Open Unemployment Rate in West Java in 2018 to 2021

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Abstract. The open unemployment charge is a trademark of the fulfillment of a financial improvement program aimed at enhancing the monetary quality of an area or us of a's people. West Java Province has a quite excessive percent of unemployed human beings. This research targets to investigate the impact of Gross Regional Domestic Product (GRDP), the Human Development Index (HDI), the exertions force participation rate, and the quantity of poor people at the open unemployment rate in West Java in 2018 to 2021. This is a quantitative study that employs panel facts regression analysis with facts acquired from the statistical center cross-segment of 27 provincial districts and towns in West Java, in addition to time collection statistics from 2018 to 2021. The outcomes of the analysis for this version suggest that the variables of Human Development Index and number of terrible populaces have a considerable impact on the open unemployment rate. At the same time as the variables of gross regional home product and exertions pressure participation rate do now not have a substantial impact on the open unemployment rate.

Keywords: Open Unemployment Rate · GRDP · HDI · Labor Force Participation Rate (LFPR) · Number of Poor Population

1 Introduction

The process of change is an Economic that results in improvements that are made and planned consciously in order to raise people's living standards. Furthermore, the goal of economic development is to improve the economic quality of a region or country's people by equalizing income, increasing employment opportunities, or lowering unemployment by increasing employment opportunities to attract workers or human resources. The unemployment rate is therefore one of the metrics used to evaluate the effectiveness of economic development. We can see from the unemployment rate that the level of community welfare and income distribution and unemployment occur as a result of a high rate of change in the labor force that is not matched by labor application due to low growth in field creation [1].

The open idleness rate is the most commonly used indicator for calculating the unemployment rate. In Indonesia, the open unemployment rate in West Java Province

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is considered relatively high. According to the Deputy for Statistics, Central Bureau of Statistics, Margo Yuwono, said that the factors causing West Java's has high level of open unemployment are influenced by conditions in the industrial sector. West Java has a large number of industries that attract residents from outside West Java to move to the province. This industrial migration reduces job opportunities. In addition, the trigger factor for open unemployment is access to the use of development programs that urban communities enjoy and accept more development. As a result, rural communities do not benefit from information technology, sources of capital, or market information. Unequal development and income cause open unemployment [2].

West Java's open unemployment rate was 8.23% in 2018, but fell to 8.04% in 2019. Because of the COVID-19 pandemic in Indonesia, including West Java Province, the open unemployment rate increased to 10.46% in 2020, affecting the economy and workers in West Java Province.

A few elements that have an effect on the unemployment rate, including GRDP (Gross Regional Domestic Product), figuring out local monetary development involves calculating the GRDP, which is a macroeconomic indicator. GRDP is the total cost of goods and offerings within the territory of the nation inside a certain time frame, typically inside one year. In calculating GRDP the usage of fees on a consistent basis, the cost of products and offerings is calculated the use of the charge of the year used as a reference, or the base 12 months for charges. In reality, GRDP significantly affects the quantity of employees. Since the increased of GRDP will increase the overall added value of all local economic sectors, the unemployment rate in the region will decline as it grows [3]. The GRDP increased in 2018 to 2019 but decreased in 2020. West Java is considered as the Indonesia's highest GRDP in 2021.

Furthermore, the Human Development Index (HDI) influences the unemployment rate. The HDI is a regional indicator that shows how advanced a region's human development is. The relationship between the human development index and unemployment is intended to increase the employment and thus reduce the low level of unemployment. The Human Development Index, which measures the quality of life, includes living a long and healthy life, acquiring and developing knowledge, and increasing access to a better life [4].

As for the labor force, that affects unemployment. The labor force refers to the population who have worked or are still looking for work. One of the indicators in the calculation of the workforce is the percentage of the Labor Force Participation Rate (LFPR). In LFPR, it is like this: if the labor force participation rate is high, the better; but if the number of labor force participation rates increases, the opposite is not good. In other words, it causes unemployment because of the possibility of limited employment opportunities [5].

The occurrence of an unemployment rate can lead to poverty. The poor are the result of the community's inability to meet the level of economic welfare. The cause of poverty is the high unemployment rate. Theoretically, it means that it can be said that people are poor if the community is not unemployed and has income, so the necessities of life are met [6]. During the period 2018 to 2021, the number of poor people in West Java Province had increased. And this results in an increasing number of poor people, which will slow down the process of economic development.

2 Literature Review

2.1 Open Unemployment Rate

Unemployment is described because the wide variety of people inside the exertions pressure who have unequal employment opportunities, in preference to the open unemployment rate, that is a circumstance wherein a person does no longer have a job and is looking for work, is unemployed and getting ready to begin a commercial enterprise, or is unemployed and inside the level of looking for work, including those who have been hired but have not yet begun working [7]. Economic problems occurred because when the unemployment rate is low, a country or region throws away goods or services that can actually be produced by labor [8]. According to [9] stated in research related to the spatial analysis of the unemployment rate in the province of West Java, it was stated that the analysis that affected the unemployment rate was LFPR, Municipal Minimum Wage, and the percentage of industrial sector workers. Economic growth and HDI have no significant effect on unemployment, which shows uneven economic development and job creation that is not in line with human resources.

2.2 Gross Regional Domestic Product

The Central Bureau of Statistics defines GDP as the full cost of final items and offerings produced with the aid of all monetary gadgets in a given country or the whole price of delivered cost produced via all enterprise units. GRDP at cutting-edge expenses describes the brought cost of products and services calculated each year at modern expenses, while GRDP at consistent prices describes the delivered value of products and offerings calculated at a particular time. The GRDP is a key indicator used to determine a region's role and economic potential in a given period, and it is used to describe overall economic growth from year to year on a consistent basis [10]. According to [11], open unemployment and its determinants in Indonesia from 2013 to 2017 in his research on the population had a significant negative effect, which means that as the population decreased, so the unemployment fell. Meanwhile, GRDP and education had a positive impact on the decline. In addition, according to [12], education, the minimum wage and gross regional domestic product all have a negative and significant effect on the open unemployment rate, whereas population growth has a positive and significant effect.

2.3 Human Development Index

The Human Development Index is a metric used to evaluate the effectiveness of raising people's living standards. According to Okun's law, increased productivity growth due to an increase in the rate of human development promotes economic growth and is expected to increase employment opportunities and labor demand, allowing more people to enter the labor market and, as a result, lower the unemployment rate [13]. According to [14], stating that the effects of investment, minimum wage, and HDI partially reduce open unemployment in western countries means that investment and minimum wage have a positive effect. Because of high investment, the number of unemployed will be high. This is because investors are interested in capital-intensive sectors because they want to invest

in industries with high profits where the absorption of labor meets the requirements for special employment opportunities and minimum wages. High wage levels do not always have a positive effect because not all companies can pay certain wages. While the HDI has a negative impact, rising levels will reduce unemployment because quality of human resources is required in the workplace.

2.4 Labor Force Participation Rate

Estimates the percentage of the employed population aged 15 or over, known as the labor force participation rate (LFPR). The LFPR also shows the proportion of the working-age population that is economically active in a given country or region. The relationship between LFPR and the unemployment rate is that when the labor force is greater than the growth of employment opportunities, unemployment results, and a measure commonly used to identify differences in economic participation is the age of the working-age population [15]. According to [16], he finds that labor force (LFPR) and minimum wage have a significant negative effect on the unemployment rate in the home improvement industry, while education level has a significant positive effect on economic growth, but has no effect on the unemployment rate or No impact, suggesting they don't exist in the DIY realm.

2.5 Number of Poor Population

People are people whose monthly expenditure per person is below the poverty line. In addition, poverty is a state in which a person's fundamental requirements for clothing, food, housing, healthcare, and education are not being satisfied. Basic needs or the difficulty of education and work [2]. According to [17], His research on the use of the autoregressive distributed lag (ARDL) approach is a regression model that uses a variable value to model the percentage of the poor to the unemployment rate and explains the present value or past value of the independent variable as one of the explanatory factors. According to the findings of his study, a positive percentage of the poor are in both short-term and long-term relationships, while a negative percentage are in relationships with a one-year lag. The open unemployment rate in Lampung is then negatively correlated over the long run. The effect of changes in the percentage of poor people with a lag of two in the short term, in the form of a negative and long-term relationship, has a positive but not significant relationship with the open unemployment rate in the province of Lampung. In addition, [18] also states that the effect of the minimum wage on workers and the number of poor people on the unemployment rate in Surabaya is significant, while the number of poor people has no significant effect on the unemployment rate in Surabaya.

3 Research Methodology

This study employs the dependent open unemployment rate (UNEMP), as well as the independent gross regional domestic product (GRDP), human development index (HDI), labor force participation rate (LFPR), and number of poor people in the province of West

Java. This study uses panel data regression consisting of time series data for 2018–2021, while the cross section uses 27 districts and cities in West Java, and the data was obtained from the Central Statistics Agency. According to [19], panel data is a hybrid of time series and cross-sectional information. Panel data estimation stages include CEM, FEM, and REM regression; selecting the best model using the Chow test and the Hausman test for impact validity tests, such as t-tests, F-tests, and R-squared; and calculating the R-squared. As a result, the following research's econometric model is:

$$\text{LogUNEMP}_{it} = \beta_0 + \beta_1 \text{LogGRDP}_{it} + \beta_2 \text{HDI}_{it} + \beta_3 \text{LFPR}_{it} + \beta_4 \text{LogPOOR}_{it} + \varepsilon_{it}$$

UNEMP = Open Unemployment Rate (%)
GRDP = Gross Regional Domestic Product (Rupiah)
HDI = Human Development Index (%)
LFPR = Labor Force Participation Rate (%)
POOR = Number of Poor Population (in Thousand people)
Log = Logarithm-Based Operators *e*
β_0 = Constant
$\beta_1 \ldots \beta_4$ = Coefficient
ε = Standard Error
i = Number of observation to i
t = Number of year to t

4 Result and Discussion

4.1 Analysis Findings

This study combines a four-year time series with a cross-section of 27 districts and cities in West Java. The open unemployment rate is examined in this study. GRDP, HDI, LFPR, and the number of poor people is the variables used. This study employs three econometric models to estimate panel data regression analysis: The Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM). The panel data regression analysis yielded the following results:

According to Table 1, the panel has stages for selecting the best model for the chow test in the data model. According to the Chow test results, H_0 is the model selected by the Comment Effect Model (CEM), while H_A is the model selected by the Fixed Effect Model (FEM). Table 2 shows that the probability of F is (0.0000) less than the probability of alpha (0.05), indicating that H_0 is rejected. As a result, the models chosen are the Fixed Effect Model (FEM). The Chow test results are shown in Table 2:

The Hausmen hypothesis test results show that H_0 is a model for which the random effect model (REM) was selected, whereas H_A is the fixed effect model (FEM). Table 3 shows that the probability of Chi^2 is (0.0000) less than alpha (0.05), indicating that H_0 is rejected. Thus, it may be said that the model selected is the fixed effect model (FEM). The Chow and Hausmen tests can be used to conclude that the chosen model is a fixed-effects model based on the results of these tests (FEM).

In the validity test, this test uses research using the F test (simultaneous test), the t test (partial test), and the R^2 coefficient of determination. In Table 1, the F test (simultaneous

Table 1. CEM, FEM, REM Regression Results

Variables	CEM	FEM	REM
C	3,254383 (0,0000)	−0,761913 (0,8852)	−0,323965 (0,6660)
Log (GRDP)	0,045206 (0,3054)	−1,004376 (0,2614)	−0,125176 (0,0410)
HDI	0,010976 (0,1452)	0,144595 (0,0612)	0,046748 (0,0000)
LFPR	−0,041085 (0,0000)	−0,010613 (0,1635)	−0,016788 (0,0037)
Log (POOR)	0,060456 (0,2659)	0,799668 (0,0000)	0,323735 (0,0000)
R-Square	0,452016	0,883414	0,254809
Prob (F-statistic)	0,000000	0,000000	0,000004

Source: Data processed by EViews 10

Table 2. Chow Test

Effect Test	Prob
Cross Section F	0,0000
Cross Section Chi-square	0,0000

Source: Data processed by EViews 10

Table 3. Hausmen Test

Effect Test	Prob
Cross Section Random	0,0000

Source: Data processed Eviews 10

test) on the *Fixed Effect Model* (FEM) states the probability value (F-statistic) of 0.0000 is less than alpha (0.05), which means it is rejected. And the conclusion is that the gross regional domestic product (GRDP), the human development index (HDI), the labor force participation rate (LFPR), and the number of poor populations together affect the open unemployment rate. And based on the criteria for the partial t-test, if the probability is greater than alpha, then H_0 is accepted, but if the probability is less than alpha, then H_0 is rejected. The findings of the t-test (partial test) on the fixed effect model (FEM) in the independent variables in Table 4 are as follows:

In Table 4, the results of the partial t test state that the gross regional domestic product variable has a probability value of 0.2614 and that its value is greater than 0.10, so it can be concluded that it has no significant effect on the open unemployment rate.

Table 4. Practical Significance Test Result (Statistical t-Test).

Variable	Prob t	Criteria	Conclusion
Log (GRDP)	0,2614	≥0,10	No Significant Effect
HDI	0,0612	≤0,10	Significant At α = 10%
LFPR	0,1635	≥0,10	No Significant Effect
Log (POOR)	0,0000	≤0,05	Significant At α = 5%

Source: Data processed EViews 10

The human development index variable has a probability coefficient value of 0.0612, which is less than 0.10. So, it can be concluded that it has a significant effect on the open unemployment rate; the Labor Force Participation Rate variable states that the probability value is 0.1635. And the value is greater than 0.10. It can therefore be concluded that it does not have a significant effect on the open unemployment rate, with a number probability value of 0.0000 for the unfavorable demographic variable, which is less than 0.05. From this it can be concluded that the number of bad coefficients has a significant effect on the open unemployment rate.

The coefficient of determination (R2) indicates the proportion of the variance of the dependent variable that can be explained by the independent variable. Based on Table 1, the R-squared for the Fixed Effect Model (FEM) regression findings is 0.883414, or 88.35%. This represents the change in the open unemployment rate for each district or city in West Java between 2018 and 2021 as a result of variations in the GRDP, the HDI, the LFPR, and the number of poor populations. The remaining 11.65%, meanwhile, results from modifications outside the model.

4.2 Discussion

The estimation from the Fixed Effect Model (FEM) produced the following results:

Table 5 shows that the GRDP variable has a negative but not significant effect on the open unemployment rate. The GRDP variable grew by 1%, and this rupiah will result in a −1.004376 reduction in the open unemployment rate. The findings of this study corroborate [20]'s claim that the GRDP has a negative and not insignificant effect, and they also support [21]'s claim that the GRDP has a negative and insignificant influence on the open unemployment rate. The discovery [22] that the GRDP variables do not significantly affect the open unemployment rate further lends validity to this research. The Okun Law, which studies the relationship between the unemployment rate and the amount of GDP in a region or country, is the foundation for the relationship between GDP and the jobless rate.

The HDI variable has a positive and significant effect on the open unemployment rate, which means that if the HDI increases by 1%, the open unemployment rate will

Table 5. Fixed Effect Model Estimation Results

$\text{Log UNEMP}_{it} = -0{,}761913 - 1{,}004376\text{LogGRDP}_{it} + 0{,}144595\text{HDI}_{it} - 0{,}010613\text{LFPR}_{it} + 0{,}799668\text{LogPOOR}_{it}$			
P-Value Log (GRDP)	HDI	LFPR	Log (POOR)
0,2614	0,0612***	0,1635	0,0000**
$R^2 = 0{,}883414$;	F-Statistic = 19,44852	Prob (F-Statistic) = 0,00000	DW-stat = 2,059730

Source: Data processed EViews 10
Description: * significant at = 0.01; ** significant at = 0.05; *** significant at = 0.10. in brackets are statistical empirical probabilities

increase by 0.144595. This study confirms [23] that HDI has a positive and significant effect. Research is also supported [24], based on an analysis of the HDI variable having a positive and significant effect on the open unemployment rate. In addition to this research, there is also support for this research, namely research conducted [25], namely the HDI research's positive and significant effect. The increase in HDI is a factor in the success of education, the economy, and health. Of the three factors, those in the economy itself are the availability of wide employment opportunities, adequate infrastructure, and government policies.

The LFPR variable has a negative and insignificant impact on the open unemployment rate. Therefore, if it rises by 1%, the open unemployment rate will also rise by − 0.010613. This study is in line with [26], which found that the labor force participation rate variable has a negative and insignificant effect. Meanwhile, according to [27], the labor force participation rate has a negative and insignificant effect. In addition, this study is also supported by [28]'s research, which shows that the Labor Force Participation Rate variable has no significant effect on the open unemployment rate. The indicator of a decrease in the labor force participation rate is due to a lack of employment and a lack of skills in work, and if the total labor force participation rate increases, the open unemployment rate also increases.

The number of poor population variable has a positive and significant effect when there is an open unemployment rate, meaning that if the number of poor populations increases by 1 thousand people, the open unemployment rate increases by 0.799668. This study is in line with [17], who found that the variable of the poor population has a positive and significant effect on the open unemployment rate. In addition, this study is also in line with [29]'s research on the variable number of poor people having a positive and significant effect on the open unemployment rate. This research is also supported [30], namely his research on the relationship between unemployment and poverty having a positive and significant effect. There are several indicators that cause people to fall into poverty, including development in the social and economic fields such as health services, food, housing, consumption, transportation, services, industry, trade, and consumption [31]. The relationship between poverty and open unemployment is positive. A decline in the open unemployment rate will occur in tandem with a reduction in the number of the poor.

5 Conclusion

According to the results of panel data regression analysis with the independent variable fixed effect model (FEM) model, the Human Development Index (HDI) and the number of poor people have a significant effect on the open unemployment rate, while the gross regional domestic product (GRDP) and labor force participation rate have no effect. The suggestion for scientific research is to reduce unemployment by creating jobs and job training programs such as entrepreneurship based on areas of interest in order to increase economic income growth, which will have a positive impact on economic development. Testing the analysis of the open unemployment rate by adding independent variables or changing the appropriate variables to make better and more accurate conclusions in the future compared to current research.

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References

1. S. Wibisono, J. Sidania, and R. P. S, "Determinan Tingkat Pengangguran Terbuka di Provinsi Banten Tahun 2008–2013," *e-Journal Ekon. Bisnis dan Akunt.*, vol. 4, no. 2, p. 169, 2017, doi: https://doi.org/10.19184/ejeba.v4i2.5792.
2. N. Latiffa, D. Rotinsulu, and R. Tumilaar, "Pengaruh Pertumbuhan Ekonomi Dan Indeks Pembangunan Manusia Terhadap Tingkat Pengangguran Terbuka Dan Dampaknya Pada Jumlah Penduduk Miskin Di Kota Manado," *J. Berk. Ilm. Efisiensi*, vol. 17, no. 02, pp. 106–117, 2017.
3. R. R. M. Wijaya, "Pengaruh Upah Minimum , PDRB , dan Populasi Penduduk Terhadap Tingkat Pengangguran Terbuka (Studi Kasus Gerbangkertasusila Tahun 2007–2012)," *J. Ilm.*, 2014.
4. F. E. Pratiwi and I. Zain, "Klasifikasi Pengangguran," *J. Sains dan Seni ITS*, vol. 3, no. 1, pp. D54–D59, 2014, [Online]. Available: http://www.ejurnal.its.ac.id/index.php/sains_seni/article/view/6129
5. R. A. Ryan Z, N. Istiyani, and A. Hanim, "Analisis Pengaruh Pertumbuhan Ekonomi, Jumlah Angkatan Kerja dan Upah Minimum Regional Terhadap Pengangguran Terdidik di Jawa Timur," *e-Journal Ekon. Bisnis dan Akunt.*, vol. 4, no. 2, p. 187, 2017, doi: https://doi.org/10.19184/ejeba.v4i2.5826.
6. E. Susanto, E. Rochaida, and Y. Ulfah, "Pengaruh inflasi dan pendidikan terhadap pengangguran dan kemiskinan," vol. 13, no. 1, pp. 19–27, 2017.
7. M. Kusumaningsih, E. Setyowati, and H. R. Ridhwan, "Study on the Impact of Economic Growth, Unemployment, and Education on South Kalimantan Province's Poverty Level from 2014 to 2020," *Proc. Int. Conf. Econ. Bus. Stud. (ICOEBS 2022)*, vol. 655, no. Icoebs, pp. 170–177, 2022, doi: https://doi.org/10.2991/aebmr.k.220602.022.
8. R. Laksamana, "Pengaruh PDRB terhadap Pengangguran di Kabupaten/kota Kalimatan Barat," pp. 111–134, 2016.

9. W. G. Septiyanto and E. Tusianti, "Analisis Spasial Tingkat Pengangguran Terbuka di Provinsi Jawa Barat," *J. Ekon. Indones.*, vol. 9, no. 2, pp. 119–131, 2020, doi: https://doi.org/10.52813/jei.v9i2.40.
10. W. A. Amrullah, N. Istiyani, F. Muslihatinningsih, J. I. Ekonomi, and S. Pembangunan, "Analisis Determinan Tingkat Pengangguran Terbuka di Pulau Jawa Tahun 2007–2016 (Determinant Analysis of Open Unemployment Rate In Java Island Year," *e-Journal Ekon. Bisnis dan Akunt.*, vol. VI (I), no. 1, pp. 43–49, 2019.
11. D. Salsabella, W. Hidayat, and H. Kusuma, "Pengangguran Terbuka Dan Determinannya Di Indonesia Tahun 2013-2017," *J. Ilmu Ekon. JIE*, vol. 4, no. 2, pp. 208–221, 2020, doi: https://doi.org/10.22219/jie.v4i2.11485.
12. F. R. Suhadi and E. Setyowati, "Analisis Pengaruh Jumlah Penduduk , Pendidikan , Upah Minimum , Dan PDRB," vol. 10, no. 2, pp. 879–888, 2022.
13. D. Mahroji and I. Nurkhasanah, "Pengaruh Indeks Pembangunan Manusia Terhadap Tingkat Pengangguran Di Provinsi Banten," *J. Ekon.*, vol. 9, no. 1, 2019, doi: https://doi.org/10.35448/jequ.v9i1.5436.
14. R. Helvira and E. P. Rizki, "Pengaruh Investasi, Upah Minimum Dan Ipm Terhadap Tingkat Pengangguran Terbuka Di Provinsi Kalimantan Barat," *E-Jurnal IAIN Pontianak*, vol. 1, no. 1, pp. 53–62, 2020.
15. M. R. Mirah, P. Kindangen, and I. P. F. Rorong, "32815–68547–1-Sm," *Pembang. Ekon. dan Keuang. Drh.*, vol. 21, no. 1, pp. 85–100, 2020, [Online]. Available: https://ejournal-unipra.com/index.php/IMKP/article/view/116
16. K. Khotimah, "Pengaruh Tingkat Pendidikan, Pertumbuhan Ekonomi, Angkatan Kerja, dan Upah Minimum Terhadap Tingkat Pengangguran Di DIY Tahun 2009–2015," pp. 599–609, 2015.
17. M. D. Fenski, Nusyirwan, and A. Sutrisno, "Penerapan Metode Autoregressive Distributed Lag (ARDL) Dalam Memodelkan Persentase Penduduk Miskin Terhadap Tingkat Pengangguran Terbuka Di Provinsi Lampung Periode 2011–2017," *Pros. Semin. Nas. Metod. Kuantitatif Ii 2018*, pp. 95–104, 2018.
18. N. W. Sa'adah and P. S. Ardyan, "Analisis Pengaruh Upah Minimum Pekerja dan Jumlah Penduduk Miskin Terhadap Tingkat Pengangguran di Surabaya," vol. 1, no. September, 2016.
19. D. Gujarati, *Econemetrics by Example*, 2nd ed. Palgrave, 2014.
20. S. Nujum, Z. Rahman, and H. R. Purnama, "Analisi Tingkat Pendidikan dan Produk Domestik Regional Bruto terhadap Tingkat Pengangguran di Kota Makassar," vol. 3, no. 1, pp. 52–60, 2020.
21. M. Shun Hajji and N. SBM, "Analisis PDRB, Inflasi, Upah Minimum Provinsi, dan Angka Melek Huruf Terhadap Tingkat Pengangguran Terbuka Di Provinsi Jawa Tengah Tahun 1990–2011," *Diponegoro J. Econ.*, vol. 3, no. 2, pp. 36–34, 2013.
22. R. Widiyati, "Analisis faktor-faktor yang mempengaruhi tingkat pengangguran terbuka di kota-kota provinsi jawa tengah," Universitas Muhammadiyah Surakarta, 2016.
23. H. Widayanti, "Analisis Fakftor-faktor yang mempengaruhi Tingkat Pengangguran Terbuka (TPT) di kabupaten/kota jawa barat tahun 2012–2019," Universitas Islam Indonesia, 2021.
24. Sisnita and N. Prawoto, "Analisis Faktor-Faktor Yang Mempengaruhi Tingkat Pengangguran Di Provinsi Lampung (Periode 2009–2015)," *J. Econ. Res. Soc. Sci.*, vol. 1, pp. 1–7, 2017.
25. M. Nurcholis, "Analisis Pengaruh Pertumbuhan Ekonomi, Upah Minimum Dan Indeks Pembangunan Manusia Terhadap Tingkat Pengangguran Di Provinsi Jawa Timur Tahun 2008–2014," *J. Ekon. Pembang.*, vol. 12, no. 1, p. 48, 2014, doi: https://doi.org/10.22219/jep.v12i1.3654.
26. T. Manurung, "Analisis Pengaruh Pertumbuhan Ekonomi, Inflasi, dan Tingkat Partisipasi Angkatan Kerja (TPAK) Terhadap Pengangguran di Sumatera Utara Periode 2009–2020 (Studi Kasus: Kota Medan, Pematang Siantar, Padang Sidempuan dan Kota Sibolga)," 2021, [Online]. Available: https://repositori.usu.ac.id/handle/123456789/46767

27. Azhar, R. Syahputra, S. Syahnaztia, U. I. Bandung, and C. Author, "Faktor Penentu Tingkat Pengangguran Usia Produktif Awal Pada Masa Pandemi Covid-19 Di Kecamatan Sukajadi," vol. 26, no. 1, pp. 50–62, 2022.
28. R. C. Rambe and P. H. Prihanto, "Analisis faktor-faktor yang mempengaruhi pengangguran terbuka di Provinsi Jambi," vol. 8, no. 1, pp. 54–67, 2019.
29. Ikhtiar Zusen and E. Setyowati, "Faktor-Faktor yang Mempengaruhi Tingkat Pengangguran Terbuka di EKS Karesidenan Pati Periode 2017–2020," vol. 5, pp. 1–12, 2022.
30. O. E. Maku, "Unemployment , poverty and economic growth in Nigeria," vol. 35, no. 1, 2019, doi: https://doi.org/10.22367/jem.2019.35.01.
31. S. N. Syamsudin, S., Cahya, B. T., & Dewi, "*Pengaruh kinerja keuangan terhadap pertumbuhan ekonomi, pengangguran dan kemiskinan*," *J. Indones. Membangun*, vol. 17, no. 1, pp. 15–27, 2015.