

Analysis of the Effect of District / City Minimum Wage and Labor Force Participation Rate on the Open Unemployment Rate of North Sumatra Province in 2021-2022

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Abstract. Open unemployment is still a major economic problem in North Sumatra Province. This study aims to analyze the effect of Regency / City Minimum Wage, Labor Force Participation Rate, and Gross Regional Domestic Product on the Open Unemployment Rate in North Sumatra Province in 2021-2022. The type of data used is secondary data obtained from the North Sumatra Province Statistics Agency. The results showed that there was a simultaneous significant influence between the three independent variables, namely district / city minimum wage, labor force participation rate, and gross regional domestic product on the dependent variable, namely the open unemployment rate $Y = 0.164X_1 - 0.694X_2 - 0.032Z + 0.424$. The simultaneous effect is 57.6% and the remaining 42.4% is explained by other variables not included in the study.

Keyword: Open Unemployment Rate, District/City Minimum Wage, Labor Force Participation Rate, Gross Regional Domestic Product, Path Analysis

Abstrak. Pengangguran terbuka masih menjadi masalah ekonomi yang utama di Provinsi Sumatera Utara. Penelitian ini bertujuan untuk menganalisis pengaruh Upah Minimum Kabupaten/Kota, Tingkat Partisipasi Angkatan Kerja, dan Produk Domestik Regional Bruto terhadap Tingkat Pengangguran Terbuka di Provinsi Sumatera Utara pada Tahun 2021-2022. Jenis data yang digunakan yaitu data sekunder yang diperoleh dari Badan Pusat Statistik Provinsi Sumatera Utara. Penelitian ini menggunakan metode analisis jalur dan Software SPSS Version 26. Hasil penelitian menunjukkan bahwa terdapat pengaruh yang signifikan secara simultan antara ketiga variabel independen yaitu upah minimum kabupaten/kota, tingkat partisipasi angkatan kerja, dan produk domestik regional bruto terhadap variabel dependen yaitu tingkat pengangguran terbuka $Y = 0.164X_1 - 0.694X_2 - 0.032Z + 0.424$. Pengaruh simultan sebesar 57,6% dan sisanya 42,4% dijelaskan oleh variabel lain yang tidak terdapat dalam penelitian.

Kata Kunci: Tingkat Pengangguran Terbuka, Upah Minimum Kabupaten/Kota, Tingkat Partisipasi Angkatan Kerja, Produk Domestik Regional Bruto, Analisis Jalur

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1 Introduction

The rise in open unemployment is anticipated to give rise to several challenges, one of which is the escalation in poverty rates due to the lack of money and inability to fulfil basic necessities among affected individuals. Furthermore, the presence of individuals who are openly jobless will also have an impact on the populace's capacity to fulfil their basic necessities [1-4].

Table 1. Open Unemployment Rate of Sumatra Island 2021-2022

Province	2021	2022
Aceh	6.30	6.17
Sumatera Utara	6.33	6.16
Sumatera Selatan	4.98	4.63
Sumatera Barat	6.52	6.28
Bengkulu	3.65	3.59
Riau	4.42	4.37
Kepulauan Riau	9.91	8.23
Jambi	4.76	4.7
Lampung	4.69	4.52
Bangka Belitung	5.03	4.77

Open Unemployment in North Sumatra Province is one of the complex and important issues to discuss because it gets associated with several indicators. From table 1, it can be seen that the open unemployment rate in Sumatra Island tends to decrease. This shows that the government has made good efforts in dealing with the problem of open unemployment. North Sumatra Province is ranked third with the largest open unemployment rate on Sumatra Island, which is 6.33% in 2021 and decreased by 0.17% to 6.16% in 2022. This value is still much higher than the average open unemployment rate of Sumatra Island, which is 5.66% in 2021 and 5.34% in 2022. The high rate of open unemployment in North Sumatra Province is also caused by several indicators such as the wage rate, labor force, and economic growth rate. A high open unemployment rate has a major influence on economic growth, so active efforts or strategies are needed to achieve a low open unemployment rate. In pursuing this, it is necessary to know the significant factors that can affect the open unemployment rate. Previous research conducted by [5-6] examined the open unemployment rate with factors that affect it, namely population growth, wages, inflation, and economic growth. On the basis of this study, the researchers conducted another study on other factors that contribute to the open unemployment rate, namely the minimum wage, labor force participation rate, and gross regional domestic product using path analysis. Path analysis or also known as path analysis, is a statistical analysis technique developed from multiple regression analysis [7]. Regression analysis only predicts the estimator Y by knowing the influence of the independent variable on the dependent variable, but does not distinguish whether the variable has

a direct or indirect influence, this is not explained in regression analysis [8]. Therefore, path analysis is required as an extension of regression analysis. Path analysis models can be used to look for indirect influences between variables through intermediate variables. By using this analysis researchers can obtain more accurate, sharp and more detailed analysis results [9-10]. Based on the description above, the author tries to analyze the causal relationship caused by several sectoral variables to the Open Unemployment Rate (TPT) in North Sumatra Province using path analysis. The purpose of the study was to determine the magnitude of the influence of these factors and Gross Regional Domestic Product in influencing t level unemployment in Sumatera Utara Province. It will be examined whether there is a relationship between the minimum wage of the District, the labor force participation rate, and gross regional domestic product simultaneously / partially on the open unemployment rate and whether there is a direct / indirect influence district minimum wage, labor force participation rate, and gross regional domestic product to open unemployment rate [11-13]. The results of this study are expected to provide information to the government about the factors that contribute to open unemployment so that it can be used as a means of evaluation to take further policies to solve the problem of open unemployment rate in North Sumatra Province [14].

2 Research Methods

The independent factors in this research consist of the minimum wage of the District/City (X_1) and the partition rate of the labour force (X_2), while the dependent variable is the open unemployment rate (Y) [15-17]. Additionally, the intervening variable is the gross regional domestic product (Z). The used methodologies include literature review, data gathering techniques, and data analysis procedures. During the course of this study, relevant literature including books and scholarly journals pertaining to the subject of investigation were consulted and thoroughly examined in order to gather pertinent information [18-21]. The data used in this study is derived from secondary sources, namely the BPS North Sumatra Province. The obtained data is then organised, sorted, and displayed numerically in order to provide a comprehensive representation of the dataset. In the process of data analysis, several stages are typically undertaken. These include the collection of research data, identification of exogenous and endogenous variables, selection of appropriate path diagram models, formulation of structural equations, computation of correlation matrices, calculation of path coefficients, and determination of the extent of direct and indirect influences [22-24].

3 Research Results and Discussion

3.1 Observation Data and Variables

The data to be processed in this study is survey data from the Central Bureau of Statistics of North Sumatra Province. The secondary data used as variables in this study are data on the District/City

Minimum Wage (UMK), Labor Force Participation Rate (TPAK), Gross Regional Domestic Product (GRDP), and Open Unemployment Rate (TPT) for 2021-2022 [25].

3.2 Classical Assumption Test

According to Ghozali (2014), the classical assumption tests carried out are normality tests, multicollinearity tests, autocorrelation tests, and heteroscedasticity tests.

3.2.1 Normality Test

Based on the normality test with Kolmogorov-Smirnov, the value of Asymp Sig was obtained of 0.200 where the value is greater than 0.05. Therefore, it can be concluded that the research data used are normally distributed. This can also be seen in the P-Plot graph, where the points are close to the diagonal line, it can be concluded that the research data meets the assumption of normality.

3.2.2 Multicollinearity Test

From the results of the multicollinearity test, the tolerance value of the UMK (X1) and TPAK (X2) variables was obtained, and the GRDP (Z) was more than 0.10 and the VIF value was also not more than 10. It can be concluded that between independent variables there are no symptoms of multicollinearity.

3.2.3 Autocorrelation Test

From the results of Durbin Watson Test, Durbin Watson Test () value is 1.206 with a value of 1.697 and a value of 1.507. The value so that autocorrelation occurs. In accordance with the rules of autocorrelation, if there is a positive autocorrelation when Durbin Watson test is carried out, $dduuld < dl$ it can be continued with the Run Test. From the results of autocorrelation testing using Run Test, Asymp. Sig. of 0.137 which means greater than 0.05. So, it can be concluded that in the regression model of this study, there is no autocorrelation.

3.2.4 Heteroscedasticity Test

Based on the glejser test table, the significance value of UMK (X1) is 0.79 and TPAK (X2) is 0.167, and GRDP (Z) is 0.887 against residual (ABS_RES) > 0.05 . The results showed that there was no heteroscedasticity in this study.

3.3 Correlation Coefficient Test

From the results of the correlation test, the significance value between variables is $0.000 < 0.05$ which means that there is a significant relationship between variables. The value of the correlation coefficient of MSE (X 1) to GRDP (Z), MSE (X1) to TPT (Y), and GRDP (Z) to TPT (Y) is

positive which means that there is a positive relationship. The value of the correlation coefficient between MSE (X 1) to TPAK (X 2), TPAK (X 2) to GRDP (Z), and TPAK (X 2) to TPT (Y) is negative so that it can be concluded that a negative relationship occurs.

3.4 Test the hypothesis

This analysis aims to determine the magnitude of the direct and indirect influence of MSE (X 1) and TPAK (X2) variables on TPT (Y) through PRDB (Z).

3.4.1 Structure Analysis 1

The coefficient of determination for substructural equation 1 is 0.379, which means that the influence of UMK (X1) and TPAK (X2) variables simultaneously on GDP (X1) is 37.9%. Other variables that are not contained in the study (errors) that affect gross regional domestic product, namely error (e) = $\sqrt{1 - R^2_{zx_2x_1}} = \sqrt{(1 - 0,379)^2} = 0,621$ or as large as 62.1%. Earned value $F_{count} = 20,798 > F_{table} (0,05;2;63) = 3.14$ and $p\text{-value } 0.000 < 0,05$ which means that the variables UMK (X1) and TPAK (X2) together have an effectsignifikan against GDP (Z). The effect of MSE (X 1) on GDP (Z) is 0.337 which means that every time there is an increase in one-rupiah MSE (X 1), the value of GDP (Z) will increase by 0.337. Also obtained the value of the calculated t value = 2.965 > $t_{table} (0.025;63) = 1.998$ with a significance value of 0.004 < 0.05 which means there is a positive and significant influence. The effect of TPAK (X 2) on GDP (Z) is -0.387 which means that every one percent increase in TPAK (X2), the value of GDP (Z) will decrease by 0.387. Also obtained the value of the calculated t value = $|-3.405| > t_{table} (0.05;63) = 1.998$ with a significance value of 0.004 < 0.05 which means there is a negative and significant influence. Thus, the path diagram of substructure 1 is obtained as follows.

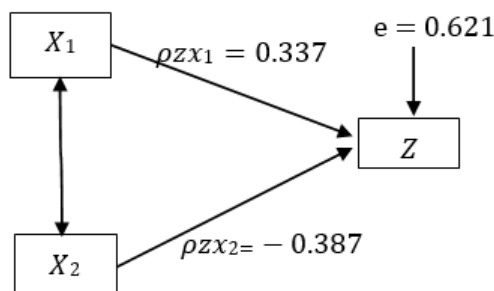


Figure 1. Substructure 1

The equation of substructure 1 is as follows:

$$Z = 0.337X_1 - 0.387X_2 + 0.621.$$

3.4.2 Structure Analysis 2

The coefficient of determination for substructural equation 1 is 0.576, which means that the influence of MSE (X1), TPAK (X2) and GRDP (Z) variables simultaneously on 57.6%. Another variable that was not contained in the study (error) that contributed to the gross regional domestic product, which was an error(e) = $\sqrt{1 - R^2_{zx_2x_1}} = \sqrt{(1 - 0,576)^2} = 0,424$ or 42.4%. Obtained value $F_{count} = 30.798 > F_{table} (0.05;3;62) = 2.753$ and $p\text{-value} = 0.000 < 0.05$ which means that the variables UMK (X 1), TPAK (X 2), and GRDP (Z) together have a significant effect on TPT (Y). The effect of MSE (X 1) on TPT (Y) is 0.164 which means that every time there is an increase of one-rupiah MSE (X 1), the value of TPT (Y) will increase by 0.164. Also obtained the value of $t_{calculate}$ value = $1.633 < t_{table}(0.025;62)=1.999$ with a significance value of $0.108 > 0.05$ which means there is no significant effect. The effect of TPAK (X2) on TPT (Y) is -0.694 which means that every one percent increase in TPAK (X2), the value of TPT (Y) will decrease by 0.694. Also obtained $t_{calculate}$ value = $|-6.790| > t_{table}(0.025;62)= 1.999$ with a significance value of $0.000 < 0.05$ which means there is a negative and significant influence. The effect of GDP (Z) on TPT (Y) is -0.032 which means that every one percent increase in GDP (Z), the value of TPT (Y) will decrease by 0.032. Also obtained is the value of t count = $|-0.3120| < t_{table}(0.025;62)=1.999$ with a significance value of $0.756 < 0.05$ which means there is no significant effect.

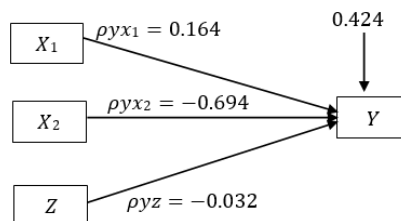


Figure 2. Substructure path diagram 2

The equation of substructure 2 is as follows:

$$Y = 0.164X_1 - 0.694X_2 - 0.032Z + 0.424.$$

Thus, a causal model of analysis of substructure paths 1 and 2 is obtained as follows:

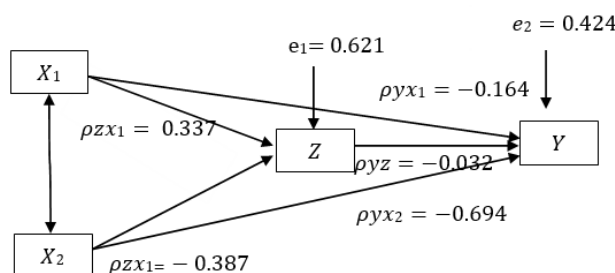


Figure 3. Combination model path diagram

4 Conclusion

Based on the results of the analysis, a path model is obtained $Y = 0,164X_1 - 0,694X_2 - 0,032Z + 0,42$. It can be concluded that there is an effect of the district/city minimum wage, labor force participation rate, and gross regional domestic product on the open unemployment rate, which is 57.6% and 42.4% is influenced by other variables. In addition, there is a direct influence between the district/city minimum wage, labor force participation rate, gross regional domestic product simultaneously on the open unemployment rate. There was no partially significant effect between the district/city minimum wage on the open unemployment rate, there was a partially significant effect between the labor force participation rate and the open unemployment rate, and there was no partially significant effect between gross regional domestic product and the open unemployment rate. MSEs and TPAK directly affect 16.4% and 69.4% respectively. MSEs and TPAK indirectly affect TPT through GRDP by 1.08% and 1.24%. The total influence of MSEs on TPT through GRDP is 5.6%. The total influence of TPAK on TPT through GRDP is 57%.

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