SUBMIT

https://ejournal.umm.ac.id/index.php/jep/authorDashboard/submission/20843

Jurnal Ekonomi Pembangunan

? Back to Submissions

20843 / **Santoso et al.** / Analysis Of The Socio-Economic Effect On Unemployment In Gorontalo Province

Library

Workflow | Publication

Submission | Review | Copyediting | Production

Submission Files Search

▸	66768	ivan, Article.doc	April 9, 2022	Article Text

Download All Files

Pre-Review Discussions Add discussion

Name	From	Last Reply	Replies	Closed
No Items				

[JEP] Submission Acknowledgement

Muhammad Khoirul Fuddin <noreply@umm.ac.id> 9 April 2022 pukul 22.01
Kepada: Ivan Santoso <ivan_santoso@ung.ac.id>

Ivan Santoso:

Thank you for submitting the manuscript, "ANALYSIS OF THE SOCIO-ECONOMIC EFFECT ON UNEMPLOYMENT IN GORONTALO PROVINCE" to Jurnal Ekonomi Pembangunan. With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

Submission URL: https://ejournal.umm.ac.id/index.php/jep/authorDashboard/submission/20843
Username: ivan

If you have any questions, please contact me. Thank you for considering this journal as a venue for your work.

Muhammad Khoirul Fuddin

REVIEW

Notifications

[JEP] Editor Decision	2022-05-09 11:29 AM

Reviewer's Attachments

Search

67864 , 20843-Article Text-66768-1-2-20220409.doc	May 9, 2022	

Revisions

Search Upload File

▸ 67909	Article Text, Article (Revisions).doc	May 10, 2022	Article Text
▸ 68841	Article Text, Article (Revisions).doc	June 2, 2022	Article Text

Review Discussions

Add discussion

Name	From	Last Reply	Replies	Closed
No Items				

[JEP] Editor Decision

Editor Jurnal Ekonomi Pembangunan <noreply@umm.ac.id> 9 Mei 2022 pukul 12.29
Kepada: Ivan Santoso <ivan_santoso@ung.ac.id>, Muhamad Zikri Zam-Zam <muhzikri089@gmail.com>, Syarwani Canon <syarwanic@yahoo.com>

Ivan Santoso, Muhamad Zikri Zam-Zam, Syarwani Canon:

We have reached a decision regarding your submission to Jurnal Ekonomi Pembangunan, "ANALYSIS OF THE SOCIO-ECONOMIC EFFECT ON UNEMPLOYMENT IN GORONTALO PROVINCE".

Our decision is: Revisions Required

_____ Jurnal Ekonomi Pembangunan http://ejournal.umm.ac.id/index.php/jep

A-20843-Article Text-66768-1-2-20220409.doc
371K

ANALYSIS OF THE SOCIO-ECONOMIC EFFECT ON UNEMPLOYMENT IN GORONTALO PROVINCE

Muhamad Zikri Zam-Zam a, Syarwani Canon b, Ivan Rahmat Santoso c*
[a, b, c] Department of Economics, Faculty of Economics, Gorontalo State University, Indonesia
* Corresponding author: ivan_santoso@ung.ac.id

Info Articles

Article history:
Received xxx
Revised xxx
Accepted xxx
Available online xxx

Keywords:
Socio-Economic Indicators; Unemployment

Abstract

This study aims to know whether or not socio-economic indicators affect unemployment in Gorontalo Province. This study uses secondary data of 5 regencies and 1 city (Gorontalo Regency, Bone Bolango Regency, Gorontalo Utara Regency, Baalemo Regency, Pohuwato Regency, and Gorontalo City) from 2011 to 2020 sourced from journals, articles, and government agencies, such as Statistics of Indonesia. The data analysis technique uses panel data regression analysis. The finding shows that population growth has a negative and insignificant effect on unemployment in Gorontalo Province. This means that any increase in population growth will not necessarily reduce the unemployment rate in the Regencies/City in Gorontalo Province. Economic growth has a negative and significant effect on unemployement in Gorontalo Province. This means that every increase in economic growth can reduce the unemployment rate in the Regencies/City in Gorontalo Province. Inflation has a negative and insignificant effect on unemployment in Gorontalo Province. This means that inflation does not necessarily reduce the unemployment rate in the Regencies/City in Gorontalo Province. The Human Development Index has a negative and significant effect on unemployment. This means that the increase in the human development index can reduce the unemployment rate in the Regencie/City in Gorontalo Province.

INTRODUCTION

As a developing country, Indonesia is still undergoing a process of economic development that aims to achieve people's welfare. One way to achieve this is by providing job opportunities and creating an equal distribution of income. There is still a gap between the number of jobs available and the number of the workforce, which triggers the creation of unemployment and will also have an impact on the life of other socioeconomic statuses such as poverty (Choirur et al., 2021) and increased crime (Rungsrisawat et al., 2019). The success of a country's economic development can be seen from several economic indicators, one of which is the unemployment rate. Based on the unemployment rate, can be seen the condition of a country whether its economy is developing slowly or even experiencing a decline (Badu et al., 2020).

At present, the issue of manpower mainly focuses on one of the problems faced by our country, not regulating Gorontalo Province. But on the other hand, unemployed people generally do it voluntarily either because they choose a job, wait for a suitable job or leave their old job to look for a

Commented [KF1]: • Please make revisions on this page by giving a different color to the revised sentence
• Customize with JEP templates
• For further information, please get in touch with 082233992354 (Fuddin)

Commented [KF2]: •Write in alphabetical order
•Add JELL clasification (Please your check template JEP)

Commented [KF3]: Write down the research gap analysis (the difference between the tone of the research and the previous research). Gap analysis is written after you write down your last research and before writing down the objectives of your research

Commented [KF4]: •Please hyperlink the citation with the table of contents. (For examples, please see the writing of citations and table of contents in previous JEP issues)
•This revision also applies to later quotes in this article

new job due to reasons of boredom, boredom or not being suitable for the job, and various other reasons (Putong, 2013). Unemployment in Gorontalo Province is still a serious problem that must receive government attention. The problem of unemployment is indeed very complex to discuss because it can be related to socio-economic indicators that will affect unemployment, namely population growth, economic growth, inflation and the human development index. Based on data from the Central Bureau of Statistics (Badan Pusat Statistik 2016-2020, 2020), the unemployment rate in Gorontalo Province has fluctuated. from year to year. In 2016 it had 2.56% then it increased in 2017 4.28% then fell again in 2018 3.70%, after that in 2019 it increased 3.76% and in 2020 it decreased 4.28%.

In the problem of unemployment in Gorontalo Province, of course, there are several socio-economic indicators that affect unemployment including population growth, economic growth, inflation and the human development index.Several previous studies have also shown similar findings, where factors such as the human development index (Sumaryoto et al., 2020)**,** inflation (Idris, 2021), population growth (Ayuningtyas, 2019) (Hjazeen et al., 2021), regional minimum wage (Rustariyuni et al., 2018) (Sari & Bangun, 2019) (Parulian & Mahendra, 2021) and economic growth (Prawira, 2018), (Johan et al., 2016) affect the unemployment rate. This research offers the novelty of the variables used and the timeframe analyzed.

This study aims to determine how much influence population growth, economic growth, inflation and the human development index have on unemployment in Gorontalo Province. In addition, this study contributes to the development of science, particularly related to economics.

RESEARCH METHODS

This study uses a quantitative approach, to know the effect of population growth on unemployment in Gorontalo Province in 2011-2020, knowing the effect of economic growth on unemployment in Gorontalo Province 2011-2020, knowing the effect of inflation on unemployment in Gorontalo Province in 2011-2020, and determine the effect of the human development index on unemployment in Gorontalo Province 2011-2020. This research data uses panel data regression which is a combination of time series with a cross-section.

Commented [KF5]: •Please review the JEP template regarding what should be included in a research methodology
•This study uses panel data regression; please state what tests will be carried out in this study
•Write model use in research

RESULT AND DISCUSSION

Table 1. Justification of Research Model

Justification of Model	Probality	criteria	Decision
Uji Chow	Cross Section F= 0.0000***	ρ<α	FEM
Uji Hausman	Cross Section Random=0.0006***	ρ<α	FEM

*Note: Confidence level = ***)1%, **)5%, *)10%, TS) Not Significant*
Source: Estimated Results, 2022

Commented [KF6]: •Deepen again related to the analysis and discussion in this article
•Complete all the analysis that has been done in this article

Commented [KF7]: •Please see the reference in the template in creating a table
•This revision also applies to all tables in this article.

With the level of confidence that has been determined in this study, it is known that the value
- from the Chow test is 0.0000 and the value - from the Hausman test is 0.0006 which is smaller than the 1% significance value so it can be concluded that H0 is rejected. This means that the model selected based on the two tests (Chow and Hausman tests) above is the Fixed Effects Model.

Dependent Variable: LOG(TP?)
Method: Pooled EGLS (Cross-section SUR)
Sample: 2011-2020
Cross-sections included: 6
Total pool (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.90204	3.074347	3.871405	0.0003***
LOG(PP?)	-0.169424	0.327449	-0.517405	0.6072TS
LOG(PE?)	-0.020176	0.008979	-2.246959	0.0291**
LOG(INFLASI?)	-0.045169	0.037424	-1.206956	0.2331TS
LOG(IPM?)	-2.382533	0.693044	-3.437780	0.0012***
Fixed Effects (Cross)				
_KAB_BOALEMO—C	-0.295858			
_KAB_BONBOL—C	0.224342			
_KAB_GORONTALO--C	-0.042124			
_KAB_GORUT—C	-0.122313			
_KAB_POHUWATO—C	-0.517545			
_KOTA_GORONTALO--C	0.753498			

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.928670	Mean dependent var	14.62880
Adjusted R-squared	0.915831	S.D. dependent var	10.49351
S.E. of regression	1.065097	Sum squared resid	56.72162
F-statistic	72.33005	Durbin-Watson stat	2.079744
Prob(F-statistic)	0.0000***		

Commented [KF8]: •Please see the reference in the template in creating a table
•This revision also applies to all tables in this article.

Regression Equation:

LOG(TPit) = 11.90204 - 0.169424 LOG(PPit) - 0.020176 LOG(PEit) – 0.045169LOG(INFLASIit) -2.382533LOG(IPMit)+εit

Round Calculation Results:

LOG(TPit) = 11.90 - 0.17 LOG(PPit) - 0.02 LOG(PEit) - 0.05 LOG(INFLASIit) -2.38 LOG(IPMit)+εit

The estimation results in the form of statements are as follows:

1. Open Unemployment Rate (TP) in the research model, if the independent variables (PP, PE, Inflation, HDI) are considered constant, then the open unemployment rate is 11.90%.
2. Population Growth (PP) is negatively correlated with the Open Unemployment Rate with a coefficient value of 0.17. This means that every 1 percent increase in population can reduce unemployment by 0.17

percent.

3. Economic Growth (PE) is negatively correlated with the Open Unemployment Rate with a coefficient value of 0.02. This means that an increase in the economic growth of 1 percent can reduce unemployment by 0.02 percent.
4. Inflation is negatively correlated with the Open Unemployment Rate with a coefficient value of 0.05. This means that an increase in inflation of 1 percent can reduce unemployment by 0.05 percent.
5. The Human Development Index (HDI) has a negative correlation with the Open Unemployment Rate with a coefficient value of 2.38. This means that a 1 percent increase in the Human Development Index can reduce unemployment by 2.38 percent.

If the magnitude of the Intercept value (β0) is different for each Regency/City, it is shown in the Fixed Effect Cross table below:

Table 2. Intersept Cross-Section

Fixed Effects (Cross)	Intersept
_KAB_POHUWATO—C	-0.517545
_KAB_BOALEMO—C	-0.295858
_KAB_GORUT—C	-0.122313
_KAB_GORONTALO—C	-0.042124
_KAB_BONBOL—C	0.224342
_KOTA_GORONTALO—C	0.753498

Note: Minus = Below Average and Positive = Above Average

Commented [KF9]: •Please see the reference in the template in creating a tabl
•This revision also applies to all tables in this article.

It is known that 4 regencies have intercept values below the average, including; Pohuwato, Boalemo, Gorut and Gorontalo regencies. This means that if it is assumed that the independent variable is constant, it will reduce the unemployment variable by 0.52 percent for Pohuwato Regency, and so on. Meanwhile, the regions with coefficients above the average consist of Bone Bolango Regency and Gorontalo City. This means that assuming constant independent variables, unemployment in Bone Bolango Regency will increase by 0.22 percent, and the same thing happens in Gorontalo City.

Hypothesis Test Result

1. **Population Growth to Unemployment Rate**
   It is known that the p-value for the population growth variable is 0.6072. If the p-value is compared with a significance level of 10%, the p-value obtained is still greater than 10% so Ho is accepted. So, the decision that can be taken is that population growth is not significant to the unemployment rate from 2011-to 2020.

2. **Economic Growth Against Unemployment Rate**
   It is known that the p-value for the Economic Growth variable is 0.0291. If the p-value is compared with a significance level of 5%, the p-value obtained is still smaller than 5% so Ho is rejected. Thus, it can be concluded that Economic Growth is significant to the Unemployment Rate in the period 2011-2020.

3. **Inflation against the Unemployment Rate**
   It is known that the p-value for the inflation variable is 0.2331. If the p-value is compared with a significance level of 10%, the p-value obtained is still greater than 10% so Ho is accepted. So, the decision that can be taken is that inflation is not significant to the unemployment rate during the years 2011-2020.

4. **Human Development Index to Unemployment Rate**
   It is known that the p-value for the Human Development Index variable is 0.0012. If the p- value is compared with a significance level of 1%, the p-value obtained is still smaller than 1%, so Ho is rejected. Thus, it can be concluded that the Human Development Index has a significant effect on the Unemployment Rate in the 2011-2020 period.

DISCUSSION

Population Growth to Unemployment Rate

From the estimation results, it is stated that the Population Growth variable has a negative and insignificant effect on the Unemployment Rate. This means that every increase in population growth does not necessarily reduce the unemployment rate in the Regency/City of Gorontalo Province. A.O Hirschman (Hirschman, 1964) argues that population growth can also stimulate the economy. One of the most serious problems facing developing regions is the growth of the working population, which has not been accompanied by an increase in job opportunities. This will eventually lead to unemployment (Oktarima & Nazipawati, 2021).

Based on the analysis results show that the unemployment rate will decrease along with the increase in population. Strong population growth does not necessarily mean increased unemployment. From a qualitative perspective, population growth has a positive effect if its growth can encourage economic development. This means that an increase in population can increase the number of workers, which can encourage the manufacturing sector to increase economic activity. On the other hand, population growth can have a negative impact if population growth can hinder economic development. This means that population growth cannot increase production and reduce the need for consumption of manufactured products.

Therefore, population growth must be considered by reducing the number of unproductive workers. However, this population growth must strike a balance between good talent and sufficient job opportunities to beat a large population with abundant employment opportunities (Ardiansa et al.,

2021). The results of this study are in line with (Oktarima & Nazipawati, 2021) research that population growth is negatively and insignificantly correlated with unemployment. The reason is that population growth does not necessarily increase the unemployment problem because the unemployment rate is caused by a disturbing variable, namely the wage level.

Economic Growth Against Unemployment Rate

From the estimation results, it is stated that the variable Economic Growth has a negative and significant effect on unemployment. This means that every increase in Economic Growth can reduce the unemployment rate in the Regency/City of Gorontalo Province. This shows that the regional economic growth of Gorontalo Province in recent years has been able to accommodate new workers and reduce unemployment. An increase in economic growth is usually followed by an increase in the production of goods and services. And when that happens, the need for labor to produce more goods and services will also increase. In other words, the regional economic growth of Gorontalo Province is related to job creation.

Economic growth as a creator of new jobs occurs because greater economic growth is contributed by consumption. With this increase in consumption, many companies increase the number of workers so that they can meet the consumption needs of the community. This is reasonable considering that economic growth is driven more by non-tradable sectors (sectors that cannot be traded, such as the financial and service sectors) rather than real sectors. The results of this study are in line with those reported by research by Adiyadnya (Adiyadnya & Swara, 2021). They argue that economic growth has a negative and significant impact on open unemployment. Because the region's high economic growth affects the industry's possibility to increase production.

Inflation against the Unemployment Rate

From the estimation results, it can be concluded that the inflation variable has a negative and insignificant effect on unemployment. This means that every increase in inflation does not necessarily reduce the unemployment rate in the Regency/City of Gorontalo Province. Inflation is an indication that a country's economy is deteriorating or this study is focused on regencies/cities in Gorontalo Province. High inflation can encourage the central bank to raise interest rates, which leads to deflation or negative growth in the real sector. Another effect is the increase in the number of unemployed, and inflation and the unemployment rate can be used to measure the good or bad of a country's economy.

It cannot be said that a temporary and sporadic increase in the number of goods causes inflation. When there is an increase in prices, it will affect people's purchasing power and have an impact on expensive production, thus having an impact on reducing labor. The Phillips curve can be used to describe the relationship between the inflation rate and the short-run unemployment rate. Phillips uses this curve to look at the relationship between unemployment and inflation in the UK. Phillips found that there is a

negative relationship between the inflation rate and the unemployment rate so that higher inflation can reduce unemployment (Yehosua et al., 2019).

This can happen by way of meeting this demand due to rising prices (inflation), producers can increase their production capacity by adding labor (labor is the only input that can increase production). Due to the increase in demand for labor, inflation will reduce unemployment. The results of this study are in line with research conducted by Shafira (Shafira et al., 2021). They found that inflation hurt unemployment. This increases the number of workers in many companies to produce more goods because prices continue to rise (inflation).

Human Development Index to Unemployment Rate

From the estimation results, it can be concluded that the Human Development Index variable has a negative and significant effect on unemployment. This means that with the increase in the Human Development Index, the unemployment rate in the state of Gorontalo Regency/City can decrease. Unemployment does not reflect the level of community welfare, while the ultimate goal of development is to create prosperity and prosperity for the community. High unemployment in an area hinders the achievement of economic development goals. People's incomes decrease, so that people's purchasing power decreases, even education and health which are the basis for improving human quality are not realized (Si'lang et al., 2019).

The indicators of the human development index according to BPS consist of Health, Education and per capita income. This means that one-third of the human development index indicator is the income per capita. Okun's law cited by Badu (Badu et al., 2020) research if per capita income decreases (indirectly also consumption decreases), unemployment will increase. The new growth theory (New Growth Theory) emphasizes the important role of government in Human Capital (Investment in human resources) and human resource development to increase human productivity. Investment in education is expected to improve the quality of human resources, which leads to an increase in knowledge and skills. The higher the human quality, the more knowledge and experience and the better the productivity of the workforce. The more workers employed, the lower the unemployment rate, because hiring more productive workers will improve the performance of acompany.

Keynes explained that the unemployment problem was caused by weak aggregate demand. Aggregate demand is all the demand for goods and services that occur in an economy. When the supply of labor increases, wages fall and wage cuts cause unprofitable losses because wage cuts show people's purchasing power for an item. People's purchasing power, one of the indicators of low HDI, causes companies to reduce production and absorb excess labor so that there is rarely a balance between supply and demand and unemployment occurs. The results of this study are in line with research conducted by Mahroji (Mahroji & Nurkhasanah, 2019) explaining that the development index has a negative and significant effect on the open

unemployment rate. This is because the law of supply and demand will increase the number of workers.

CONCLUSION

Based on the results and discussions that have been discussed in the previous chapter regarding the influence of socio-economic indicators on unemployment in Gorontalo Province, the researchers draw the following conclusions: 1) Population growth has a negative and insignificant effect on unemployment in Gorontalo Province. Which means. Any increase in population growth may not necessarily reduce the unemployment rate in the Regency/City of Gorontalo Province; 2) Economic growth has a negative and significant effect on the movement in Gorontalo Province. Which means. Any increase in economic growth can reduce the figures in the Regency/City of Gorontalo province; 3) Inflation has a negative and insignificant effect on movements in Gorontalo Province. Which means. Any increase in inflation does not reduce the inflation rate in the Regency/City of Gorontalo Province.

REFERENCES

Adiyadnya, M. S. P., & Swara, N. N. A. A. (2021). Pengaruh Tingkat Investasi , Nilai Tukar Rupiah dan Pertumbuhan Ekonomi Terhadap Tingkat Pengangguran. *Widya Manajemen*, *3*(2), 107–116. https://doi.org/10.32795/widyamanajemen.v3i2.1286

Ardiansa, Saleh, M., & Awaluddin, M. (2021). Pengaruh Pertumbuhan Ekonomi Dan Pertumbuhan Penduduk Serta Inflasi Terhadap Pengangguran Dan Kemiskinan Di Kalimantan Timur. *NUSANTARA : Jurnal Ilmu Pengetahuan Sosial*, *8*(8), 2576–2596. https://doi.org/http://dx.doi.org/10.31604/jips.v8i8.2021.2576-2596

Ayuningtyas, N. N. (2019). Pengaruh Inflasi Dan Pertumbuhan Penduduk Terhadap Tingkat Pengangguran Di Kota Samarinda. *Jurnal Ilmu Ekonomi Mulawarman*, *3*(4), 1–12. http://journal.feb.unmul.ac.id/index.php/JIEM/article/view/3790

Badan Pusat Statistik 2016-2020. (2020). *Tingkat Pengangguran Terbuka (TPT) Menurut Kabupaten/Kota (Persen)*.

Badu, R. R., Canon, S., & Akib, F. H. Y. (2020). The Impact of Economic Growth and Unemployment Rate on Poverty in Sulawesi. *Jambura Equilibrium Journal*, *2*(1), 25–33. https://doi.org/10.37479/jej.v2i1.4499

Choirur, R., Suratno, S., & Kuswanto, K. (2021). Effect of Education and Unemployment on Poverty in Jambi Province. *Jurnal Ekonomi Pembangunan*, *19*(01), 31–43. https://doi.org/10.22219/jep.v19i01.16817

Hirschman, A. O. (1964). *The Strategy of Economic Development*. Yale University Press. https://books.google.co.id/books?id=foREAAAAYAAJ

Hjazeen, H., Seraj, M., & Ozdeser, H. (2021). The nexus between the economic growth and unemployment in Jordan. *Future Business Journal*,

7(1), 42. https://doi.org/10.1186/s43093-021-00088-3

Idris, M. (2021). Effect of Unemployment and Inflation on Economic Growth in Nigeria. *Global Journal of Applied, Management and Social Sciences (GOJAMSS)*, *21*(Januari), 254–266.

Johan, K., Marwoto, P. A. N. B., & Pratiwi, D. (2016). Analisis Pengaruh Pertumbuhan Ekonomi, Inflasi Dan Investasi Terhadap Pengangguran Di Indonesia. *Jurnal Progresif Manajemen Bisnis (JPMB)*, *13*(2), 20–32.

Mahroji, D., & Nurkhasanah, I. (2019). Pengaruh Indeks Pembangunan Manusia Terhadap Tingkat Pengangguran Di Provinsi Banten. *Jurnal Ekonomi-Qu*, *9*(1), 51–72. https://doi.org/10.35448/jequ.v9i1.5436

Oktarima, T., & Nazipawati, N. (2021). Analisis Pengaruh Pertumbuhan Ekonomi dan Pertumbuhan Penduduk Terhadap Tingkat Pengangguran Terbuka di Kabupaten/Kota Provinsi Sumatera Selatan. *Ekonomika*, *14*(2), 175–194.

Parulian, T., & Mahendra, A. (2021). The Effect of the Fed Rate, Exchange Rate and Economic Growth on the IHSG with Inflation as a Moderating Variable. *International Journal of Research and Review*, *8*(7), 251–257. https://doi.org/10.52403/ijrr.20210735

Prawira, S. (2018). Pengaruh Pertumbuhan Ekonomi, Upah Minimum Provinsi, Dan Tingkat Pendidikan Terhadap Pengangguran Terbuka Di Indonesia. *Jurnal Ecogen*, *1*(4), 162. https://doi.org/10.24036/jmpe.v1i1.4735

Putong, I. (2013). *Economics Pengantar Mikro Dan Makro* (Edisi 5). Mitra Wacana Media.

Rungsrisawat, S., Jermsittiparsert, K., & Thanetpaksapong, S. (2019). Do the crime and the socioeconomic strain affect the economic growth? A case of an emerging asean economy. *Journal of Security and Sustainability Issues*, *9*(2), 391–407. https://doi.org/10.9770/jssi.2019.9.2(3)

Rustariyuni, S. D., Aswitari, L. P., Suryawan Ratha, P. W., & Nina, G. A. (2018). Open Unemployment in The Province of Bali. *MIMBAR : Jurnal Sosial Dan Pembangunan*, *34*(2), 473–485. https://doi.org/10.29313/mimbar.v34i2.3921

Sari, F. W. A. W., & Bangun, R. H. (2019). Pengaruh Sosial Ekonomi Terhadap Pola Penurunan Pengangguran Terbuka Di Provinsi Sumatera Utara Tahun 2003-2017. *NUSANTARA: Jurnal Ilmu Pengetahuan Sosial*, *6*(1), 31–40.

Shafira, V. A., Kumenaung, A. G., & Niode, A. O. (2021). Analisis Pengaruh Ump, Pertumbuhan Ekonomi Dan Inflasi Terhadap Tingkat Pengangguranterbuka Di Kota Manado. *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi*, *9*(1), 1411–1419.

Si'lang, I. L. S., Hasid, Z., & Priyagus, P. (2019). Analisis faktor-faktor yang berpengaruh terhadap indeks pembangunan manusia. *Jurnal Manajemen*, *11*(2), 159–169.

Sumaryoto, S., Herawati, M., & Hapsari, A. T. (2020). Analysis of Changes in the Unemployment Rate as a Result of the Human Development Index in Indonesia (Case Study 2010-2019). *Journal of Economics and Business*, *3*(4), 1538–1548. https://doi.org/10.31014/aior.1992.03.04.301

Yehosua, A, S., Rotinsulu, O, T., Niode, D., & O, A. (2019). Pengaruh Inflasi Dan Suku Bunga Terhadap Tingkat Pengangguran Di Kota Manado. *Jurnal Berkala Ilmiah Efisiensi*, *19*(01), 20–31.

REVISI

ANALYSIS OF THE SOCIO-ECONOMIC EFFECT ON UNEMPLOYMENT IN GORONTALO PROVINCE

Muhamad Zikri Zam-Zam a, Syarwani Canon b, Ivan Rahmat Santoso c*
[a, b, c] Department of Economics, Faculty of Economics, Gorontalo State University, Indonesia
* Corresponding author: ivan_santoso@ung.ac.id

Info Articles

Article history:
Received xxx
Revised xxx
Accepted xxx
Available online xxx

Keywords:
Indicators; Socioeconomic; Unemployment

JEL Classification; can be traced by clicking the following link: B55; E24

Abstract

This study aims to know whether or not socio-economic indicators affect unemployment in Gorontalo Province. This study uses secondary data of 5 regencies and 1 city (Gorontalo Regency, Bone Bolango Regency, Gorontalo Utara Regency, Baalemo Regency, Pohuwato Regency, and Gorontalo City) from 2011 to 2020 sourced from journals, articles, and government agencies, such as Statistics of Indonesia. The data analysis technique uses panel data regression analysis. The finding shows that population growth has a negative and insignificant effect on unemployment in Gorontalo Province. This means that any increase in population growth will not necessarily reduce the unemployment rate in the Regencies/City in Gorontalo Province. Economic growth has a negative and significant effect on unemployement in Gorontalo Province. This means that every increase in economic growth can reduce the unemployment rate in the Regencies/City in Gorontalo Province. Inflation has a negative and insignificant effect on unemployment in Gorontalo Province. This means that inflation does not necessarily reduce the unemployment rate in the Regencies/City in Gorontalo Province. The Human Development Index has a negative and significant effect on unemployment. This means that the increase in the human development index can reduce the unemployment rate in the Regencie/City in Gorontalo Province.

INTRODUCTION

As a developing country, Indonesia is still undergoing a process of economic development that aims to achieve people's welfare. One way to achieve this is by providing job opportunities and creating an equal distribution of income. There is still a gap between the number of jobs available and the number of the workforce, which triggers the creation of unemployment and will also have an impact on the life of other socioeconomic statuses such as poverty (Choirur et al., 2021) and increased crime (Rungsrisawat et al., 2019). The success of a country's economic development can be seen from several economic indicators, one of which is the unemployment rate. Based on the unemployment rate, can be seen the condition of a country whether its economy is developing slowly or even experiencing a decline (Badu et al., 2020).

At present, the issue of manpower mainly focuses on one of the problems faced by our country, not regulating Gorontalo Province. But on the other hand, unemployed people generally do it voluntarily either because they choose a job, wait for a suitable job or leave their old job to look for a

Commented [KF1]: • Please make revisions on this page by giving a different color to the revised sentence
• Customize with JEP templates
• For further information, please get in touch with 082233992354 (Fuddin)

Commented [KF2]: •Write in alphabetical order
•Add JELL clasification (Please your check template JEP)

Commented [KF3]: Write down the research gap analysis (the difference between the tone of the research and the previous research). Gap analysis is written after you write down your last research and before writing down the objectives of your research

Commented [KF4]: •Please hyperlink the citation with the table of contents. (For examples, please see the writing of citations and table of contents in previous JEP issues)
•This revision also applies to later quotes in this article

new job due to reasons of boredom, boredom or not being suitable for the job, and various other reasons (Putong, 2013). Unemployment in Gorontalo Province is still a serious problem that must receive government attention. The problem of unemployment is indeed very complex to discuss because it can be related to socio-economic indicators that will affect unemployment, namely population growth, economic growth, inflation and the human development index. Based on data from the Central Bureau of Statistics (Badan Pusat Statistik 2016-2020, 2020), the unemployment rate in Gorontalo Province has fluctuated. from year to year. In 2016 it had 2.56% then it increased in 2017 4.28% then fell again in 2018 3.70%, after that in 2019 it increased 3.76% and in 2020 it decreased 4.28%.

In the problem of unemployment in Gorontalo Province, of course, there are several socio-economic indicators that affect unemployment including population growth, economic growth, inflation and the human development index.Several previous studies have also shown similar findings, where factors such as the human development index (Sumaryoto et al., 2020)**,** inflation (Idris, 2021), population growth (Ayuningtyas, 2019) (Hjazeen et al., 2021), regional minimum wage (Rustariyuni et al., 2018) (Sari & Bangun, 2019) (Parulian & Mahendra, 2021) and economic growth (Prawira, 2018), (Johan et al., 2016) affect the unemployment rate. Previous research studies have found different results and perspectives. However, studies that attempt to analyze the effect of more comprehensive socioeconomic indicators on unemployment have received less attention from previous researchers. These limitations make a gap that will be completed in this study and is an added value for the novelty offered by the researcher. This study aims to determine how much influence population growth, economic growth, inflation and the human development index have on unemployment in Gorontalo Province. In addition, this study contributes to the development of science, particularly related to economics.

RESEARCH METHODS

This study uses a quantitative approach, to know the effect of population growth on unemployment in Gorontalo Province in 2011-2020, knowing the effect of economic growth on unemployment in Gorontalo Province 2011-2020, knowing the effect of inflation on unemployment in Gorontalo Province in 2011-2020, and determine the effect of the human development index on unemployment in Gorontalo Province 2011-2020. Analytical method used is a quantitative data analysis method using tools statistical data processing software Eviews 9 as a tool to test the data. Utility from Eviews itself is as a tool to present statistical information the results of hypothesis testing that are easily understood by readers and can be trusted.

Method of Collecting Data

The method used in data collection is conducting a literature study to obtain appropriate theories and reference materials from research journals, as well as other sources that explain the problems of this research. After that,

collect data. The data used in this study is secondary data obtained from Badan Pusat Statistik (BPS) of Gorontalo Province. The data obtained is data in annual form for each variable, both in the form of data that has been presented and as well as relevant sources for analysis purposes. The data needed in this study include data on the unemployment rate, population growth, economic growth, inflation and the human development index in Gorontalo Province.

Data Analysis Method

In this study, researchers used panel data regression which is a combination of time series and cross section. There are several advantages to using panel data. First, panel data is a combination of two data, namely time series with a cross section capable of providing more data so that it will produce a greater degree of freedom. Second, combining information from time series and cross section data can overcome problems that arise when it is the problem of eliminating variables (omitted-variables) (Widarjono, 2013). The panel data regression model in this study is as follows:

$$TP_{it} = \beta_0 + \beta_1 PP_{it} + \beta_2 PE_{it} + \beta_3 Inflasi_{it} + \beta_4 IPM_{it} + \varepsilon_{it}$$

Where :

TP	= Unemployment Rate
$\beta_1, \beta_2, \beta_3, \beta_4$	= Regression Coefficient
PP	= Population Growth
PE	= Economic Growth
Inflation	= Inflation
HDI	= human development index
ε	= Error terms
i	= Regency/City in Gorontalo Province
t	= Period 2011-2020

Panel Data Analysis Model

The model in panel data regression consists of 3 models which are described as follows (Widarjono, 2013):

1. **Common Effect Model (CEM) or Pool Least Square (PLS)**
   The CEM or PLS model is the simplest panel data model approach because it only combines time series data and cross section data. In this model, neither time nor individual dimensions are taken into account. This method can use the Ordinary Least Square (OLS) approach or the least squares technique to estimate the panel data model.
2. **Fixed Effect Model (FEM)**
   This model assumes that differences between individuals can be accommodated from differences in intercepts. This approach is a regression

approach with a dummy variable as the independent variable. FEM calculates the possibility of researchers facing the problem of omitted variables that can bring changes to the intercept time series or cross-section.

3. **Random Effect Model (REM)**
   This approach can make it possible to see differences between individuals or time through errors. In REM, the error is assumed to be random and estimated using the Generalized Least Square (GLS) method. REM takes into account that errors may be correlated throughout the time series and cross-section.

The panel models in this approach are:

$$Y_{it} = \beta_{it} + \beta_2 X_{3it} + \cdots + \beta_n X_{nit} + \mu_{it} \quad \text{.....(1)}$$

In selecting the model to be used in this study, each model must be tested. The use of the fixed effects method with the pooled least square method can be tested with the F-Test, while The Hausman specification test is carried out by calculating the fixed effect method and the random effect method.

RESULT AND DISCUSSION

Commented [KF5]: •Deepen again related to the analysis and discussion in this article
•Complete all the analysis that has been done in this article

Selection of Panel Data Analysis Model

There are three types of panel data analysis: combined effects model (CEM), fixed effects model (FEM), and random effects model (REM). We can use multiple tests, Chow tests, and Hausman tests to choose one of the three best models above. The Chow test was used to choose between the CEM and FEM models, and the Hausman test was used to choose between the FEM and REM models.

Table 1. Justification of Research Model

Commented [KF6]: •Please see the reference in the template in creating a table
•This revision also applies to all tables in this article.

Justification of Model	Probality	criteria	Decision
Uji Chow	Cross Section F= 0.0000***	ρ<α	FEM
Uji Hausman	Cross Section Random=0.0006***	ρ<α	FEM

*Note: Confidence level = ***)1%, **)5%, *)10%, NS) Not Significant*
Source: Estimated Results, 2022

With the level of confidence that has been determined in this study, it is known that the value
- from the Chow test is 0.0000 and the value - from the Hausman test is 0.0006 which is smaller than the 1% significance value so it can be concluded that

H0 is rejected. This means that the model selected based on the two tests (Chow and Hausman tests) above is the Fixed Effects Model.

Estimated Results

The estimation results are intended to determine the relationship between two variables, namely the dependent variable (Unemployment Rate) and the independent variable (Population Growth, Economic Growth, Inflation and Human Development Index). The first step in the data processing process is to convert the data into logs. In addition to providing a better estimate of the relationship between variables, changing the logarithmic data can reduce the estimated residual (residual) generated by the regression equation.

Table 2. Results of Data Panel Regression

Dependent Variable: LOG(TP?)				
Method: Pooled EGLS (Cross-section SUR)				
Sample: 2011-2020				
Cross-sections included: 6				
Total pool (balanced) observations: 60				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.90204	3.074347	3.871405	0.0003***
LOG(PP?)	-0.169424	0.327449	-0.517405	0.6072TS
LOG(PE?)	-0.020176	0.008979	-2.246959	0.0291**
LOG(INFLASI?)	-0.045169	0.037424	-1.206956	0.2331TS
LOG(IPM?)	-2.382533	0.693044	-3.437780	0.0012***
Fixed Effects (Cross)				
_KAB_BOALEMO—C	-0.295858			
_KAB_BONBOL—C	0.224342			
_KAB_GORONTALO--C	-0.042124			
_KAB_GORUT—C	-0.122313			
_KAB_POHUWATO—C	-0.517545			
_KOTA_GORONTALO--C	0.753498			
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.928670	Mean dependent var		14.62880
Adjusted R-squared	0.915831	S.D. dependent var		10.49351
S.E. of regression	1.065097	Sum squared resid		56.72162
F-statistic	72.33005	Durbin-Watson stat		2.079744
Prob(F-statistic)	0.0000***			

Notes: ***)1%, **)5%, *)10%, NS) Not Significant
Source: Estimated Results, 2022

Commented [KF7]: •Please see the reference in the template in creating a table
•This revision also applies to all tables in this article.

Regression Equation:

$$LOG(TPit) = 11.90204 - 0.169424\ LOG(PPit) - 0.020176\ LOG(PEit) - 0.045169LOG(INFLASIit) - 2.382533LOG(IPMit) + \varepsilon it$$

Round Calculation Results:

$$LOG(TPit) = 11.90 - 0.17\ LOG(PPit) - 0.02\ LOG(PEit) - 0.05\ LOG(INFLASIit) - 2.38\ LOG(IPMit) + \varepsilon it$$

The estimation results in the form of statements are as follows:

1. Open Unemployment Rate (TP) in the research model, if the independent variables (PP, PE, Inflation, HDI) are considered constant, then the open unemployment rate is 11.90%.
2. Population Growth (PP) is negatively correlated with the Open Unemployment Rate with a coefficient value of 0.17. This means that every 1 percent increase in population can reduce unemployment by 0.17 percent.
3. Economic Growth (PE) is negatively correlated with the Open Unemployment Rate with a coefficient value of 0.02. This means that an increase in the economic growth of 1 percent can reduce unemployment by 0.02 percent.
4. Inflation is negatively correlated with the Open Unemployment Rate with a coefficient value of 0.05. This means that an increase in inflation of 1 percent can reduce unemployment by 0.05 percent.
5. The Human Development Index (HDI) has a negative correlation with the Open Unemployment Rate with a coefficient value of 2.38. This means that a 1 percent increase in the Human Development Index can reduce unemployment by 2.38 percent.

If the magnitude of the Intercept value (β0) is different for each Regency/City, it is shown in the Fixed Effect Cross table below:

Table 3. Intersept Cross-Section

Fixed Effects (Cross)	Intersept
_KAB_POHUWATO—C	-0.517545
_KAB_BOALEMO—C	-0.295858
_KAB_GORUT—C	-0.122313
_KAB_GORONTALO—C	-0.042124
_KAB_BONBOL—C	0.224342
_KOTA_GORONTALO—C	0.753498

Note: Minus = Below Average and Positive = Above Average

Commented [KF8]: •Please see the reference in the template in creating a tabl
•This revision also applies to all tables in this article.

It is known that 4 regencies have intercept values below the average, including; Pohuwato, Boalemo, Gorut and Gorontalo regencies. This means that if it is assumed that the independent variable is constant, it will reduce the unemployment variable by 0.52 percent for Pohuwato Regency, and so on. Meanwhile, the regions with coefficients above the average consist of Bone Bolango Regency and Gorontalo City. This means that assuming constant independent variables, unemployment in Bone Bolango Regency will increase by 0.22 percent, and the same thing happens in Gorontalo City.

Statistical Hypothesis Testing

Hypothesis testing is used to statistically test the validity of a statement and decide whether to accept or reject the hypothesis that has been formed. Thus, this research only answers the questions by stating the rejection or acceptance of the hypothesis.

Goodness of Fit (R-Squared) Test

The Goodness of Fit test or better known as the coefficient of determination aims to measure the model's ability to calculate the dependent variable. The coefficient of determination ranges between zero (0) and not more than one (1). A low R-squared value means that the independent variable has limited ability to explain the dependent variable. In multiple linear regression with more than two dependent variables, it would be better if we use the adjusted R-square value (Adj R-square), because the addition of the dependent variable or more than two variables will affect the R-square value. It is known that the value of Adj R-square is 0.915831, if it is presented as a percentage, this value means 91.58%. This means that 91.58% of changes in the unemployment rate variable are influenced by the dependent variable (Population Growth, Economic Growth, Inflation and Human Development Index). While the remaining 8.42% is influenced by other variables outside the observation model.

Simultaneous Significance Test (F-Statistics)

The purpose of the f-statistical test is to be able to show whether all independent variables in the model have the same or simultaneous effect on the dependent variable. The method used in this test is to compare it with the F-statistical Prob value in the statistical application output table. If p-value < α, then reject H0 and accept H1. It is known that the probability of F-statistics is 0.0000 and the level of significance (α) = 10%, 5% and 1%. Thus, a decision can be made that all independent variables simultaneously affect the dependent variable. This is because the value of the p-value of the probability F-statistic is smaller than the 1 percent significance level.

Individual Significance Test (t-Statistic)

The t-statistical test aims to determine how much influence each independent variable has on the dependent variable. In the F-statistical test we only need to compare the F-statistical Prob and Significance level, the same is done in the t-statistical test. We only compare the probability of each independent variable with the level of significance. There are 3 levels of significance used in this study, namely 10 percent, 5 percent and 1 percent.

1. **Population Growth to Unemployment Rate**
   It is known that the p-value for the population growth variable is 0.6072. If the p-value is compared with a significance level of 10%, the p-value obtained is still greater than 10% so Ho is accepted. So, the decision that

can be taken is that population growth is not significant to the unemployment rate from 2011-to 2020.

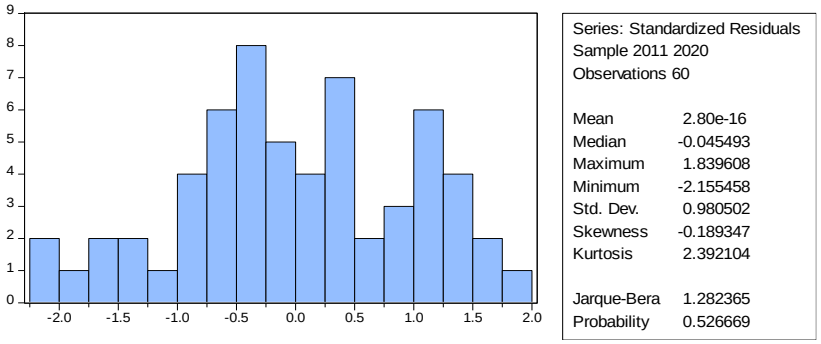
2. **Economic Growth Against Unemployment Rate**
   It is known that the p-value for the Economic Growth variable is 0.0291. If the p-value is compared with a significance level of 5%, the p-value obtained is still smaller than 5% so Ho is rejected. Thus, it can be concluded that Economic Growth is significant to the Unemployment Rate in the period 2011-2020.
3. **Inflation against the Unemployment Rate**
   It is known that the p-value for the inflation variable is 0.2331. If the p-value is compared with a significance level of 10%, the p-value obtained is still greater than 10% so Ho is accepted. So, the decision that can be taken is that inflation is not significant to the unemployment rate during the years 2011-2020.
4. **Human Development Index to Unemployment Rate**
   It is known that the p-value for the Human Development Index variable is 0.0012. If the p- value is compared with a significance level of 1%, the p-value obtained is still smaller than 1%, so Ho is rejected. Thus, it can be concluded that the Human Development Index has a significant effect on the Unemployment Rate in the 2011-2020 period.

Classic Assumption Validity Test

Regression model is used for forecasting and a good model is one that has minimum prediction error. Or better known as BLUE (Best Linear Unbiased Estimation) which assumes that the estimation results do not have biased parameters. The classical assumption tests are Normality-test, Multicollinearity-test, Autocorrelation-test and Heteroscedasticity-test.

Normality-test

Figure 1: Normality of data



Notes: ***)1%, **)5%, *)10%, NS) Not Significant
Source: Estimated Results, 2022

The results of the normality test above using Eviews 9 provide normal residual test results with a jarque-berra value of 1.282365 with a probability value of 0.526669 (0.526669 > 0.1), so the decision was taken that the data were normally distributed

Multicollinearity-test

The correlation test between independent variables is called the multicollinearity test, which is useful for checking whether there is a correlation between independent variables in the regression model. When there is a correlation, it means that there is a linear relationship between the variables. A good regression model should not have interactions between independent variables. Therefore, the multicollinearity test was carried out by observing the calculated value of the correlation coefficient between the independent variables. The selected model must be free from multicollinearity, that is, if the correlation coefficient value is lower than 0.80, it can be said that there is no correlation between the independent variables. The results of the calculation are as follows:

Table 4. Multicollinearity

Independen	LOG(PG)	LOG(EG)	LOG(INFLATION)	LOG(HDM)
LOG(PP)	1.0000			
LOG(PE)	-0.0427	1.0000		
LOG(INFLASI)	-0.0744	0.6040	1.0000	
LOG(IPM)	0.2012	-0.1832	-0.4434	1.0000

Source: Estimated Results, 2022

The table above shows the correlation between the Independent Variables with each other. The correlations between independent variables include: 1) Variable Population Growth with economic growth does not occur multicollinearity (value 0.0427 less than 0.80); 2) Variable Population Growth with economic growth does not occur multicollinearity (value 0.0427 less than 0.80); 3) Population Growth with Inflation also does not occur multicollinearity (value 0.0744 less than 0.80); 4) For population growth with the Human Development Index, there is no multicollinearity (value of 0.2012 is less than 0.80); 5) Economic growth and inflation do not occur Multicollinearity (value 0.6040 less than 0.80); 6) Economic growth and human development index do not occur Multicollinearity (value 0.1832 less than 0.80); 7) Inflation and Human Development Index There is no multicollinearity (-0.4434 less than 0.80). So that the decision that can be taken is that all independent variables have no correlation with each other and do not contain symptoms of multicollinearity.

Autocorrelation-test

The purpose of the autocorrelation test is to determine whether, in the linear regression model, there is a correlation between the confounding error in period t and the confounding error in period t-1 (previous). The method that can be used to determine whether there is autocorrelation in the Duribin Watson test. It is known that the number of observation data or the value of N = 60 and the number of confounding variables or the value of K = 5 So that in the DW table the value of Du = 1.73 and the value of DL = 1.44, while the value of DW in the model estimation above is 2.079744. This means that it can be explained that the regression estimation of the previous model does not have an autocorrelation problem, because the value of DW(2.079744) > DU(1.73).

Heteroscedasticity-test

Test of non-uniform variance (heteroscedasticity) occurs when the error or residual of the observed model does not have a constant variance from other observations. Heteroscedasticity test in this study was conducted using the Glejser method. Where the value of the residuals from the results of the equation is regressed with the dependent variable in the model. If the -value is greater than the significant level, this observation is free from heteroscedasticity problems.

Table 4. Heteroscedasticity

Dependent Variable: RESABS
Method: Panel Least Squares
Sample: 2011 2020
Cross-sections included: 6
Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.555796	1.274580	2.005206	0.0499^{TS}
LOG(PP)	-0.115517	0.050634	-2.281409	0.0264^{TS}
LOG(PE)	-0.008160	0.015320	-0.532658	0.5964^{TS}
LOG(INFLASI)	0.113400	0.054031	2.098788	0.0404^{TS}
LOG(IPM)	-0.522478	0.302364	-1.727976	0.0896^{TS}

Notes: ***)1%, **)5%, *)10%, NS) Not Significant
Source: Estimated Results, 2022

Testing of non-uniform variance (Heteroscedasticity) using the glejser test. In the non-uniform dispersion test, the value of Sig (α) is greater than 0.01, heteroscedasticity dispersion symptoms are considered invalid. The data does not show a non-uniform variance, meaning that the regression equation in the observation does not occur heteroscedasticity

DISCUSSION

Population Growth to Unemployment Rate

From the estimation results, it is stated that the Population Growth variable has a negative and insignificant effect on the Unemployment Rate. This means that every increase in population growth does not necessarily reduce the unemployment rate in the Regency/City of Gorontalo Province. A.O Hirschman (Hirschman, 1964) argues that population growth can also stimulate the economy. One of the most serious problems facing developing regions is the growth of the working population, which has not been accompanied by an increase in job opportunities. This will eventually lead to unemployment (Oktarima & Nazipawati, 2021).

Based on the analysis results show that the unemployment rate will decrease along with the increase in population. Strong population growth does not necessarily mean increased unemployment. From a qualitative perspective, population growth has a positive effect if its growth can encourage economic development. This means that an increase in population can increase the number of workers, which can encourage the manufacturing sector to increase economic activity. On the other hand, population growth can have a negative impact if population growth can hinder economic development. This means that population growth cannot increase production and reduce the need for consumption of manufactured products.

Therefore, population growth must be considered by reducing the number of unproductive workers. However, this population growth must strike a balance between good talent and sufficient job opportunities to beat a large population with abundant employment opportunities (Ardiansa et al., 2021). The results of this study are in line with (Oktarima & Nazipawati, 2021) research that population growth is negatively and insignificantly correlated with unemployment. The reason is that population growth does not necessarily increase the unemployment problem because the unemployment rate is caused by a disturbing variable, namely the wage level.

Economic Growth Against Unemployment Rate

From the estimation results, it is stated that the variable Economic Growth has a negative and significant effect on unemployment. This means that every increase in Economic Growth can reduce the unemployment rate in the Regency/City of Gorontalo Province. This shows that the regional economic growth of Gorontalo Province in recent years has been able to accommodate new workers and reduce unemployment. An increase in economic growth is usually followed by an increase in the production of goods and services. And when that happens, the need for labor to produce more goods and services will also increase. In other words, the regional economic growth of Gorontalo Province is related to job creation.

Economic growth as a creator of new jobs occurs because greater economic growth is contributed by consumption. With this increase in consumption, many companies increase the number of workers so that they can meet the consumption needs of the community. This is reasonable considering that economic growth is driven more by non-tradable sectors

(sectors that cannot be traded, such as the financial and service sectors) rather than real sectors. The results of this study are in line with those reported by research by Adiyadnya (Adiyadnya & Swara, 2021). They argue that economic growth has a negative and significant impact on open unemployment. Because the region's high economic growth affects the industry's possibility to increase production.

Inflation against the Unemployment Rate

From the estimation results, it can be concluded that the inflation variable has a negative and insignificant effect on unemployment. This means that every increase in inflation does not necessarily reduce the unemployment rate in the Regency/City of Gorontalo Province. Inflation is an indication that a country's economy is deteriorating or this study is focused on regencies/cities in Gorontalo Province. High inflation can encourage the central bank to raise interest rates, which leads to deflation or negative growth in the real sector. Another effect is the increase in the number of unemployed, and inflation and the unemployment rate can be used to measure the good or bad of a country's economy.

It cannot be said that a temporary and sporadic increase in the number of goods causes inflation. When there is an increase in prices, it will affect people's purchasing power and have an impact on expensive production, thus having an impact on reducing labor. The Phillips curve can be used to describe the relationship between the inflation rate and the short-run unemployment rate. Phillips uses this curve to look at the relationship between unemployment and inflation in the UK. Phillips found that there is a negative relationship between the inflation rate and the unemployment rate so that higher inflation can reduce unemployment (Yehosua et al., 2019).

This can happen by way of meeting this demand due to rising prices (inflation), producers can increase their production capacity by adding labor (labor is the only input that can increase production). Due to the increase in demand for labor, inflation will reduce unemployment. The results of this study are in line with research conducted by Shafira (Shafira et al., 2021). They found that inflation hurt unemployment. This increases the number of workers in many companies to produce more goods because prices continue to rise (inflation).

Human Development Index to Unemployment Rate

From the estimation results, it can be concluded that the Human Development Index variable has a negative and significant effect on unemployment. This means that with the increase in the Human Development Index, the unemployment rate in the state of Gorontalo Regency/City can decrease. Unemployment does not reflect the level of community welfare, while the ultimate goal of development is to create prosperity and prosperity for the community. High unemployment in an area hinders the achievement of economic development goals. People's incomes decrease, so that people's purchasing power decreases, even education and health which are the basis for improving human quality are not realized (Si'lang et al., 2019).

The indicators of the human development index according to BPS consist of Health, Education and per capita income. This means that one-third of the human development index indicator is the income per capita. Okun's law cited by Badu (Badu et al., 2020) research if per capita income decreases (indirectly also consumption decreases), unemployment will increase. The new growth theory (New Growth Theory) emphasizes the important role of government in Human Capital (Investment in human resources) and human resource development to increase human productivity. Investment in education is expected to improve the quality of human resources, which leads to an increase in knowledge and skills. The higher the human quality, the more knowledge and experience and the better the productivity of the workforce. The more workers employed, the lower the unemployment rate, because hiring more productive workers will improve the performance of acompany.

Keynes explained that the unemployment problem was caused by weak aggregate demand. Aggregate demand is all the demand for goods and services that occur in an economy. When the supply of labor increases, wages fall and wage cuts cause unprofitable losses because wage cuts show people's purchasing power for an item. People's purchasing power, one of the indicators of low HDI, causes companies to reduce production and absorb excess labor so that there is rarely a balance between supply and demand and unemployment occurs. The results of this study are in line with research conducted by Mahroji (Mahroji & Nurkhasanah, 2019) explaining that the development index has a negative and significant effect on the open unemployment rate. This is because the law of supply and demand will increase the number of workers.

CONCLUSION

Based on the results and discussions that have been discussed in the previous chapter regarding the influence of socio-economic indicators on unemployment in Gorontalo Province, the researchers draw the following conclusions: 1) Population growth has a negative and insignificant effect on unemployment in Gorontalo Province. Which means. Any increase in population growth may not necessarily reduce the unemployment rate in the Regency/City of Gorontalo Province; 2) Economic growth has a negative and significant effect on the movement in Gorontalo Province. Which means. Any increase in economic growth can reduce the figures in the Regency/City of Gorontalo province; 3) Inflation has a negative and insignificant effect on movements in Gorontalo Province. Which means. Any increase in inflation does not reduce the inflation rate in the Regency/City of Gorontalo Province.

REFERENCES

Adiyadnya, M. S. P., & Swara, N. N. A. A. (2021). Pengaruh Tingkat Investasi , Nilai Tukar Rupiah dan Pertumbuhan Ekonomi Terhadap

Tingkat Pengangguran. *Widya Manajemen*, *3*(2), 107–116. https://doi.org/10.32795/widyamanajemen.v3i2.1286

Ardiansa, Saleh, M., & Awaluddin, M. (2021). Pengaruh Pertumbuhan Ekonomi Dan Pertumbuhan Penduduk Serta Inflasi Terhadap Pengangguran Dan Kemiskinan Di Kalimantan Timur. *NUSANTARA : Jurnal Ilmu Pengetahuan Sosial*, *8*(8), 2576–2596. https://doi.org/http://dx.doi.org/10.31604/jips.v8i8.2021.2576-2596

Ayuningtyas, N. N. (2019). Pengaruh Inflasi Dan Pertumbuhan Penduduk Terhadap Tingkat Pengangguran Di Kota Samarinda. *Jurnal Ilmu Ekonomi Mulawarman*, *3*(4), 1–12. http://journal.feb.unmul.ac.id/index.php/JIEM/article/view/3790

Badan Pusat Statistik 2016-2020. (2020). *Tingkat Pengangguran Terbuka (TPT) Menurut Kabupaten/Kota (Persen)*.

Badu, R. R., Canon, S., & Akib, F. H. Y. (2020). The Impact of Economic Growth and Unemployment Rate on Poverty in Sulawesi. *Jambura Equilibrium Journal*, *2*(1), 25–33. https://doi.org/10.37479/jej.v2i1.4499

Choirur, R., Suratno, S., & Kuswanto, K. (2021). Effect of Education and Unemployment on Poverty in Jambi Province. *Jurnal Ekonomi Pembangunan*, *19*(01), 31–43. https://doi.org/10.22219/jep.v19i01.16817

Hirschman, A. O. (1964). *The Strategy of Economic Development*. Yale University Press. https://books.google.co.id/books?id=foREAAAAYAAJ

Hjazeen, H., Seraj, M., & Ozdeser, H. (2021). The nexus between the economic growth and unemployment in Jordan. *Future Business Journal*, *7*(1), 42. https://doi.org/10.1186/s43093-021-00088-3

Idris, M. (2021). Effect of Unemployment and Inflation on Economic Growth in Nigeria. *Global Journal of Applied, Management and Social Sciences (GOJAMSS)*, *21*(Januari), 254–266.

Johan, K., Marwoto, P. A. N. B., & Pratiwi, D. (2016). Analisis Pengaruh Pertumbuhan Ekonomi, Inflasi Dan Investasi Terhadap Pengangguran Di Indonesia. *Jurnal Progresif Manajemen Bisnis (JPMB)*, *13*(2), 20–32.

Mahroji, D., & Nurkhasanah, I. (2019). Pengaruh Indeks Pembangunan Manusia Terhadap Tingkat Pengangguran Di Provinsi Banten. *Jurnal Ekonomi-Qu*, *9*(1), 51–72. https://doi.org/10.35448/jequ.v9i1.5436

Oktarima, T., & Nazipawati, N. (2021). Analisis Pengaruh Pertumbuhan Ekonomi Dan Pertumbuhan Penduduk Terhadap Tingkat Pengangguran Terbuka Di Kabupaten/Kota Provinsi Sumatera Selatan. *Ekonomika*, *14*(2), 175–194.

Parulian, T., & Mahendra, A. (2021). The Effect of the Fed Rate, Exchange Rate and Economic Growth on the IHSG with Inflation as a Moderating Variable. *International Journal of Research and Review*, *8*(7), 251–257. https://doi.org/10.52403/ijrr.20210735

Prawira, S. (2018). Pengaruh Pertumbuhan Ekonomi, Upah Minimum Provinsi, Dan Tingkat Pendidikan Terhadap Pengangguran Terbuka Di Indonesia. *Jurnal Ecogen*, *1*(4), 162. https://doi.org/10.24036/jmpe.v1i1.4735

Putong, I. (2013). *Economics Pengantar Mikro Dan Makro* (Edisi 5). Mitra

Wacana Media.

Rungsrisawat, S., Jermsittiparsert, K., & Thanetpaksapong, S. (2019). Do the crime and the socioeconomic strain affect the economic growth? A case of an emerging asean economy. *Journal of Security and Sustainability Issues*, *9*(2), 391–407. https://doi.org/10.9770/jssi.2019.9.2(3)

Rustariyuni, S. D., Aswitari, L. P., Suryawan Ratha, P. W., & Nina, G. A. (2018). Open Unemployment in The Province of Bali. *MIMBAR : Jurnal Sosial Dan Pembangunan*, *34*(2), 473–485. https://doi.org/10.29313/mimbar.v34i2.3921

Sari, F. W. A. W., & Bangun, R. H. (2019). Pengaruh Sosial Ekonomi Terhadap Pola Penurunan Pengangguran Terbuka Di Provinsi Sumatera Utara Tahun 2003-2017. *NUSANTARA: Jurnal Ilmu Pengetahuan Sosial*, *6*(1), 31–40.

Shafira, V. A., Kumenaung, A. G., & Niode, A. O. (2021). Analisis Pengaruh Ump, Pertumbuhan Ekonomi Dan Inflasi Terhadap Tingkat Pengangguranterbuka Di Kota Manado. *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi*, *9*(1), 1411–1419.

Si'lang, I. L. S., Hasid, Z., & Priyagus, P. (2019). Analisis faktor-faktor yang berpengaruh terhadap indeks pembangunan manusia. *Jurnal Manajemen*, *11*(2), 159–169.

Sumaryoto, S., Herawati, M., & Hapsari, A. T. (2020). Analysis of Changes in the Unemployment Rate as a Result of the Human Development Index in Indonesia (Case Study 2010-2019). *Journal of Economics and Business*, *3*(4), 1538–1548. https://doi.org/10.31014/aior.1992.03.04.301

Widarjono, A. (2013). Ekonometrika. In *UPP STIM YKPN. Yogyakarta*.

Yehosua, A, S., Rotinsulu, O, T., Niode, D., & O, A. (2019). Pengaruh Inflasi Dan Suku Bunga Terhadap Tingkat Pengangguran Di Kota Manado. *Jurnal Berkala Ilmiah Efisiensi*, *19*(01), 20–31.

[JEP] Editor Decision

Ivan Rahmat Santoso <ivan_santoso@ung.ac.id> 10 Mei 2022 pukul 22.03
Kepada: Editor Jurnal Ekonomi Pembangunan <noreply@umm.ac.id>

Dear Editor in Chief
Jurnal Ekonomi Pembangunan (JEP)

Here we attach the results of the revised article
[Kutipan teks disembunyikan]

Article (Revisions).doc
746K

PUBLISH

PUSAT PENGKAJIAN EKONOMI DAN KEBIJAKAN PUBLIK
FAKULTAS EKONOMI DAN BISNIS
UNIVERSITAS MUHAMMADIYAH MALANG
Jl. Raya Tlogomas 246 Telp. (0341) 464318 ext. 215 Fax. (0341) 460435 Malang 65144
Website : http: // ppekp.umm.ac.id Email : ppekp@umm.ac.id

Malang, 3 Januari 2023

Kepada. Yth

Ivan Santoso

Universitas Negeri Gorontalo

Manuscript Delivery

Assalamu`alaikum wr. wb.

Thank you for your trust in sending you a manuscript entitled:

Analysis Of The Socio-Economic Effect On Unemployment In Gorontalo Province

Following the standard procedures in the **Jurnal Ekonomi Pembangunan**, the manuscript has been sent to our expert editor following the topic submitted for blind review. Based on the results of the blind review, we, at this moment, convey that the description is stated:

Accepted

The above article will be published in the **Vol. 20 Issue 1, June 2022,** which later on June 30, 2022, will be published online on the Jurnal Ekonomi Pembangunan website.

Wassalamu`alaikum wr. wb.

M. Sri Wahyudi S, S.E., M.E.
Managing Editor Jurnal Ekonomi Pembangunan

Jurnal Ekonomi Pembangunan
Vol. 20, No. 01, Bulan Tahun, pp. 62 ~ 75

Analysis Of The Socio-Economic Effect On Unemployment In Gorontalo Province

Muhamad Zikri Zam-Zam[a], Syarwani Canon[b], Ivan Rahmat Santoso[c*]
[a, b, c] Department of Economics, Faculty of Economics, Gorontalo State University, Indonesia
* Corresponding author: ivan_santoso@ung.ac.id

Info Articles

Article history:
Received April 9, 2022
Revised May 10 2022,
Accepted June 2, 2022
Available online June 30, 2022

Keywords:
Indicators; Socioeconomic; Unemployment

JEL Classification: B55; E24

Abstract

This study aims to know whether or not socio-economic indicators affect unemployment in Gorontalo Province. This study uses secondary data from 5 regencies and one city (Gorontalo Regency, Bone Bolango Regency, Gorontalo Utara Regency, Baalemo Regency, Pohuwato Regency, and Gorontalo City) from 2011 to 2020 sourced from journals, articles, and government agencies, such as Statistics of Indonesia. The data analysis technique uses panel data regression analysis. The finding shows that population growth has a negative and insignificant effect on unemployment in Gorontalo Province. Population growth will not necessarily reduce the unemployment rate in the Regencies/cities in Gorontalo Province. Economic growth has a negative and significant effect on unemployment in Gorontalo Province; every increase in economic growth can reduce the unemployment rate in the Regencies/cities in Gorontalo Province. Inflation has a negative and insignificant effect on unemployment in Gorontalo Province; inflation does not necessarily reduce the unemployment rate in the Regencies/cities in Gorontalo Province. The Human Development Index has a negative and significant effect on unemployment; This means that the increase in the human development index can reduce the unemployment rate in the Regency/City in Gorontalo Province.

INTRODUCTION

As a developing country, Indonesia is still undergoing a process of economic development that aims to achieve people's welfare. One way to accomplish this is by providing job opportunities and creating an equal income distribution. There is still a gap between the number of jobs available and the number of the workforce, which triggers the creation of unemployment and will also have an impact on the life of other socio-economic statuses such as poverty (Choirur et al., 2021) and increased crime (Rungsrisawat et al., 2019). The success of a country's economic development can be from several economic indicators, one of which is the unemployment rate. Based on the unemployment rate, the condition of a nation can determine whether its economy is developing slowly or experiencing a decline (Badu et al., 2020).

At present, the issue of human resources mainly focuses on one of the problems faced by our country, not regulating Gorontalo Province. Unemployed people generally do it voluntarily either because they choose a job, wait for a suitable job, or leave their old position to look for a new job

due to boredom, boredom or not being ideal for the job, and various other reasons (Putong, 2013). Unemployment in Gorontalo Province is still a severe problem that must receive government attention. The unemployment problem is complex because it can be related to socio-economic indicators that will affect unemployment, namely population growth, economic growth, inflation, and the human development index. Based on data from the Central Bureau of Statistics (Badan Pusat Statistik 2016-2020, 2020), the unemployment rate in Gorontalo Province has fluctuated. From year to year. In 2016 it had 2.56%; then it increased in 2017 to 4.28%. Then fell again in 2018 to 3.70%; after that, in 2019, it rose to 3.76%; in 2020, it decreased to 4.28%.

In the problem of unemployment in Gorontalo Province, several socio-economic indicators affect unemployment, including population growth, economic growth, inflation, and the human development index. Several previous studies have also shown similar findings, where factors such as the human development index (Sumaryoto et al., 2020), inflation (Idris, 2021), population growth (Ayuningtyas, 2019) (Hjazeen et al., 2021), regional minimum wage (Rustariyuni et al., 2018) (Sari & Bangun, 2019) (Parulian & Mahendra, 2021) and economic growth (Prawira, 2018), (Johan et al., 2016) affect the unemployment rate. Previous research studies have found different results and perspectives. However, studies that attempt to analyze the effect of more comprehensive socio-economic indicators on unemployment have received less attention from previous researchers. These limitations make a gap that will be completed in this study and is an added value to the novelty the researcher offers. This study aims to determine how much influence population growth, economic growth, inflation, and the human development index have on unemployment in Gorontalo Province. In addition, this study contributes to the development of science, particularly related to economics.

RESEARCH METHODS

This study used a quantitative approach to know the effect of population growth on unemployment in Gorontalo Province from 2011 to 2020 and understand the impact of economic growth on unemployment in Gorontalo Province from 2011 to 2020. Know the effect of inflation on unemployment in Gorontalo Province in 2011-2020 and determine the impact of the human development index on unemployment in Gorontalo Province 2011-2020. The analytical method used is a quantitative data analysis method using tools statistical data processing software Eviews 9 as a tool to test the data. Utility from Eviews is a tool to present statistical information and the results of hypothesis testing that are easily understood by readers and can be trusted.

Method of Collecting Data

The method used in data collection is conducting a literature study to obtain appropriate theories and reference materials from research journals and other sources that explain the problems of this research. After that, collect data. The data used in this study is secondary data obtained from Badan Pusat Statistik (BPS) of Gorontalo Province. The data obtained is in an annual form

for each variable, both in the form of data presented and relevant sources for analysis. The data needed in this study include data on the unemployment rate, population growth, economic growth, inflation, and the human development index in Gorontalo Province.

Data Analysis Method

Researchers used panel data regression, time series, and cross-section in this study. There are several advantages to using panel data. First, panel data combines two data, namely time series, with a cross-section capable of providing more data to produce greater freedom. Second, combining information from time series and cross-section data can overcome problems that arise when it is a problem of eliminating variables (omitted variables) (Widarjono, 2013). The panel data regression model in this study is as follows:

$$TP_{it} = \beta_0 + \beta_1 PP_{it} + \beta_2 PE_{it} + \beta_3 Inflasi_{it} + \beta_4 IPM_{it} + \varepsilon_{it} \quad \text{.....(1)}$$

Where; TP = Unemployment Rate; β_1, β_2, β_3, β_4 = Regression Coefficient; PP = Population Growth; PE = Economic Growth; Inflation = Inflation; HDI = human development index; ε = Error terms; I = Regency/City in Gorontalo Province; t = Period 2011-2020

Panel Data Analysis Model

The model in panel data regression consists of 3 models, which are as follows (Widarjono, 2013):

1. **Standard Effect Model (CEM) or Pool Least Square (PLS)**
   The CEM or PLS model is the most straightforward panel data model approach because it only combines time-series and cross-section data. In this model, neither time nor individual dimensions are into account. This method can use the Ordinary Least Square (OLS) approach or the least-squares technique to estimate the panel data model.
2. **Fixed Effect Model (FEM)**
   This model assumes that differences between individuals can be accommodated from differences in intercepts; This is a regression approach with a dummy variable as the independent variable. FEM calculates the possibility of researchers facing the problem of omitted variables that can bring changes to the intercept time series or cross-section.
3. **Random Effect Model (REM)**
   This approach can make it possible to see differences between individuals or time through errors. In REM, the error is assumed to be random and estimated using the Generalized Least Square (GLS) method. REM considers that errors may be correlated throughout the time series and cross-section.
   The panel models in this approach are:

$$Y_{it} = \beta_{it} + \beta_2 X_{3it} + \cdots + \beta_n X_{nit} + \mu_{it} \quad \text{.....(2)}$$

Each model must be tested in selecting the model used in this study. The fixed effects method with the pooled least square method can be tested with the F-Test, while The Hausman specification test is carried out by calculating the fixed-effect method and the random effect method.

RESULT AND DISCUSSION

Selection of Panel Data Analysis Model

There are three types of panel data analysis: combined effects model (CEM), fixed effects model (FEM), and random effects model (REM). We can use multiple Chow and Hausman tests to choose one of the three best models above. The Chow test selects between the CEM and FEM models, and the Hausman test determines between the FEM and REM models.

Table 1. Justification of Research Model

Justification of Model	Probality	criteria	Decision
Uji Chow	Cross Section F= 0.0000***	ρ<α	FEM
Uji Hausman	Cross Section Random=0.0006***	ρ<α	FEM

*Note: Confidence level = ***)1%, **)5%, *)10%, NS) Not Significant*

With the level of confidence that has been determined in this study, it is known that the value. The Chow test is 0.0000, and the value - from the Hausman test is 0.0006, which is smaller than the 1% significance value, so H0 is rejected; This means that the model selected based on the two tests (Chow and Hausman tests) above is the Fixed Effects Model.

Estimated Results

The estimation results are intended to determine the relationship between two variables: the dependent variable (Unemployment Rate) and the independent variable (Population Growth, Economic Growth, Inflation, and Human Development Index). The first step in the data processing process is to convert the data into logs. In addition to providing a better estimate of the relationship between variables, changing the logarithmic data can reduce the estimated residual (residual) generated by the regression equation.

Table 2. Results of Data Panel Regression

Dependent Variable:
LOG(TP?)
Method: Pooled EGLS (Cross-section SUR)
Sample: 2011-2020
Cross-sections included: 6
Total pool (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.90204	3.074347	3.871405	0.0003***
LOG(PP?)	-0.169424	0.327449	-0.517405	0.6072 TS
LOG(PE?)	-0.020176	0.008979	-2.246959	0.0291**
LOG(INFLASI?)	-0.045169	0.037424	-1.206956	0.2331 TS
LOG(IPM?)	-2.382533	0.693044	-3.437780	0.0012***
Fixed Effects (Cross)				
_KAB_BOALEMO—C	-0.295858			
_KAB_BONBOL—C	0.224342			
_KAB_GORONTALO--C	-0.042124			
_KAB_GORUT—C	-0.122313			
_KAB_POHUWATO—C	-0.517545			
_KOTA_GORONTALO--C	0.753498			
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.928670	Mean dependent var		14.62880
Adjusted R-squared	0.915831	SD dependent var		10.49351
SE of regression	1.065097	Sum squared resid		56.72162
F-statistic	72.33005	Durbin-Watson stat		2.079744
Prob(F-statistic)	0.0000***			

Notes: ***)1%, **)5%, *)10%, NS) Not Significant

Regression Equation:

LOG(TPit) = 11.90204 - 0.169424 LOG(PPit) - 0.020176 LOG(PEit) – 0.045169LOG(INFLASIit) -2.382533LOG(IPMit)+εit……..(3)

Round Calculation Results:

LOG(TPit) = 11.90 - 0.17 LOG(PPit) - 0.02 LOG(PEit) - 0.05 LOG(INFLASIit) -2.38 LOG(IPMit)+εit……(4)

The estimation results in the form of statements are as follows:

1. Open Unemployment Rate (TP) in the research model, if the independent variables (PP, PE, Inflation, HDI) are considered constant, the available unemployment rate is 11.90%.
2. Population Growth (PP) is negatively correlated with the Open Unemployment Rate with a coefficient value of 0.17; This means that every 1 percent increase in population can reduce unemployment by 0.17 percent.
3. Economic Growth (PE) is negatively correlated with the Open Unemployment Rate with a coefficient value of 0.02. An increase in the economic growth of 1 percent can reduce unemployment by 0.02 percent.
4. Inflation is negatively correlated with the Open Unemployment Rate with

a coefficient value of 0.05; an increase in inflation of 1 percent can reduce unemployment by 0.05 percent.

5. The Human Development Index (HDI) negatively correlates with the Open Unemployment Rate with a coefficient value of 2.38. A 1 percent increase in the Human Development Index can reduce unemployment by 2.38 percent.

If the magnitude of the Intercept value (β0) is different for each Regency/City, it is in the Fixed Effect Cross table below:

Table 3. Intercept Cross-Section

Fixed Effects (Cross)	Intercept
_KAB_POHUWATO—C	-0.517545
_KAB_BOALEMO—C	-0.295858
_KAB_GORUT—C	-0.122313
_KAB_GORONTALO—C	-0.042124
_KAB_BONBOL—C	0.224342
_KOTA_GORONTALO—C	0.753498

Note: Minus = Below Average and Positive = Above Average

It is known that four regencies have intercept values below the average, including; Pohuwato, Boalemo, Gorut, and Gorontalo regencies; This means that if it is assumed that the independent variable is constant, it will reduce the unemployment variable by 0.52 percent for Pohuwato Regency and so on. Meanwhile, the regions with coefficients above the average consist of Bone Bolango Regency and Gorontalo City; assuming constant independent variables, unemployment in Bone Bolango Regency will increase by 0.22 percent, which happens in Gorontalo City.

Statistical Hypothesis Testing

Hypothesis testing is used to statistically test the validity of a statement and decide whether to accept or reject the hypothesis that has been formed. Thus, this research only answers the questions by stating the rejection or acceptance of the hypothesis.

The goodness of Fit (R-Squared) Test

The Goodness of Fit test, better known as the coefficient of determination, aims to measure the model's ability to calculate the dependent variable. The coefficient of determination ranges between zero (0) and not more than one (1). A low R-squared value means that the independent variable cannot explain the dependent variable. In multiple linear regression with more than two dependent variables, it would be better to use the adjusted R-square value (Adj R-square) because adding the dependent variable or more than two variables will affect the R-square value. The value of Adj R-square is 0.915831; if it is a percentage, it means 91.58%; This means that 91.58% of changes in the unemployment rate variable by the dependent variable (Population Growth, Economic Growth, Inflation, and

Human Development Index). At the same time, the remaining 8.42% by other variables outside the observation model.

Simultaneous Significance Test (F-Statistics)

The f-statistical test aims to show whether all independent variables in the model have the same or simultaneous effect on the dependent variable. The method used in this test compares it with the F-statistical Prob value in the statistical application output table. If the p-value < α, then reject H0 and accept H1. The probability of F-statistics is 0.0000, and the level of significance (α) = 10%, 5%, and 1%. Thus, a decision can be made that all independent variables simultaneously affect the dependent variable; This is because the value of the p-value of the probability F-statistic is smaller than the 1 percent significance level.

Individual Significance Test (t-Statistic)

The t-statistical test determines how much influence each independent variable has on the dependent variable. In the F-statistical test, we only need to compare the F-statistical Prob and Significance level; the same in the t-statistical test. We only compare each independent variable's probability with the significance level. This study has three levels of significance in this study, namely 10 percent, 5 percent, and 1 percent.

1. **Population Growth to Unemployment Rate**
   It that the p-value for the population growth variable is 0.6072. If the p-value is compared with a significance level of 10%, the p-value obtained is more significant than 10%, so Ho is accepted. So, the decision is that population growth is insignificant to the unemployment rate from 2011-to 2020.
2. **Economic Growth Against Unemployment Rate**
   It that the p-value for the Economic Growth variable is 0.0291. If the p-value is compared with a significance level of 5%, the p-value is still smaller than 5%, so Ho is rejected. Thus, Economic Growth is significant to the Unemployment Rate from 2011 to 2020.
3. **Inflation against the Unemployment Rate**
   It that the p-value for the inflation variable is 0.2331. If the p-value is compared with a significance level of 10%, the p-value obtained is more significant than 10%, so Ho is accepted. So, the decision is that inflation is not substantial to the unemployment rate from 2011 to 2020.
4. **Human Development Index to Unemployment Rate**
   It that the p-value for the Human Development Index variable is 0.0012. Suppose the p-value is compared with a significance level of 1%. In that case, the p-value obtained is still smaller than 1%, so Ho is rejected; thus, the Human Development Index significantly affects the Unemployment Rate in the 2011-2020 period.

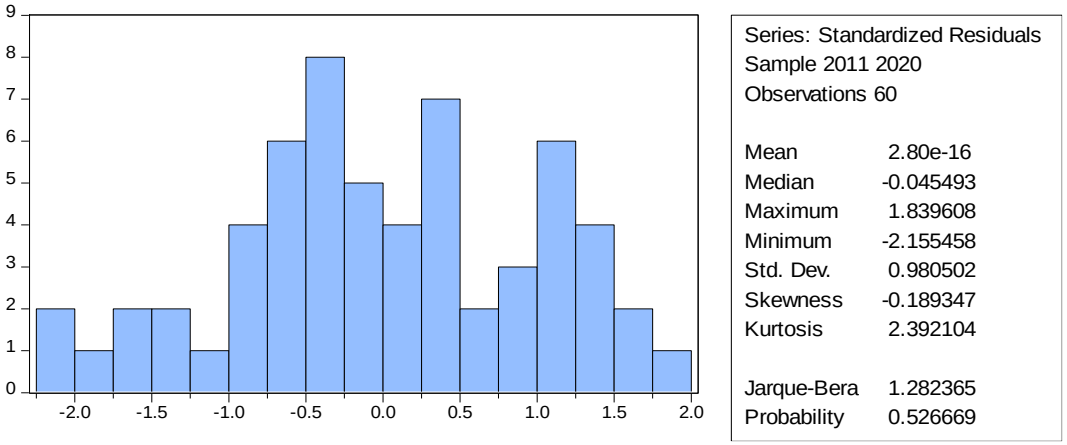
Classic Assumption Validity Test

The regression model for forecasting has minimum prediction error and is a good model. Or better known as BLUE (Best Linear Unbiased Estimation), which assumes that the estimation results do not have biased

parameters. The classical assumption tests are Normality-test, Multicollinearity-test, Autocorrelation-test, and Heteroscedasticity-test.

Normality-test

Figure 1: Normality of data



Notes: ***)1%, **)5%, *)10%, NS) Not Significant

The results of the normality test above using Eviews 9 provide normal residual test results with a Jarque-Berra value of 1.282365 with a probability value of 0.526669 (0.526669 > 0.1), so the decision was taken that the data were normally distributed

Multicollinearity-test

The correlation test between independent variables is called the multicollinearity test, which helps check whether there is a correlation between independent variables in the regression model. There is a linear relationship between the variables when there is a correlation. A good regression model should not have interactions between independent variables. Therefore, the multicollinearity test by observing the calculated value of the correlation coefficient between the independent variables. The selected model must be free from multicollinearity; that is, if the correlation coefficient value is lower than 0.80, it can be that there is no correlation between the independent variables. The results of the calculation are as follows:

Table 4. Multicollinearity

Independen	LOG(PG)	LOG(EG)	LOG(INFLATION)	LOG(HDM)
LOG(PP)	1.0000			
LOG(PE)	-0.0427	1.0000		
LOG(INFLASI)	-0.0744	0.6040	1.0000	
LOG(IPM)	0.2012	-0.1832	-0.4434	1.0000

The table above shows the correlation between the Independent Variables with each other. The correlations between independent variables include: 1) Variable Population Growth with economic growth does not occur multicollinearity (value 0.0427 less than 0.80); 2) Variable Population Growth

with economic growth does not occur multicollinearity (value 0.0427 less than 0.80); 3) Population Growth with Inflation also does not occur multicollinearity (value 0.0744 less than 0.80); 4) For population growth with the Human Development Index, there is no multicollinearity (value of 0.2012 is less than 0.80); 5) Economic growth and inflation do not occur multicollinearity (value 0.6040 less than 0.80); 6) Economic growth and human development index do not occur multicollinearity (matter 0.1832 less than 0.80); 7) Inflation and Human Development Index There is no multicollinearity (-0.4434 less than 0.80) so that the decision that can is that all independent variables have no correlation with each other and do not contain symptoms of multicollinearity.

Autocorrelation-test

The autocorrelation test aims to determine whether there is a correlation in the linear regression model between the confounding error in period t and the confounding error in period t-1 (previous). The method determines whether there is autocorrelation in the Durbin Watson test. It is known that the number of observation data or the value of N = 60. The number of confounding variables or the value of K = 5. DW table, the value of Du = 1.73 and the value of DL = 1.44, while the value of DW in the model estimation above is 2.079744; This means the regression estimation of the previous model does not have an autocorrelation problem because the value of DW(2.079744) > DU(1.73).

Heteroscedasticity-test

Test of non-uniform variance (heteroscedasticity) occurs when the error or residual of the observed model does not have a constant variance from other observations. The heteroscedasticity test in this study uses the Glejser method, Where the value of the residuals from the equation results is regressed with the dependent variable in the model. This observation is free from heteroscedasticity problems if the -value is greater than the significant level.

Table 4. Heteroscedasticity

Dependent Variable: RESABS
Method: Panel Least Squares
Sample: 2011, 2020
Cross-sections included: 6
Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.555796	1.274580	2.005206	0.0499
LOG(PP)	-0.115517	0.050634	-2.281409	0.0264
LOG(PE)	-0.008160	0.015320	-0.532658	0.5964
LOG(INFLASI)	0.113400	0.054031	2.098788	0.0404
LOG(IPM)	-0.522478	0.302364	-1.727976	0.0896

Notes: ***)1%, **)5%, *)10%, NS) Not Significant

Testing of non-uniform variance (Heteroscedasticity) using the glejser test. In the non-uniform dispersion test, the Sig (α) value is more significant

than 0.01; heteroscedasticity dispersion symptoms are considered invalid. The data does not show a non-uniform variance, meaning that the regression equation in the observation does not occur in heteroscedasticity

DISCUSSION

Population Growth to Unemployment Rate

The estimation results state that the Population Growth variable has a negative and insignificant effect on the Unemployment Rate. Population growth does not necessarily reduce the unemployment rate in the Regency/City of Gorontalo Province; A.O Hirschman (Hirschman, 1964) argues that population growth can stimulate the economy. One of the most severe problems facing developing regions is the development of the working population. An increase in job opportunities has not been accompanied; This will eventually lead to unemployment (Oktarima & Nazipawati, 2021).

The analysis results show that the unemployment rate will decrease along with the increase in population. Strong population growth does not necessarily mean increased unemployment. From a qualitative perspective, population growth has a positive effect if its growth can encourage economic development. An increase in population can increase the number of workers, enabling the manufacturing sector to increase economic activity. On the other hand, population growth can negatively impact if population growth can hinder economic development. Population growth cannot increase production and reduce the need to consume manufactured products.

Therefore, population growth must by reducing the number of unproductive workers. However, this population growth must balance good talent and sufficient job opportunities to beat a large population with abundant employment opportunities (Ardiansa et al., 2021). This study's results align with (Oktarima & Nazipawati, 2021) research that population growth is negatively and insignificantly correlated with unemployment. The reason is that population growth does not necessarily increase the unemployment problem because the unemployment rate by a disturbing variable, namely the wage level.

Economic Growth Against Unemployment Rate

Economic growth has a negative and significant effect on unemployment so every increase in Economic Growth can reduce the unemployment rate in the Regency/City of Gorontalo Province; Regional economic growth of Gorontalo Province in recent years has accommodated new workers and reduced unemployment. An increase usually follows economic growth in the production of goods and services. And when that happens, the need for labor to produce more goods and services will also increase. In other words, the regional economic growth of Gorontalo Province is related to job creation.

Economic growth as a creator of new jobs occurs because more significant economic growth is contributed by consumption. With this increase in consumption, many companies increase the number of workers to

meet the consumption needs of the community. This is reasonable considering that economic growth is driven more by non-tradable sectors (sectors that cannot be traded, such as the financial and service sectors) than real ones. This study's results align with those reported by research by Adiyadnya (Adiyadnya & Swara, 2021). They argue that economic growth negatively impacts open unemployment because the region's high economic growth affects the industry's possibility to increase production.

Inflation against the Unemployment Rate

From the estimation results, the inflation variable has a negative and insignificant effect on unemployment. Every increase in inflation does not necessarily reduce the unemployment rate in the Regency/City of Gorontalo Province. Inflation is an indication that a country's economy is deteriorating; this study on regencies/cities in Gorontalo Province. High inflation can encourage the central bank to raise interest rates, which leads to deflation or negative growth in the real sector. Another effect is the increase in the number of unemployed, and inflation and the unemployment rate can be used to measure the good or bad of a country's economy.

That a temporary and sporadic increase in the number of goods causes inflation; when there is an increase in prices, it will affect people's purchasing power and impact expensive production, thus having an impact on reducing labor. The Phillips curve can describe the relationship between inflation and short-run unemployment rates. Phillips uses this curve to examine the UK's relationship between unemployment and inflation. Phillips found a negative relationship between the inflation rate and the unemployment rate so that higher inflation can reduce unemployment (Yehosua et al., 2019).

This can happen by meeting this demand due to rising prices (inflation); producers can increase their production capacity by adding labor (labor is the only input that can increase production). Due to the increase in demand for labor, inflation will reduce unemployment. This study's results align with research conducted by Shafira (Shafira et al., 2021). They found that inflation hurt unemployment; This increases the number of workers in many companies to produce more goods because prices continue to rise (inflation).

Human Development Index to Unemployment Rate

From the estimation results, the Human Development Index variable negatively and significantly affects unemployment. With the increase in the Human Development Index, the unemployment rate in the state of Gorontalo Regency/City can decrease. Unemployment does not reflect the level of community welfare, while the ultimate goal of development is to create prosperity and prosperity for the community. High unemployment in an area hinders the achievement of economic development goals. People's incomes decrease, so people's purchasing power declines, and even education and health, which are the basis for improving human quality, are not realized (Si'lang et al., 2019).

According to BPS, the human development index indicators consist of Health, Education, and per capita income; This means that one-third of the human development index indicator is the income per capita. Okun's law cited by Badu (Badu et al., 2020) research that unemployment will increase if per capita income decreases (indirectly also consumption decreases). The new growth theory (New Growth Theory) emphasizes the critical role of government in Human Capital (Investment in human resources) and human resource development to increase human productivity. Investment in education improves the quality of human resources, leading to increased knowledge and skills. The higher the human quality, the more knowledge and experience, and the better the workforce's productivity. The more workers employed, the lower the unemployment rate because hiring more productive workers will improve a company's performance.

Keynes explained that the unemployment problem to weak aggregate demand. Aggregate demand is all the demand for goods and services in an economy. When the supply of labor increases, wages fall, and wage cuts cause unprofitable losses because wage cuts show people's purchasing power for an item. People's purchasing power, one of the indicators of low HDI, forces companies to reduce production and absorb excess labor so that there is rarely a balance between supply and demand, and unemployment occurs. This study's results align with research conducted by Mahroji (Mahroji & Nurkhasanah, 2019), explaining that the development index has a negative and significant effect on the open unemployment rate; This is because the law of supply and demand will increase the number of workers.

CONCLUSION

Based on the results and discussions discussed in the previous chapter regarding the influence of socio-economic indicators on unemployment in Gorontalo Province, the researchers draw the following conclusions: 1) Population growth has a negative and insignificant effect on unemployment in Gorontalo Province. Which means. Any increase in population growth may not necessarily reduce the unemployment rate in the Regency/City of Gorontalo Province; 2) Economic growth has a negative and significant effect on the movement in Gorontalo Province. Which means. Any increase in economic growth can reduce the figures in the Regency/City of Gorontalo province; 3) Inflation has a negative and insignificant effect on movements in Gorontalo Province. Which means. Any increase in inflation does not reduce the inflation rate in the Regency/City of Gorontalo Province.

REFERENCES

Adiyadnya, M. S. P., & Swara, N. N. A. A. (2021). Pengaruh Tingkat Investasi , Nilai Tukar Rupiah dan Pertumbuhan Ekonomi Terhadap Tingkat Pengangguran. *Widya Manajemen*, *3*(2), 107–116. https://doi.org/10.32795/widyamanajemen.v3i2.1286

Ardiansa, Saleh, M., & Awaluddin, M. (2021). Pengaruh Pertumbuhan Ekonomi Dan Pertumbuhan Penduduk Serta Inflasi Terhadap Pengangguran Dan Kemiskinan Di Kalimantan Timur. *NUSANTARA :*

Jurnal Ilmu Pengetahuan Sosial, *8*(8), 2576–2596. https://doi.org/http://dx.doi.org/10.31604/jips.v8i8.2021.2576-2596

Ayuningtyas, N. N. (2019). Pengaruh Inflasi Dan Pertumbuhan Penduduk Terhadap Tingkat Pengangguran Di Kota Samarinda. *Jurnal Ilmu Ekonomi Mulawarman*, *3*(4), 1–12. http://journal.feb.unmul.ac.id/index.php/JIEM/article/view/3790

Badan Pusat Statistik 2016-2020. (2020). *Tingkat Pengangguran Terbuka (TPT) Menurut Kabupaten/Kota (Persen)*.

Badu, R. R., Canon, S., & Akib, F. H. Y. (2020). The Impact of Economic Growth and Unemployment Rate on Poverty in Sulawesi. *Jambura Equilibrium Journal*, *2*(1), 25–33. https://doi.org/10.37479/jej.v2i1.4499

Choirur, R., Suratno, S., & Kuswanto, K. (2021). Effect of Education and Unemployment on Poverty in Jambi Province. *Jurnal Ekonomi Pembangunan*, *19*(01), 31–43. https://doi.org/10.22219/jep.v19i01.16817

Hirschman, A. O. (1964). *The Strategy of Economic Development*. Yale University Press. https://books.google.co.id/books?id=foREAAAAYAAJ

Hjazeen, H., Seraj, M., & Ozdeser, H. (2021). The nexus between economic growth and unemployment in Jordan. *Future Business Journal*, *7*(1), 42. https://doi.org/10.1186/s43093-021-00088-3

Idris, M. (2021). Effect of Unemployment and Inflation on Economic Growth in Nigeria. *Global Journal of Applied, Management and Social Sciences (GOJAMSS)*, *21*(January), 254–266.

Johan, K., Marwoto, P. A. N. B., & Pratiwi, D. (2016). Analisis Pengaruh Pertumbuhan Ekonomi, Inflasi Dan Investasi Terhadap Pengangguran Di Indonesia. *Jurnal Progresif Manajemen Bisnis (JPMB)*, *13*(2), 20–32.

Mahroji, D., & Nurkhasanah, I. (2019). Pengaruh Indeks Pembangunan Manusia Terhadap Tingkat Pengangguran Di Provinsi Banten. *Jurnal Ekonomi-Qu*, *9*(1), 51–72. https://doi.org/10.35448/jequ.v9i1.5436

Oktarima, T., & Nazipawati, N. (2021). Analisis Pengaruh Pertumbuhan Ekonomi Dan Pertumbuhan Penduduk Terhadap Tingkat Pengangguran Terbuka Di Kabupaten/Kota Provinsi Sumatera Selatan. *Ekonomika*, *14*(2), 175–194.

Parulian, T., & Mahendra, A. (2021). The Effect of the Fed, Exchange, and Economic Growth on the IHSG with Inflation as a Moderating Variable. *International Journal of Research and Review*, *8*(7), 251–257. https://doi.org/10.52403/ijrr.20210735

Prawira, S. (2018). Pengaruh Pertumbuhan Ekonomi, Upah Minimum Provinsi, Dan Tingkat Pendidikan Terhadap Pengangguran Terbuka Di Indonesia. *Jurnal Ecogen*, *1*(4), 162. https://doi.org/10.24036/jmpe.v1i1.4735

Putong, I. (2013). *Economics Pengantar Mikro Dan Makro* (Edisi 5). Mitra Wacana Media.

Rungsrisawat, S., Jermsittiparsert, K., & Thanetpaksapong, S. (2019). Do the crime and the socio-economic strain affect the economic growth? A case of an emerging ASEAN economy. *Journal of Security and Sustainability*

Issues, *9*(2), 391–407. https://doi.org/10.9770/jssi.2019.9.2(3)

Rustariyuni, S. D., Aswitari, L. P., Suryawan Ratha, P. W., & Nina, G. A. (2018). Open Unemployment in The Province of Bali. *MIMBAR : Jurnal Sosial Dan Pembangunan*, *34*(2), 473–485. https://doi.org/10.29313/mimbar.v34i2.3921

Sari, F. W. A. W., & Bangun, R. H. (2019). Pengaruh Sosial Ekonomi Terhadap Pola Penurunan Pengangguran Terbuka Di Provinsi Sumatera Utara Tahun 2003-2017. *NUSANTARA: Jurnal Ilmu Pengetahuan Sosial*, *6*(1), 31–40.

Shafira, V. A., Kumenaung, A. G., & Niode, A. O. (2021). Analisis Pengaruh Ump, Pertumbuhan Ekonomi Dan Inflasi Terhadap Tingkat Pengangguranterbuka Di Kota Manado. *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi*, *9*(1), 1411–1419.

Si'lang, I. L. S., Hasid, Z., & Priyagus, P. (2019). Analisis faktor-faktor yang berpengaruh terhadap indeks pembangunan manusia. *Jurnal Manajemen*, *11*(2), 159–169.

Sumaryoto, S., Herawati, M., & Hapsari, A. T. (2020). Analysis of Changes in the Unemployment Rate due to the Human Development Index in Indonesia (Case Study 2010-2019). *Journal of Economics and Business*, *3*(4), 1538–1548. https://doi.org/10.31014/aior.1992.03.04.301

Widarjono, A. (2013). Ekonometrika. In *UPP STIM YKPN. Yogyakarta*.

Yehosua, A, S., Rotinsulu, O, T., Niode, D., & O, A. (2019). Pengaruh Inflasi Dan Suku Bunga Terhadap Tingkat Pengangguran Di Kota Manado. *Jurnal Berkala Ilmiah Efisiensi*, *19*(01), 20–31.