Scientific Journal of **Applied Social and Clinical Science**

ANALYSIS OF THE DETERMINING FACTORS OF UNEMPLOYMENT IN THE CITY OF NAMPULA

Michaque Titosse Timbe Nhambe
Universidade Católica de Moçambique,
Faculty of Economics and Communication
Nampula, Moçambique
https://orcid.org/0009-0006-0498-4643

Andrieth Tutu Lourinho
Universidade Católica de Moçambique,
Faculty of Economics and Communication
Nampula, Moçambique
https://orcid.org/0009-0005-9619-3437

Altafe Nurdine Abdula
Universidade Católica de Moçambique,
Faculty of Economics and Communication
Nampula, Moçambique
https://orcid.org/0009-0007-1078-6499

Letícia Mussa Ângelo Naharipo
Universidade Católica de Moçambique,
Faculty of Economics and Communication
Nampula, Moçambique
https://orcid.org/0009-0009-8282-2211

Muhamade Bin Muhamade Hanifo
Universidade Católica de Moçambique,
Faculty of Economics and Communication
Nampula, Moçambique
https://orcid.org/0009-0003-0701-2880

Abstract: Economic theories point to variables such as inflation, age and level of education as some of the determining factors for the occurrence of unemployment. Therefore, this research was designed with the objective of analyzing the factors that determine unemployment in the city of Nampula, in the period between 2020 and 2022. To achieve this objective, it was necessary to design a regression model of the variables that determine unemployment as well as the use of univariate, bivariate and multivariate analyses. For the research, statistical methods were used, that is, the Ordinary Least Squares Method (OLS), with a quantitative methodology, through data from secondary sources and the use of the STATA 12.0 software, based on which it was possible to estimate the regression. The research results show that the determining variables of the unemployment rate in the city of Nampula during the period under analysis were the level of education and gender.

Keywords: Unemployment; Gender; Economic Theories; Level of Education.

INTRODUCTION

The present research was conceived with the purpose of analyzing the factors that determine unemployment in the city of Nampula. It contains, in addition to the Introduction, the Literature Review, the Methodology, the Presentation, the Analysis and Discussion of Results, Conclusions and Bibliographical References.

Unemployment is undoubtedly a macro-economic variable that is relevant to economic analysis and has helped economic policy makers to design strategies for both economic development and economic growth, as it has a great impact on GDP growth in an economy.

QUESTIONING

The city of Nampula is crowded with people who, day and night, spend their energy, strength and resources looking for a job, because unemployment in the country, specifically in the City of Nampula, is a reality and a very critical problem.

According to data from the Fourth General Population and Housing Census, Mozambique has a little over 28,861,863 inhabitants, of which 15,061,006 (52%) are female and the remaining 13,800,857 (48%) are male. According to the Organization of Workers of Mozambique (OTM), the unemployment rate in the country is around 24% and affects mostly young people.

The City of Nampula is the most populous in the country with 6,183,863 inhabitants, and therefore onepopulation densityof 74.8 inhabitants per km², whose age group is composed of young people, who occupy about 20% of the city's population. Access to employment encounters various barriers such as corruption, nepotism, favoritism, among other aspects. This way, unemployment provides, as a resource for survival, the exercise of informal commercial activities, the increase in criminality and marginality, the consumption of alcohol and drugs, prostitution and premature marriages.

According to Doege and Bittencourt (2010), unemployment is a problem for society because people who do not carry out any activity face various adversities such as: subsistence, the feeling of being useful as well as constituting a burden for their households. Therefore, unemployment is the inability to have a remunerative job, which translates into a lack of financial resources to satisfy needs.

Cacciamali (2003) and Dieese (2015), state that young people are a very vulnerable layer in search of a job and are left aside in favor of those with more advanced professional experience. On the other hand, this is also

due to the fact that more time is dedicated to education, resulting from greater access to public education and the need to increase professional training.

In the sense of Mosca (2005), it is assumed that inflation, age, level of education, gender, among others; constitute the determining factors for the occurrence of unemployment in Mozambique.

According to the Final Report of the Household Budget Survey – IOF 2019/2020 published by the National Institute of Statistics, it shows that the level of unemployment in Mozambique is estimated at 74.0%, being slightly higher among men (75.5%) than among women (72.8%), unemployment being a concern.

In this context, sSince unemployment is a very worrying situation, it is imperative that studies be carried out that can assess or analyze the factors correlated to it. Therefore, this research seeks to answer the following question: *What are the determining variables of unemployment in the city of Nampula?*

LITERATURE REVIEW

According to Zylberstajn and Netto (1999), unemployment consists of a situation in which a certain person intends to have a salaried job, but for different reasons, does not find it. They also advance that the theories are not consensual when they try to explain the causes that are behind unemployment.

In their studies, authors such as Barros et al. (1997), Fernandes and Picchetti (1999), Menezes-Filho and Picchetti (2000), Silva and Kassouf (2002), Camargo and Reis (2005), among others point to age and experience as the main causes of unemployment.

For Menezes-Filho and Picchetti (2000), they argue that those who are working are more likely to be admitted to new jobs, compared to those who want to enter the job market for the first time. In turn, Camargo

and Reis (2005), argue that the discrepancy of information about job opportunities results from the lack of professional experience, since it can only be acquired when people interact within the job market.

According to Samuelson and Nordhaus (2012), the concept of inflation cannot be seen as a recent aspect in discussions of the economic arena, since it dates back to the emergence of market economies. Therefore, they define inflation as a continuous and generalized increase in the prices of goods in an economy, and it is measured through the Consumer Price Indices (CPI). On the other hand, Costa and Cunha (2010) assume that the level of education and gender also influence the level of unemployment, taking into consideration, the pressure exerted by technological advances.

According to Montella (2007), it translates as unemployment, the excess of the supply side of labor in relation to its demand in the labor market.

According to Mankiw (2010), he classifies the types of unemployment according to their causes in their economy, namely: (i) frictional or natural unemployment, caused by imperfections in the labor market; (ii) conjunctural or cyclical unemployment, caused by economic crises; (iii) structural or technological unemployment, caused by technological advances; (iv) seasonal unemployment, which occurs in certain periods; and (v) forced unemployment or underemployment, which occurs when employees are paid wages below the wages stipulated by the union.

According to the positioning of Formigoni (2016), unemployment is caused by several factors, from problems related to inequalities and economic crises, to problems of corruption and age. However, some variables are more evident in the influence of the level of unemployment, such as the level of education,

gender and inflation, as reinforced by Costa and Cunha (2010) and Montella (2007).

However, Bryns and Stone (1995) and Blanchard (2011), address the issue of unemployment and inflation in the economy and refer that there is an inverse relationship between these two variables that was called the Phillips curve, because the author was the pioneer in carrying out studies focused on this issue.

METHODOLOGY

Based on the conceived methodology, scientific research assumes two distinct forms: Quantitative Research based on the classical paradigm and Qualitative Research, guided by the alternative paradigm. And, the present research is of a Quantitative scope that according to Minayo (2008), the quantitative methods aim to visualize data, indicators and observable trends, as well as to elaborate abstract theoretical models with a high level of applicability in practice. They intend to demonstrate the regularity of the observed phenomena, sacrificing meanings and simplifying social life.

It is important to point out that Quantitative Research was influenced by the approaches brought by the natural sciences that defend the existence of a certain reality of the external world that deserves to be analyzed with great objectivity, through the conception of cause-effect relationships, among others, in order to reach absolute truths, that is, universals; which would allow the reproduction and expansion of such research results.

It is hoped that this research can contribute to the formulation of new economic policies that favor the reduction of unemployment to full employment and provide more knowledge for society in general. In the academic field, the study will contribute to new research related to the topic in question and also open space for debates around it.

In order to reach the objective of the research, the development of this work took place in a descriptive way, since the processes to be observed were listed, through data collection, and the information provided by this study can be used to make some decisions, although they are generally used to broaden the level of knowledge about a given reality.

In order to reach the objectives established in the work, the econometric foundations presented by Gujarati (2000) were used, from the specification of the econometric model to the univariate, bivariate and multivariate analysis of all model variables. For the education variable, only the following levels were assumed: basic, secondary, professional and higher. These levels were chosen for convenience, and because it is assumed that most people with a level below Basic are not of employable age, not only that none of the respondents had a level below Basic.

It must be noted that, according to Gujarati (2000), there are two (2) main models in econometric studies: (i) mathematical model; (ii) econometric model. The variables used in the study are namely: unemployment as a dependent variable; gender (male and female) and level of education, as independent or explanatory variables. Thus, the mathematical and econometric model respectively, are presented below:

Mathematical Model: $D_t = \beta_0 - \beta_1\pi_t - \beta_2 NE_t + Gen_t$

Econometric Model: $D_t = \beta_0 - \beta_1\pi_t - \beta_2 NE_t + Gen_t + \varepsilon_t$

Where: π_t — Represents inflation; D_t — Represents unemployment; NE_t — Represents education level; ε_t — Represents the error term; Gen_t — Represents Gender (O for male and 1 for female).

DATA COLLECTION TECHNIQUES

The research was based on a quantitative approach, based on data collection through a questionnaire addressed to randomly chosen participants. In order to seek answers to the starting question of this research,

the Questionnaire was chosen as a data collection instrument which, according to Chagas (1991), is a set of questions made available to the respondents in order to obtain answers that later treated and analyzed, it is possible to arrive at a certain conclusion that is considered finished to answer the question under analysis.

PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

This chapter was reserved for the presentation and interpretation of the results of the fieldwork.

UNIVARIATE ANALYSIS

Variable	Obs	Mean	Std. Dev.	Min	Max
Unemployment	21	3.214286	.2593949	2.8	3.8
Inflation	21	9.1	5.674681	2.6	22.3

Average unemployment is 3.214286%, and the standard deviation is 25.93949%. The lowest unemployment rate analyzed is 2.8% and the highest is 3.8%. The inflation rate is 9.1% with a standard deviation of 5.674681%. The lowest inflation is 2.6% and the highest is 22.3%.

Education level	Freq.	Percent	Cum.
0	6	28.57	28.57
1	15	71.43	100.00
Total	21	100.00	

The variable level of education assumes the value 0, for higher education level, and the value 1, for basic education level. Thus, 28.57% of the unemployed have a higher education level and 71.43% of the unemployed have a basic education level.

Gender	Freq.	Percent	Cum.
0	8	38.10	38.10
1	13	61.90	100.00
Total	21	100.00	

The gender variable assumes the value 0 for men and the value 1 for women. Thus, 61.90% of the unemployed are women, and 38.10% of the unemployed are men.

BIVARIATE ANALYSIS

	Unemployment	inflation
Unemployment	1.0000	
Inflation	-0.5112	1.0000

The relationship between unemployment and inflation is moderately negative at -51.12%.

	Unemployment	Education level
Unemployment	1.0000	
Education level	0.0357	1.0000

The relationship between unemployment and education level is positive and very weak, at 3.57%.

	Unemployment	Gender
Unemployment	1.0000	
Gender	-0.8079	1.0000

The relationship between unemployment and gender is negative and strong, at -80.79%.

MULTIVARIATE ANALYSIS

Source	SS	df	MS		
Model	1.14222742	3	.380742473	Number of obs =	21
Residual	.203486794	17	.011969811	F(3, 17) =	31.81
				Prob > F =	0.0000
				R-squared =	0.8488
				Adj R-squared =	0.8221
Total	1.34571421	20	.067285711	Root MSE =	.10941

Unemployment	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Inflation	-.006997	.004766	-1.47	0.160	-.0170524	.0030584
Education level	-.247972	.0629303	-3.94	0.001	-.3807432	-.1152007
Gender	-.5073454	.0625692	-8.11	0.000	-.6393549	-.3753359
_cons	3.769152	.0737614	51.10	0.000	3.613529	3.924775

Model Specification: $D_t = 3.77 - 0.007\pi_t + 0.25NE_t - 0.51Gen_t + \varepsilon_t$

Therefore, if the variables inflation rate, education level and gender do not vary, the unemployment rate will be equal to 3.77%.

RESULTS OF INDIVIDUAL MODEL TESTS

The variables level of education and gender were statistically significant to explain the variations in the unemployment rate in the City of Nampula in the period (2020-2022), since the probability value $(P > |t|)$ is less than the significance level of 0.05%. On the

other hand, the inflation rate did not show significance, either with a significance level of 5%, 1% and 10% respectively.

R-SQUARED (R2)

The coefficient of determination shows that 84.88% of the variations that occur in the level of unemployment during the period from 2020 to 2022 are explained by variations in the inflation rate, level of education and gender respectively.

DISCUSSION OF RESULTS

The discussion of the results starts from the assumption that, according to the literature used in this research, it is stated that there is an inverse relationship between the unemployment rate and inflation, unemployment and the level of education and gender. However, the results obtained in the research were not in accordance with the economic proposition, which means that they were contradictory. The results of the study illustrate that the sign of inflation was in accordance with economic theory, however, its impact on the dependent variable (unemployment rate) was not significant. In contrast, education level and gender were statistically significant in explaining changes in the unemployment rate, but their sign was not in line with economic theory.

CONCLUSION

After addressing the research on the analysis of the determining factors of unemployment in the city of Nampula (2020-2022) it is important to leave the respective conclusions. In this context, according to the results, it was possible to verify that the variables involved in the model were unanimous to explain the variations in the unemployment rate jointly through the f test. However, the individual impact of the parameters was not consistent with the theory used in the research for inflation. On the other hand, the level of education and gender illustrated the opposite situation, that is, they were statistically significant to explain the variations that occurred in the unemployment rate. Even so, according to the results obtained in the research, it was possible to verify that the variable level of education presents a very weak relation of 3.57% with the dependent variable (unemployment rate), while the variable gender, presents a very strong relation of 80.79%, but negative with the variable.

In short, it was concluded that the determining variables of the unemployment rate in the city of Nampula during the period under analysis were the level of education and gender. Therefore, this conclusion is in line with the thoughts of Mosca (2005), Montella (2007) and Costa and Cunha (2010) who point to the level of education and gender as the determining variables for unemployment in a society.

REFERENCES

Amadeo, E.; Camargo, J. M.; Gonzaga, G.; Barros, R. P. & Mendonça, R. S. P. (1994). A natureza e o funcionamento do mercado de trabalho brasileiro desde 1980. Rio de Janeiro: IPEA, (Texto para Discussão, 353).

Barros, R.; Camargo, J. M.; Mendonça, R. (1997). Estrutura do desemprego no Brasil. Rio de Janeiro: IPEA, (Texto para Discussão, 478).

Blanchard, O. (2011). Macroeconomia (19ª. ed.). São Paulo: Pearson Prentice Hall.

Bryns, R. T. & Stone, G. W. (1995). Macroeconomia. São Paulo: Makron Books.

Cacciamali, M. C & Chahad, J. P. Z. (orgs.). (2003). Mercado de trabalho no Brasil: Novas práticas trabalhistas, negociações coletivas e direitos fundamentais do trabalho. São Paulo: LTR.

Camargo, J. M. & Reis, M. C. (2005). Desemprego: o custo da desinformação. Revista Brasileira de Economia, v. 59, n. 3, p. 381-5425.

Chagas, A. T. R. (1991). O questionário na pesquisa científica. Universidade Católica de Campinas: Campinas.

Costa, J. S. & Cunha, M. S. (2010). Determinantes do Desemprego no Brasil no Período de 1981 a 2005: uma Análise Enfatizando a Qualificação do Indivíduo em um Contexto de maior Abertura Comercial. Disponível em: https://seer.ufrgs.br/index.php/AnaliseEconomica/article/download/8234/9662/57800.

Diese. (2005). *Anuário do Sistema Público de Emprego, Trabalho e Renda: mercado de trabalho*. Livro 1. São Paulo.

Doege, R. & Bittencourt, M. (2010). *A taxa natural de desemprego no Brasil a partir de uma análise da estrutura do mercado de trabalho. https://hdl.handle.net/1884/24198*

Fernandes, R. & Picchetti P. (1999). Uma análise do desemprego e da inatividade no

Brasil metropolitano. Pesquisa e Planeamento Económico, v. 29, n.1. p. 87-112.

Formigoni, A. H. (2016). *Causas e consequências do desemprego*. Recuperado de:https://acervodigital.ufpr.br/bitstream/handle/1884/44236/R%20%20E%20%20ANDERSON%20HENRIQUE%20FORMIGONI.pdf?sequence=1&isAllowed=y.

Gujarati, D. N. (2000). *Econometria básica* (3ª. ed.). São Paulo: Pearson Makron Books.

Inquérito sobre Orçamento Familiar-IOF 2019/20. Maputo: Instituto Nacional de Estatística.

Mankiw, N. G. (2010). *Macroeconomia* (7a. ed.). Rio de Janeiro, Brasil: LTC.

Menezes-filho, N. & Picchetti, P. (2000). *Os determinantes da duração do desemprego em São Paulo*. Pesquisa e Planeamento Económico, v. 30, n. 1, p. 23-48.

Minayo, M. C. de S. (2008). *O desafio do conhecimento*. (11ª. ed.) São Paulo: Hucitec.

Montella, M. (2007). *Economia Passo a Passo* (2a. ed.). Rio de Janeiro: Quality Mark.

Mosca, J. (2005). *Economia de Moçambique – Século XX*. Lisboa: Instituto Piaget.

Samuelson, P.A. & Nordhaus, W.D. (2012). *Economia* (19a. ed.). São Paulo: McGraw-Hill.

Zylberstajn, H. & Balbinotto N. G. (1999). *As teorias de desemprego e as políticas públicas de emprego*. Estudos Económicos, v. 29, n. 1, p. 129-149.