DETERMINANTS OF UNEMPLOYMENT IN SUMATRA

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ABSTRACT

One of the most important issues in the economy of a region/country is the problem of unemployment. Unemployment causes many problems in the economy and society. The problem of unemployment cannot be avoided by anyone, but to overcome the problem is to identify the causes that affect the unemployment rate itself. This research raises several issues that can affect the level of unemployment in the mainland of Sumatra. The issues raised are Population, Regional Original Income, Education, Regional Minimum Wage, and Human Development Index. The analysis technique used is a combination of cross-section and time series data. The results of the study show that the Fixed Effect Model (FEM) is the most appropriate panel data regression model looking at the factors that affect unemployment. The research findings state that partially all variables have a significant effect. Another thing that was found was that education, regional minimum wages, and local revenue at t-1 could reduce unemployment rates in eight provinces in Sumatra. The magnitude of the variation of all independent variables that can explain their effect on unemployment is 78,48% and the remaining 21,52% is influenced by other variables, not in the study.

Keywords: Unemployment, Total Population, Regional Original Income, Education, Regional Minimum Wage, Human Development Index, previous year's Local Original Income, and Human Development Index of the previous year.

A. INTRODUCTION

The Open Unemployment Rate (TPT) is a measurement indicator measuring the level of labor supply from the total labor force that cannot be absorbed by existing jobs. One of them is the high rate of population growth. The increase in population is not proportional to the number of existing employment opportunities. This means that every year the workforce is also increasing. Indonesia is a country with the 4th largest population in the world after China, India, and the United States. Uneven development and population density in each region are one of the causes of a large number of unemployed people in Indonesia. The following is the average data on unemployment in Indonesia and Sumatra, which can be seen in Table 1.2 below:

Table 1.2 Unemployment in Indonesia and Sumatra 2016 – 2020

Province	Year/Growth (%)								Average (%)	
	2016	2017	%	2018	%	2019	%	2020	%		
Aceh	7,6	6,6	-13,2	6,4	-3,2	6,20	-2,5	6,6	6,3	6,7	-3,2
Sumatera Utara	5,8	5,6	-4,1	5,6	-0,7	5,41	-2,7	6,9	27,7	5,9	5,1
Sumatera Barat	5,1	5,6	9,6	5,6	-0,5	5,33	-4,0	6,9	29,1	5,7	8,6
Riau	7,4	6,2	-16,3	6,2	-0,3	5,97	-3,7	6,3	5,9	6,4	-3,6
Jambi	4,0	3,9	-3,3	3,9	-0,3	4,19	8,5	5,1	22,4	4,2	6,9
Sumatera Selatan	4,3	4,4	1,9	4,2	-3,6	4,48	5,9	5,5	23,0	4,6	6,8
Bengkulu	3,3	3,7	13,3	3,5	-6,1	3,39	-3,4	4,1	20,1	3,6	6,0
Lampung	4,6	4,3	-6,3	4,1	-6,2	4,03	-0,7	4,7	15,9	4,3	0,7
Sumatera	**5,27**	**5,04**	-4,4	**4,9**	-2,4	**4,88**	-0,8	**5,8**	18,2	5,2	2,6
National	**5,6**	**5,5**	-2,0	**5,3**	-3,6	**5,23**	-1,3	**7,1**	35,2	5,7	7,1

Source: BPS

To encourage the movement of economic activity so that the availability of jobs increases and unemployment decreases, the Regional Government seeks to increase economic growth. Another effort to increase/encourage the movement of economic activity is through increasing Local Own Revenue through increasing Natural Resources and Human Resources. High regional original income means that the regional government has been able to manage its regional autonomy well. The high Regional Original Income of an area can reduce the level of regional dependence on the General Allocation Fund (DAU) or Special Allocation Fund (DAK) provided by the central government, according to Law 33 of 2004.

To improve the capacity of Human Resources formally by increasing the skills of Human Resources so that they have a highly competitive value so that the unemployment rate can decrease. One of the efforts to improve the quality of Human Resources is through a low level of education so that the knowledge and

skills possessed are not those required by the labor market. Higher education theoretically correlates with competence.

Another problem faced by unemployment in developing countries is low wage rates and low labor productivity associated with minimum wage levels. Minimum wage rates are determined sectorally and regionally. According to conventional economic theory, to increase labor productivity and reduce the consequences of unemployment, wages can prevent workers in a monopsony market from exploiting labor, especially those that are low-skilled. Setting low wages can describe the level of welfare. According to (Kuncoro, 2004) we can measure the level of one's welfare by the Human Development Index (IPM), which is a breakthrough in assessing human development. The Human Development Index (IPM) is a measure of human development achievements based on several basic components of quality of life. (Feriyanto, 2018), (Himali, 2020), (Kupets, 2006), (Muin, 2020), (García & van Soest, 2017) and (Pitan & Adedeji, 2016), research on unemployment that the factors that influence vary and greatly depend on geographical area/country, local government policies, culture, and many others..

Based on the description above, it can be seen that unemployment is a big problem that must be faced by a country. This is related to the impact it has, including increasing crime, corruption, nepotism and partisanship, high dependence, drug abuse, and so on. This prompted the writer to conduct research on unemployment and the factors that influence it. What you want to research is:
1. What is the simultaneous and partial effect of the variables Population, PAD, Education, UMP, and HDI on Unemployment in 8 Provinces in Sumatra?
2. What is the Effect of Unemployment on Poverty in 8 Provinces in Sumatra?

B. LITERATURE REVIEW

Unemployment is part of the labor force who do not have a job, are looking for work, work less than two days a week, are trying to get a decent job, or are preparing to start their own business. The International Labor Organization (ILO) defines unemployment based on three important conditions that must be met simultaneously and these conditions are; not working, ready to work, and looking for work (ILO, 2019). Unemployment occurs due to an imbalance in the labor market, so unemployment becomes a national problem and (Imtiaz et al., 2020) is the responsibility of the Government, Regional Government, and the community. Among the causes of unemployment raised by (Zahroh, 2017) regarding The Effect of Gross Domestic Regional Product, Workforce, and Minimum Wage on the Unemployment Rate in Malang City. (Nugroho, 2014) regarding Job Opportunities, National Economic Growth, Minimum National Income/Wage, and the amount of poverty to Unemployment. in Indonesia for the period 1998 – 2014. (Prayitno & Kusumawardani, 2022) regarding the Open Unemployment Rate in the Province of East Java. (Kamran, Shujaat, Syed, & Ali, 2014), about population growth, interest rates, foreign direct investment, gross domestic product, and literacy rates in Pakistan affect the unemployment rate. (Mbekeni & Phiri, 2020) regarding income taxes, repo rates, economic growth, trade, investment, household debt, and savings are significant determinants of unemployment in the post-crisis South African economy. (Abugamea, 2018) regarding GDP, inflation, labor, external trade, and restrictions on the movement of

labor affect unemployment in Palestine. (Cristescu, 2017) regarding educational attainment, educational investment, Gross Domestic Product, and population have an effect on unemployment rates in Southern European countries.

The unemployment rate is the percentage of the ratio of the number of unemployed to the number of the labor force with the formula:

$$\text{Unemployment rate} = \frac{Number\ of\ job\ seekers}{Number\ of\ labor\ force} \times 100\%$$

The total population according to Thomas Robert Malthus will exceed the number of food supplies needed, where the population tends to grow geometrically. Uncontrolled population growth can cause various problems if the region's ability to create employment opportunities is limited. The problem that arises from the inability of the region to create employment opportunities is unemployment. The Effect of Population on the Work Force (Ali, Omar, & Yusuf, 2021), (Heliati, 2019), (Triyono, 2020), (Sadikova, Faisal, & Resatoglu, 2017), (Ali et al., 2021), (Siddiqa, 2021) stated that population growth contributed positively to an increase in unemployment. And (Imtiaz et al., 2020) Overpopulation significantly affects youth unemployment in Pakistan. Meanwhile (Oshora, Nguse, Fekete-Farkas, & Zeman, 2021) states that the relationship between the population level and unemployment are negatively correlated.

Local Own Revenue (LOR) comes from regional taxes, regional levies, results of regionally owned companies and the results of processing other separated regional assets, and other legitimate regional income. According to (Halim, 2012), LOR is revenue obtained by regions from sources within their territory which are collected based on regional regulations by applicable laws and regulations. Local Own Revenue is an important source of income for the region and is a measure of regional financial independence (www.bps.go.id). (Awwaliyah, Agriyanto, & Farida, 2019) states that the ability to extract Regional Original Income can affect the development of the region itself and this reflects the government's better performance. Studies on the influence of regional original income on unemployment were carried out by (Luh, Adriani, Nyoman, & Yasa, 2015) regarding the effect of regional original income on unemployment has a positive and significant effect in the Province of Bali. Meanwhile (Holik, 2020) researching The Impact of Regional Funds on Unemployment in West Java stated that the results had a negative and significant effect. This shows that Regional Original Income can reduce unemployment and this in this study is seen from the relationship between the previous year's Regional Original Income to unemployment.

Education is a pioneer in the future development of a country and education to overcome ignorance and socio-economic backwardness. Education is one way to increase the knowledge of the population because current development it requires the participation of an educated and skilled population to fully participate in development. According to RI Law Number 12 of 2012, it can be concluded that education is a human effort to develop the potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by himself, society, nation, and state. And to Sanjaya (2012), the

concept of education; is 1) planned, 2) a learning process, 3) developing self-potential, 4) having religious spiritual strength, self-control, personality, intelligence, noble character, and the necessary skills. The results of the study reveal research and unemployment including (Hindun, 2019) stating that the level of education has a significant and negative effect on the unemployment rate in Indonesia. Meanwhile (Dănăcică, Babucea, Paliu-Popa, Bușan, & Chirtoc, 2023) there is a significant short-term positive effect between higher education and the unemployment rate in Romania. (Turay, Yang, Tamba Issa, & Sheriff, 2021) Government spending on education does not affect the unemployment rate. (Snieska, Valodkiene, Daunoriene, & Draksaite, 2015) Education level has a direct influence on the unemployment rate.

The provincial Minimum Wage is the lowest monthly wage consisting of basic wages and regional allowances. Regulation of the Minister of Manpower and transmigration number 07 of 2013 concerning the minimum wage article 1 paragraph 1 explains that the minimum wage is the lowest monthly wage consisting of the basic wage including fixed allowances set by the governor as a safety net. The minimum wage is set by the governor by taking into account the recommendation from the provincial wage council and/or the regent/mayor. The effect of the Regional Minimum Wage on Unemployment was examined by (Mahroji & Nurkhasanah, 2019) who stated that the relationship between the Regional Minimum Wage had a significant and negative effect on Unemployment in Banten Province. (Filiasari & Setiawan, 2021) the provincial minimum wage has a real and significant effect on the open unemployment rate. (Nuzulaili, 2022) The Provincial Minimum Wage has a significant negative effect on Unemployment in Java Island in 2017-2020. Meanwhile (Hartanto, 2017) the minimum wage has no significant effect on unemployment in the districts and cities of East Java.

The Human Development Index according to UNDP (United Nations Development Programme) is a comparative measure of life expectancy, literacy, education, and standard of living for all countries around the world. HDI is used to classify whether a country is a developed, developing, or underdeveloped country and also to measure the effect of economic policies on the quality of human life. This index was developed in 1990 by India's Nobel laureate, Amartya Sen and Mahbub ul Haq, a Pakistani economist assisted by Gustav Ranis from Yale University and Lord Meghnad Desai from the London School of Economics. According to (Yolanda, 2017) the Human Development Index is a benchmark for achieving quality human development. The effect of the Human Development Index on unemployment has been carried out by (Sanitra, 2021) the human development index has a negative and significant effect on unemployment. Meanwhile (Huda & Yuliati, 2022), the human development index has a negative and insignificant effect on unemployment.

C. METHODOLOGY

The type of data used in this study is panel data. Panel data is: cross data (consisting of several variables) and simultaneously consisting of several times and (Basuki & Prawoto, 2017) is a combination of time series data and cross-section data. The panel data used in this study are time series data and cross-section data. The time series data in this study is 15 years, while the cross-section data is 8 provinces in West Sumatra. The research design in this study is research based on the level of explanation, namely explaining

whether or not there is influence between variables, and aims to explain the relationship between variables and test hypotheses regarding the relationship between these variables. The form of the relationship is the factors that affect unemployment which consists of population, local original income in year t, regional original income this year (t) in the previous year (t-1), education, regional minimum wage, human development index in this year (t) and the Human Development Index in the previous year (t-1) so that the following formula is obtained:

$$Y = f(X_{1t}, X_{2t}, X_{3t}, X_{4t}, X_{5t}, X_{2t-1}, X_{5t-1})$$

The formula above must be carried out several tests including:

Descriptive statistics according to (Ghozali, 2016) are used to provide descriptions or descriptions such as the average value (mean), standard deviation, variance, maximum, minimum, sum, range, kurtosis, and skewness of the research variables so that they are easier to understand.

Panel data regression is a regression technique that combines time series data and cross section data. If we have the number of individuals (n) and the period (t), then we will have a total of n times t. Three methods of estimating the regression model using panel data:
1) Common Effect Model (CEM) is an estimation model that combines all-time series data and cross-section data and uses the Ordinary Least Square (OLS) approach to estimate its parameters.
2) Fixed Effect Model (FEM) or Fixed Effect Model. To estimate panel data, this model uses a dummy variable to capture the intercept (constant) between individuals.
3) The Random Effect Model (REM) is an estimation model with a different constant (C) for each individual taking into account the presence of disturbances in time series data and cross-section data.

While the decision to choose the right/best model is carried out by conducting tests, namely: the Chow test (Common Effect Model vs Fixed Effect Model), Hausman test (Fixed Effect Model vs Random Effect Model), and Breusch Pagan – Lagrange Multiplier test (Common Effect Model vs Random) Effect Models). From the results of the selected model, the classical assumption test was carried out. This test is the initial stage used before multiple linear regression analysis (Ghozali & Ratmono, 2018). The classic assumption test consists of Normality Test, Multicollinearity Test, Heteroscedasticity Test, and Autocorrelation Test.

Multiple linear regression analysis is used to determine the direction and how much influence the independent variables have on the dependent variable. In addition, multiple linear regression analysis is used to test more than one independent variable on one dependent variable. The multiple linear regression equation is:

$$\hat{Y} = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \beta_5 X_{5t} + \beta_6 X_{2t-1} + \beta_7 X_{5t-1} + \varepsilon$$

Hypothesis testing is used to determine the effect of several independent variables both jointly (simultaneously) and individually (partially) on the dependent variable, namely: The F-test shows whether

all the independent or independent variables included in the model have an effect together on the dependent/bound variable and the t-test which shows how far the influence of one independent variable individually explains the variation of the dependent variable (Ghozali & Ratmono, 2018).

D. RESULTS

The island of Sumatra has an area of 443.065,8 km2 and stretches from the northwest to the southeast and crosses the equator, as if dividing the island of Sumatra into two parts, Sumatra in the northern hemisphere and Sumatra in the southern hemisphere. Geographically, Sumatra Island is located between 6^OLU-6^OLS and between 95^OBB 109^OBT. To the north, it is bordered by the Bay of Bengal, to the east by the Malacca Strait, to the south by the Sunda Strait, and to the west by the Indian Ocean.

Figure 1. Map of Sumatra Island

The island of Sumatra, which consists of several tribes and work farmers, fishermen and traders. The total population on the island of Sumatra at the end of 2021 is 58.6 million people with the largest composition being in North Sumatra Province, namely 14.5 million people. Meanwhile, the smallest population is in the Bangka Belitung Islands Province, which is 1.4 million people.

Descriptive Statistics:

Table 2: Descriptive Statistics:

	Y	X1	X2	X3	X4	X5
Mean	6,503417	6279,309	1,840,000,000	97,37517	1478802,	70,24608
Median	6,220000	5346,500	1,560,000,000	97,78000	1362500,	70,34000
Maximum	11,87000	14799,36	5,760,000,000	99,92000	3165031,	76,07000
Minimum	2,900000	1568,000	165,000,000	93,20000	505000,0	64,20000
Std. Dev.	2,116495	3445,080	1,280,000,000	1,590117	685368,9	2,381430
Skewness	0,514066	0,914494	1,112670	-0,788256	0,483268	-0,178959
Kurtosis	2,385940	3,273795	3,877368	2,940771	2,159936	2,734307
Jarque-Bera	7,170629	17,10080	28,60956	12,44448	8,199494	0,993488
Probability	0,027728	0,000193	0,000001	0,001985	0,016577	0,608509
Observations	120	120	120	120	120	120

Source: Eviews 12 test results

Based on Table 4.1 above, it can be seen that the average variable compared to the standard deviation shows that the data varies with low data, where the standard deviation value is lower than the average value for all variables. The skewness value is in the range between -2 and 2 (Ghozali, 2016) meaning that the data is normal. While the value of the Jarque-Bera statistic reveals that the data is not normally distributed considering the probability value is less than $\alpha = 5\%$.

The classical assumption test is carried out as follows:

Table 3: The classical assumption test

No.	Test Classical Assumptions	Result	Information
1	Normalization test	Probability 0.1572 > α =0.05 (greater than 0.05)	Normalized distributed data
2	Heteroskedasity Test	Prob. Chi-Square (4) = 0,455796 > α = 0.05	There is no problem of heteroskedasticity.
3	Autocorrelation Test	Prob. Chi-Square (2) = 0.193024 > α = 0.05.	No autocorrelation problems occur.
4	Multikolinearitas test	Each independent variable < 0,85	Tidak terjadi Multikolinearitas

Source: E Views 12 test results

The conclusion from Table 3 above explains that the classical assumption test above provides certainty that the regression equation obtained has accuracy in estimation, is not biased, and is consistent and the model is valid as an estimator.

The resulting model equations are the Common Effect Model, Fixed Effect Model, and Random and to get the best model, the model selection is carried out through the Chow and Hausman Tests. The following are the results of the test for determining the panel data estimation method:

Table 4: Election Results Panel Data Regression Model

Selection Test Method	Model Result Testing	Model Used
Chow test, selection:	Common Effect vs Fixed Effect, F Prob = 0,0189 < α 0.05	Fixed Effect Model (FEM)
Hausman test, selection:	Fixed Effect vs Random Effect, where Prob. 0,0109 > α 0.05	Fixed Effect Model (FEM)

Source: Eviews 12 test results

The stages of the test (test) can be used as a tool in selecting a panel data regression model (CE, FE, or DE). Based on the characteristics of the data owned, according to the stages of the model estimation test results, the selected model is the Fixed Effect which will be used for panel data regression analysis in this study. Based on the results of the model selection test, the selected model is the Fixed Effect Model. The results of the Fixed Effect Model regression equation are:

Table 5: Fixed Effects Models

Variable	Fixed Effects Model		
	Coeff	SE	Prob.
C	1,3665	4,2211	0,0014
LogX1	0,0003	0,0008	0,0056
LogX2	1,4144	6,9648	0,0284
LogX3	-1,2947	0,9551	0,0118
LogX4	-6,8345	4,1434	0,0430
LogX5	3,3374	1,4028	0,0118
$LogX2_{t-1}$	-2,0585	5,7262	0,0004
$LogX5_{t-1}$	3,1032	7,6452	0,0284
R-squared	0,7852		
Adjusted R-squared	0,7848		
F-statistic	2,4385		
Prob(F-statistic)	0,0002		

Source: Eviews 12 test results

Table 4 can describe the results of the estimation of the Unemployment model (Y) and the form of the relationship that occurs partially as follows:

$$LogY = 1,3665 + 0,0003 LogX_{1it} + 1,4144 LogX_{2it} - 1,2947 LogX_{3it} - 6,8345 LogX_{4it} + 3,3374 LogX_{5it} - 2,05585 LogX_{2t-1} + 3,1032 LogX_{5it-1}$$

The equation above explains that:

a. The constant of 1,3665 means that if the variables are Total Population (X_1), Regional Original Income (X_2), Education (X_3), Regional Minimum Wage (X_4), and Human Development Index (X_5), the previous year's Original Regional Income (X_{2t-1}), the previous year's Human Development Index (X_{5t-1}) then Unemployment (Y) is 1,3665 and the form of the relationship is significant and positive.

b. Population variable regression coefficient (X_1) of 0,00031. Based on the regression coefficient, it can be calculated the elasticity of the Population (X_1) to Unemployment. The magnitude of the elasticity value of Population (X_1) is 0,00031, meaning that every increase in Population (X_1) by 1 unit will increase Unemployment (Y) by 0,00031 unit or called inelastic and the effect is significant and positive.

c. The regression coefficient of the Regional Original Income variable (X_2) is 1,4144. Based on the regression coefficient, it can be calculated the elasticity of Regional Original Income (X_2) to Unemployment. The magnitude of the unemployment elasticity value (X_2) is 1,4144, meaning that every increase in local revenue (X_2) by 1 unit will increase unemployment (Y) by 1,4144 units or it is called elastic and the effect is significant and positive.

d. The regression coefficient of the Education variable (X_3) is -1,2947. Based on the regression coefficient, it can be calculated the elasticity of the Education variable (X_3) on Unemployment. The value of education elasticity (X_3) is 1,2947, meaning that every increase in education (X_3) is 1 unit, it

will reduce unemployment (Y) by 1,2947 units or it is called elastic and the effect is significant and negative.

e. The regression coefficient of the Regional Minimum Wage variable (X_4) is -6,835. Based on the regression coefficient, it can be calculated the elasticity of the Regional Minimum Wage variable (X_4) on unemployment. The elasticity value of the regional minimum wage (X_4) is -6,835, meaning that every increase in the regional minimum wage (X_4) by 1 unit will reduce unemployment (Y) by 6,835 units or it is called elastic and has a significant and positive effect

f. The regression coefficient of the Human Development Index variable (X_5) is 3,337. Based on the regression coefficient, it can be calculated the elasticity of the variable Human Development Index (X_5) on Unemployment. The elasticity value of the Human Development Index (X_5) is 3,337, meaning that every increase in the Human Development Index (X_5) by 1 unit will increase Unemployment (Y) by 3,337 units, or is called elastic and has a significant and positive effect.

g. The regression coefficient of the Regional Original Income variable in the previous year (X_{2t-1}) was -2,05585. Based on the regression coefficient, it can be calculated the elasticity of Regional Original Income in the previous year (X_{2t-1}) to Unemployment. The magnitude of the elasticity value in the previous year ($X2t-1$) was obtained – 2,05585 meaning that every increase in Local Own Revenue in the previous year ($X2t-1$) by 1 unit will reduce Unemployment (Y) by 2,05585 units or it is called elastic and the effect significant and negative.

h. The regression coefficient of the Human Development Index variable in the previous year (X_{5t-1}) was 3,10321. Based on the regression coefficient, it can be calculated the elasticity of the Human Development Index variable in the previous year (X_{5t-1}) on unemployment. The elasticity value of the previous Human Development Index (X_{5t-1}) was 3,10321, meaning that every increase in the Human Development Index in the previous year (X_{5t-1}) was 1 unit, it would increase Unemployment (Y) by 3,10321 units or it is called elastic and the form of the relationship is significant and positive.

From the multiple regression equation above, it can be concluded that the most dominant variable influencing unemployment is the Regional Minimum Wage variable with a regression coefficient of -6,835, this indicates that the increasing Regional Minimum Wage variable will lower the unemployment rate. This condition is to the theory, that an increase in the regional minimum wage will reduce the unemployment rate, where many residents are attracted to choose to work. Regional Original Income in year t increased the unemployment rate, while regional Original Income in the previous year could reduce the unemployment rate. This means that the original regional income in the previous year provided benefits to the community.

Based on Table 4 above, the results of the F test in this study have a probability value (F-statistic) of 0,0002<0,05. This result means that the independent variables are Population, Regional Original Income at this time (year t) and the previous year (t-1), Education, Regional Minimum Wage, Human Development Index at this time (year t) and the previous year (t-1) together have a significant and positive influence on unemployment.

In Table 4. It can be seen that the value of the coefficient of determination for the regression analysis between the variables Population, Local Own Revenue at this time and the previous year, Education, Regional Minimum Wage, and Human Development Index at this time and the previous year was 0,784837. The value of 78,48% is able to explain unemployment, while the remaining 21,52% is influenced by other variables not included in this research model.

E. CONCLUSIONS AND POLICY RECOMMENDATIONS

The calculation results explain that model testing using the Chow test and Hausman test shows that the FEM model is more appropriate to use compared to the CEM and REM models. With the FEM model, it is found that together all variables have a significant and positive effect on unemployment. Partially, total population, regional original income in year t, and current Human Index Development and previous years have a positive and significant effect on unemployment. And meanwhile Education, Regional Minimum Wage, and Regional Original Income in the previous year had a significant and negative effect on unemployment in 8 provinces in Sumatra. The magnitude of the variation of all independent variables that can explain their effect on unemployment is 78,48 percent and the remaining 21,52 percent is influenced by other variables, not in the study.

In this case, it can be recommended that: first, the government prioritizes family planning and migration control programs to control population growth and reduce unemployment rates because population levels increase unemployment rates. Second, the addition of facilities and infrastructure in the field of education, improving the quality of its Human Resources through training, mentoring to improve community skills, and free further education programs. This is because education can reduce unemployment. Third, concerning the Human Development Index which makes a positive and significant contribution to unemployment, it should be expected that it will contribute significantly and negatively or that an increase in the Human Development Index can reduce the unemployment rate. For this, the government must create programs to reduce unemployment and improve people's welfare, especially the provision of jobs according to the education level of the community.

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