Daagu International Journal of Basic and Applied Research 5(2023): 283-292
DOI: https://doi.org/10.20372/DIJBAR52031.V5I2.2023

Original Article

Factors Affecting the Choice of Strategies Adopted by the Youth to Cope with Unemployment Using a Multinomial Probit Regression Model in Ethiopia

Tesfaye Denano[1*] Sintayehu Sibera[1] and Mathewos Muke[2]

[1]Departments of Statistics, Wolaita Sodo University, Sodo, Ethiopia

[2]Departments of Environmental Science, Wolaita Sodo University, Sodo, Ethiopia

*Corresponding Authors: tesfustat@gmail.com

ABSTRACT

Coping strategies with unemployment is very difficult. Being unemployed youth can be devastating on every level professionally, financially, psychologically, and emotionally. The main objective of this study was to examine factors affecting the choice of strategies adopted by the youth to cope with unemployment. This study used a cross-sectional design, as well as a descriptive survey as a research method. A total sample of 379 people was drawn using random sampling techniques. According to the multinomial Probit result, educational level, alcohol abuse, youth training, age, and work experience are statistically significant for collective coping strategies, and there are main factors that affect the choice of strategies adopted by the youth to cope with unemployment but not individual coping strategies except work experience. This would suggest that there is a statistical association between statistically significant variables and preferring collective coping strategies rather than social coping strategies, but that there is no association between educational level, alcohol abuse, youth training, and age and preferring individual coping strategies rather than social coping strategies. In addition to these results, commercial motorcycling, Shoe cleaning, Woodwork, Stress trading, and Mobile/television/radio and/or watch maintenance were the main coping strategies in the Wolaita zone. The Ethiopian economy's agricultural sector, which employs the majority of Ethiopians, has to be revived. Parents should encourage their children to use effective coping mechanisms that serve society. With the assistance of all stakeholders, counselors should arrange programs to provide acceptable work options for Ethiopian youngsters.

Keywords: Coping strategies, Unemployment, Youth, Multinomial Probit Model, Ethiopia

Citation: Denano, T., Sibera, S. and Muke, M. 2023. Factors Affecting the Choice of Strategies Adopted by the Youth to Cope with Unemployment Using a Multinomial Probit Regression Model in Ethiopia. *Daagu International Journal of Basic and Applied Research*, 5(2): 283-292. DOI: https://doi.org/10.20372/DIJBAR52031.V5I2.2023

1. INTRODUCTION

In Ethiopia, youth unemployment is caused by several factors, one of which is population growth. Ethiopia's population has continued to grow at a rapid pace. This rapid population expansion has resulted in a significant increase in the young population, culminating in an increase in the working-age population. The large youth migration from rural to urban is linked to the rapid population rise. According to (Carter & Rohwerder, 2016; Dhlamini; Schewel & Fransen, 2018)youth in Ethiopia have a significant degree of geographical mobility in the form of rural-urban migration, which has influenced youth unemployment. Young Ethiopians migrate to cities at a higher rate than other migrant groups. However, career possibilities in cities are scarce.

Unemployment is increasingly being viewed as a collective experience. Some coping strategies involve the seeking or utilizing of social support (Bullough, Guelich, Manolova, & Schjoedt, 2022; Jehlička, Kostelecký, & Smith, 2013).

The analysis of youth unemployment requires the consideration of coping behaviors, paying attention to different relevant facets of this complex phenomenon. It is important to take into account the role of coping in the process of stress and the acknowledgment of the active role of the youngster in the appraisal and control of the situation. (Madden, 2009)studied the effects of unemployment on well-being (measured through the General Health Questionnaire) Unemployed people display lower levels of mental distress when supported by family and friends. However, unemployment can also affect social support through its negative impact on significant others.

Employability is a psychosocial construct that embodies individual characteristics that foster adaptive cognition, behavior, and affect (Harvey, 2001; McQuaid & Lindsay, 2005; Pool & Sewell, 2007; Yorke, 2006). Efforts by individuals to improve employability evoke engagement in coping strategies to deal with unemployment. Increasing human capital through education and training can enhance opportunities to find a job(Islam, Mäntymäki, Laato, & Turel, 2022; Lee & Chen, 2022). Adaptability facilitates different engagement coping strategies through the individuals' willingness to adjust to job requirements. Employability needs to be tuned with career identity to enhance employability. Modifying the span of acceptable job types and the range of job features represents another set of engagement coping strategies (Blustein, *et al*., 2020; Holland, *et al*., 2019).

In some cases rejecting a given offer while continuing the search may be functional for their career development. A recent meta-analysis showed the positive influence of job search interventions in creating more effective job search practices(Caperna, Colagrossi, Geraci, & Mazzarella, 2022). This

analysis found the importance of the combined factors of individual agency and local community support for effective coping strategies.

Some types of engagement coping focus on finding alternative ways to fulfill the latent functions of employment. Maintaining time structures during unemployment is an effective way to cope and contributes to psychological well-being. Some personality characteristics, such as being single and having children, are positively related to providing a more structured routine(Agradi, Adom, & Vezzulli, 2022).

Some escape and avoidance strategies are employed by young people when conducting seemingly futile searches. Evidence suggests that disengagement strategies can also be effective in helping to cope with unemployment. Emotional social support may be sought to palliate negative emotions of unemployment and to buffer negative effects (Akay & Ahmadi, 2022; Chirisa, *et al*., 2022; Hameed, Arshed, Grant, Munir, & Aziz, 2022).

Finally in this study, we used the Multinomial Probit Regression model to identify factors affecting the choice of coping strategies to reduce unemployment status in Wolaita Zone, Ethiopia.

2. RESEARCH METHODOLOGY

2.1.Study Area Descriptions

Wolaita Sodo Zone is located geographically within 6.5° – 7.2°N latitude and longitude of 37.1° - 38.1°E with an elevation range between 654- 2954 meters (Figure 1).

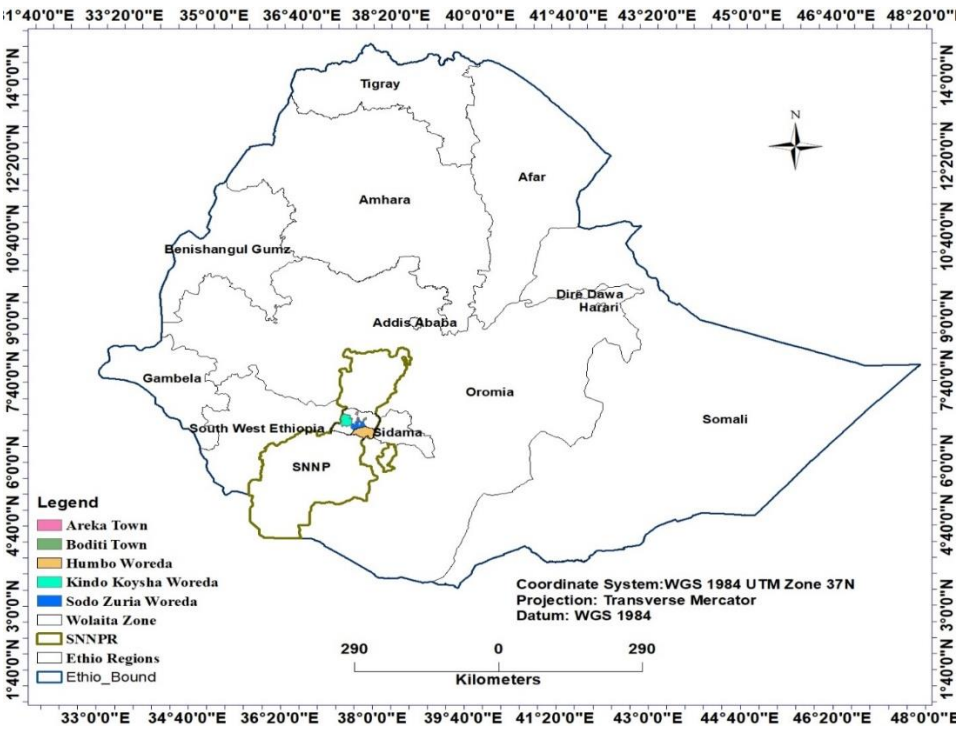


Figure 1. Map of the Study Area

2.2.Research Design

The study adopted a cross-sectional survey research design. The source of the data for this study was primary data sources. The primary data was collected from unemployed and employed youth in the study area by using a questionnaire.

2.2.1. Sampling Techniques for this study

In this study, a stratified sampling technique was used to select a number of sample sizes. Accordingly, some kebeles were selected from the Wolaita zone. The samples were distributed proportionally to each Woredas in the zone. Five kebeles are selected randomly: such as *Areka town, Bodity town, Humbo woreda, Sodo Zuria Woreda,* and *Kindo Koyisha Woreda* (Figure 1). Finally, the estimated number of samples was calculated by using proportional allocation (Cochran, 1977) and the calculated sample size was 379, other calculations were found in the main thesis.

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, that was adopted in this study (Cochran, 1977).

$$n = \frac{\frac{\left(Z_{\alpha/2}\right)^2 P(1-P)}{d^2}}{1+\frac{1}{N}\left[\frac{\left(Z_{\alpha/2}\right)^2 P(1-P)}{d^2}-1\right]} \quad (1)$$

Where: n= the sample size of youngsters; N=the total number of youngsters 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 youngsters; n is the total sample size; and 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 in order to increase precision, α=0.05 and P=0.05 will be used. Therefore, by using this formula the estimated sample size was 379 youths (Table 1).

Table 1. The estimated sample sizes

No.	Woreda/town	Stratifications	Employed in 2021	Unemployed	Sub-Total population	Selected samples
1	*Bodit town*	Stratum-I	2686	3651	6337	97
2	*Kindo Koyisha*	Starum-II	1096	2863	3959	60
3	*Sodo zuria woreda*	Stratum-III	360	3441	3801	58
4	*Areka town*	Stratum-IV	1007	3108	4115	63
5	*Humbo woreda*	Stratum-V	2950	3650	6600	101
	Total		8,099	16,713	24,812	379

Source: Wolaita Zone (unpublished document), 2023

2.2.2. Multinomial Probit regression

Multinomial Probit regression is used to predict categorical placement in or the probability of category membership on a dependent variable (Böhning, 1992; Huttunen, Manninen, Kauppi, & Tohka, 2013; Lin, Deng, Li, & Ma, 2014; Pandya, Upadhyay, & Harsha, 2014). It uses maximum likelihood estimation to evaluate the probability of categorical membership(Lin, *et al*., 2014).

The model is written as:

$$\psi_i = \int_{-\infty}^{\mathbf{X}^T\boldsymbol{\beta}} \phi(t)dt = \int_{-\infty}^{\mathbf{X}^T\boldsymbol{\beta}} \frac{1}{\sqrt{2\prod\delta^2}} \exp\left(-\tfrac{1}{2}t^2\right)dt \qquad (2)$$

Where $\mathbf{X}$ *is* $n \times p$ *a matrix of independent variables,* β $p \times 1$ *are vectors of coefficients for the predictors,* ϕ *is cumulative function and* ψ *is defined as the success the probability corresponding to the* i^{th} *categories* $i \Rightarrow 1 = individual coping\ strategy,\ 2 = collective coping\ strategy,\ and\ \ 3 = social\ coping\ strategy$

The sample size calculated for each Kebeles by proportional allocation method

$$n_h = \frac{n * N_h}{N},\ h = 1, 2, 3, 4, 5 \qquad (3)$$

Where N_h *indicates total number of youths in* h^{th} *kebeles*

3. RESULT AND DISCUSSION

Begin by considering whether the variables that we added statistically significantly improved the model when compared to the intercept model. The p-value column shows that p = 0.000 (actually p-value is less than the alpha value (at 5% level)), indicating that the full model statistically significantly predicts the coping strategies better than the intercept-only model (Table 2).

Table 2. Model Fitting Information

Model	**Model Fitting Criteria**	**Likelihood Ratio Tests**		
	-2 Log-Likelihood	χ^2 **-Square**	**Df**	**p-value**
Intercept Only	433.168			
Final	120.282	312.886	20	.000

Source: Authors survey (2023)

As seen below, the Goodness-of-Fit in Table 3 gives two measurements that may be used to determine how well the model matches the data. The Pearson chi-square statistic is represented by the Pearson value. A statistically significant result (i.e., alpha-value=5%) means that the model does not adequately match the data. The p-value is 0.254, as you can see in the Table 3 below. As a result, it is statistically insignificant. The model matches the data well based on this metric. The deviance is the second

statistic, and in the same way, as the p-value indicates no significance (i.e. p-value > 0.05), we conclude that the model fits the data well.

Table 3. Cross-tabulation of coping strategies

Count					χ -square	p-values
	Types of strategy	sex of respondents		Total		
		female	Male			
Coping strategies	individual coping strategies	7	36	43		
	collective coping strategies	74	16	90		
	social coping strategies	64	182	246		
Total		145	234	379		
Pearson					9.833	0.254
Deviance					10.356	0.458

Source: Authors survey (2023)

The p-value is smaller than the alpha-value (use $\alpha - 5\%$) (Table 4). As a result, the hypothesis is rejected since there is a substantial variation in the coping strategies of jobless youth in the Wolaita Zone based on age. It suggests that youth's coping skills are influenced by their age.

Table 4. ANOVA for the age of respondents

	Sum of Squares	Df	Mean Square	F	p-value
Between Groups	11.616	1	11.616	1.995	0.039
Within Groups	2194.943	377	5.822		
Total	2206.559	378			

Source: Authors survey (2023)

Likelihood Ratio Tests are most relevant for nominal independent variables since, unlike the Parameter Estimates (Table 5), it is the only table that examines the total effect of a nominal variable. The model's parameters or coefficients are shown in this table. Because the dependent variables were divided into three groups, there are two sets of Probit regression coefficients. In the "individual coping techniques" row, the first set of coefficients may indicate the comparison of the individual coping strategies category to the reference category, social coping strategies. The second set of coefficients is found in the collective coping strategies. This indicates the comparison of the collective coping strategies category to the reference category, social coping strategies.

Educational level, alcohol abuse, youth training, age, and work experience are statistically significant for collective coping strategies but not individual coping strategies except for work experience (Table 5). This would suggest that there is a statistical association between statistically significant variables and preferring collective coping strategies rather than social coping strategies, but that there is no association between educational level, alcohol abuse, youth training, and age and preferring individual coping strategy rather than social coping strategy. This indicates that work experience, educational level, alcohol abuse, youth training, and age were the main factors affecting the choice of strategies

adopted by the youth to cope with unemployment in the study area. This result somewhat confirmed with (Dagume, 2021).

In general, work experience, age of youth, educational level, and alcohol abuse were negatively related to the choice of strategies adopted by the youth to cope with unemployment, while youth training was positively related to the outcome variable.

Table 5. Multinomial Probit Regression

Coping strategies		Coefficient (β)	Std. Error	Z-value	Df	P-value
individual coping strategies	Intercept	-0.505	331.595	0.026	1	0.872
	Sex	0.295	3.747	0.006	1	0.940
	Marital status	0.518	7.731	0.017	1	0.896
	Family size	0.381	7.150	0.026	1	0.872
	Educational level	-0.026	1.249	0.005	1	0.942
	Social network	0.117	0.631	0.034	1	0.853
	Alcohol abuse	-0.096	0.688	0.019	1	0.890
	Availability job	1.911	7.791	0.022	1	0.882
	Youth training	-0.368	.299	1.516	1	0.218
	Log(age)	-2.767	4.719	0.344	1	0.558
	Experience	-2.337	.880	7.056	1	**0.008***
collective coping strategies	Intercept	-0.083	4.316	0.012	1	0.912
	Sex	8.739	21.504	0.002	1	0.965
	Marital status	4.213	13.345	0.001	1	0.975
	Family size	2.794	5.045	0.006	1	0.936
	Educational level	-3.124	5.906	10.120	1	**0.000***
	Social network	8.801	3.020	.028	1	0.868
	Alcohol abuse	-9.236	3.021	6.030	1	**0.000***
	Availability job	3.601	7.409	0.026	1	0.871
	Youth training	0.249	0.395	7.397	1	**0.005***
	Log(age)	-1.809	5.549	3.795	1	**0.051****
	Experience	2.648	1.171	5.110	1	**0.024****

**** And ** indicates statistically significant at 1% and 5% levels respectively***

***Note**: social coping strategy is the base category*

The mean and rank order of coping strategies of unemployed youths in Wolaita Zone, Ethiopia is presented in Table 6. The table indicates that items 1 (with a mean score of 5.6), item 2 (with a mean score of 5.13), and item 3 (with a mean score of 4.58) were ranked 1st, 2nd, and 3rd, respectively. Item 1 stated "commercial motorcycling"; item 2 stated "shoe cleaning"; and item 3 stated "woodwork" as the coping strategies of unemployed youths in Wolaita Zone. On the other hand, items 4 (with a mean score of 4.38), item 5 (with a mean score of 4.35); and 6 (with a mean score of 4.12), etc. This implies that unemployed youths engage in most of the listed behaviors in coping with unemployment

situations. It can be concluded that the coping strategies of unemployed youths in Wolaita Zone, Ethiopia are: commercial motorcycling; shoe cleaning; woodwork; mobile, television, radio, and watch maintenance; stress trading, etc.

Table 6. Mean and Rank Order on Coping Strategies of Unemployed Youths in the Wolaita Zone

No.	Coping strategies in the study area	Mean	Rank
1	Commercial motorcycling	5.6	1st
2	Shoe cleaning	5.13	2nd
3	Woodwork	4.58	3rd
4	Mobile, television, radio, and watch maintenance	4.38	4th
5	Stress trading	4.35	5th
6	DSTV house	4.12	6th
7	Metalwork	3.9	7th
8	Sport gym	3.45	8th
9	Commercial tennis-playing	3.19	9th
10	Internet house	2.56	10th
11	Exchanging of money	1.23	11th
12	Photo house	1.23	12th
13	Under-paid job	1.15	13th
14	Small scale farming	1.12	14th
15	Illegal migration	0.98	15th
16	Hen and egg trading	0.58	16th

Source: authors survey (2023)

4. CONCLUSION AND RECOMMENDATION

We used a cross-sectional design as well as a descriptive survey as research methods in this study. A total sample of 379 youths was drawn using random sampling techniques. A questionnaire about unemployed youths coping mechanisms was utilized to gather data. Five kebeles were selected randomly from Wolaita Zone, namely, *Bodit* town, *Humbo woreda, Sodo zuriaya woreda, Areka* town, *and Kindo koyisha woreda.* Gender or sex, educational level, alcohol abuse, youth training, work experience, marital status, family size, job availability, and age were also investigated as variables.

The study investigated factors affecting the choice of strategies adopted by the youth to cope with unemployment in the Wolaita zone, Ethiopia. The main factors that affect the choice of coping strategies in the study area are youth educational level, alcohol abuse, youth training, work experience, and age. The best coping strategies of unemployed youths that ranked first to forth in Wolaita Zone are: commercial motorcycling, shoe cleaning, woodwork and (mobile, television, radio, and watch maintenance) respectively.

The government of Wolaita Zone should focus on statistically significant variables. In the study area, the government should give attention giving short-term training to unemployed youths. The main coping strategies in the study were commercial motorcycling, shoe cleaning, woodwork, mobile,

television, radio, and watch maintenance. The Ethiopian government should increase job possibilities in all industries. Parents should encourage their children to use effective coping mechanisms that serve society. With the assistance of all stakeholders, counselors should arrange programs to provide acceptable work options for Ethiopian youngsters.

This study was limited to factors affecting the choice of coping strategies adopted by the youth to cope with unemployment only in Wolaita Zone; future researchers can investigate the various coping or adjustment strategies of unemployed youths at the regional or country level.

Conflict of Interest

The authors declare that they have no competing interests.

Acknowledgments

We are grateful for the Research fund provided by Wolaita Sodo University Research and Community Service.

REFERENCE

Agradi, M., Adom, P. K., & Vezzulli, A. (2022), Towards sustainability: Does energy efficiency reduce unemployment in African societies? *Sustainable Cities and Society*, 103683.

Akay, P. A., & Ahmadi, N. (2022), The Work Environment of Immigrant Employees in Sweden a Systematic Review. *Journal of International Migration and Integration*, 1-34.

Blustein, D. L., Duffy, R., Ferreira, J. A., Cohen-Scali, V., Cinamon, R. G., & Allan, B. A. (2020), Unemployment in the time of COVID-19: A research agenda (Vol. 119, pp. 103436): Elsevier.

Böhning, D. (1992), Multinomial logistic regression algorithm. *Annals of the institute of Statistical Mathematics, 44*(1), 197-200.

Bullough, A., Guelich, U., Manolova, T. S., & Schjoedt, L. (2022), Women's entrepreneurship and culture: gender role expectations and identities, societal culture, and the entrepreneurial environment. *Small Business Economics, 58*(2), 985-996.

Caperna, G., Colagrossi, M., Geraci, A., & Mazzarella, G. (2022), A babel of web-searches: Googling unemployment during the pandemic. *Labour Economics, 74*, 102097.

Carter, B., & Rohwerder, B. (2016), Rapid fragility and migration assessment for Ethiopia. *Rapid Literature Review, 2*, 1-47.

Chirisa, I., Mutambisi, T., Chivenge, M., Mabaso, E., Matamanda, A. R., & Ncube, R. (2022), The urban penalty of COVID-19 lockdowns across the globe: manifestations and lessons for Anglophone sub-Saharan Africa. *GeoJournal, 87*(2), 815-828.

Cochran, W. G. (1977), *Sampling techniques*: John Wiley & Sons.

Dagume, M. A. (2021), Determinants of the Job Search Method among Rural Youth: The Case of Vhembe District in South Africa. *International Journal of Economics and Financial Issues, 11*(5), 28.

Dhlamini, P. (2022), Reframing and Repurposing National Youth Policies for Africa's Peace and Security Agenda.

Hameed, K., Arshed, N., Grant, K. A., Munir, M., & Aziz, O. (2022), Forces of dynamic capability and incidence of entrepreneurship: A macroeconomic policy intervention approach. *Journal of the Knowledge Economy*, 1-25.

Harvey, L. (2001), Defining and measuring employability. *Quality in higher education, 7*(2), 97-109.

Holland, D., Schlüter, D., Young, C., Mills, R., Rog, D., Ford, H., *et al*. (2019), Use of coping strategies in multiple sclerosis: Association with demographic and disease-related characteristics☆. *Multiple sclerosis and related disorders, 27*, 214-222.

Huttunen, H., Manninen, T., Kauppi, J.-P., & Tohka, J. (2013), Mind reading with regularized multinomial logistic regression. *Machine vision and applications, 24*(6), 1311-1325.
Islam, A. N., Mäntymäki, M., Laato, S., & Turel, O. (2022), Adverse consequences of emotional support seeking through social network sites in coping with stress from a global pandemic. *International Journal of Information Management, 62*, 102431.
Jehlička, P., Kostelecký, T., & Smith, J. (2013), Food self-provisioning in Czechia: Beyond coping strategy of the poor: A response to Alber and Kohler's 'informal food production in the enlarged European Union'(2008). *Social indicators research, 111*(1), 219-234.
Lee, Y.-H., & Chen, M. (2022), Seeking a Sense of Control or Escapism? The Role of Video Games in Coping with Unemployment. *Games and Culture*, 15554120221097413.
Lin, Y., Deng, X., Li, X., & Ma, E. (2014), Comparison of multinomial logistic regression and logistic regression: which is more efficient in allocating land use? *Frontiers of Earth Science, 8*(4), 512-523.
Madden, D. (2009), Mental stress in Ireland, 1994–2000: a stochastic dominance approach. *Health Economics, 18*(10), 1202-1217.
McQuaid, R. W., & Lindsay, C. (2005), The concept of employability. *Urban studies, 42*(2), 197-219.
Pandya, D. H., Upadhyay, S. H., & Harsha, S. P. (2014), Fault diagnosis of rolling element bearing by using multinomial logistic regression and wavelet packet transform. *Soft Computing, 18*(2), 255-266.
Pool, L. D., & Sewell, P. (2007), The key to employability: developing a practical model of graduate employability. *Education+ Training*.
Schewel, K., & Fransen, S. (2018), Formal education and migration aspirations in Ethiopia. *Population and Development Review, 44*(3), 555.
Yorke, M. (2006), *Employability in higher education: what it is-what it is not* (Vol. 1): Higher Education Academy York.

Publisher's Note

Daagu International Journal of Basic and Applied Research remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.