the findings, the researchers attempted to put forward some policy implications and recommendations that are supposed to be relevant for policy design and formulation pertaining to the issue.

- To reduce the unemployment rate of citizens, it is important to improve their educational level to enable them fit into the work environment and dynamics. In line with this educational background, it is important to create more job opportunities. To this effect, joint effort of educational institutions, labor and job creation; and other concerned offices is required.
- Encourage people to scale up their social network. Social networks are important to access job vacancies in urban areas. Having higher density of social network increases the chance of getting new information about job opportunities available in the residential areas as well as outside the area. In order to increase the social networks; educating people to bring change in their social communication habits using public and private media, encourage them to use and access internet, mobile telephone; participate in youth related activities, visit and ask private employment agencies, friends, and relatives is suggested.
- In order to address the more unemployment rate, burden on services provision, increasing costs and expenses in towns and cities, it is important to create job opportunities in rural areas to uphold people from migrating to towns and cities searching for job and better life. Concerned offices such as women, youth, children and social affairs bureau, youth and sport bureau, agriculture offices could join hands to create an enabling environment including creating job opportunities in the rural areas.

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