

## **Analisis Pengaruh Pengangguran Terbuka, *Human Capital* dan Jumlah Penduduk terhadap Kemiskinan di Sumatera Utara**

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### **Abstrak**

Penelitian ini bertujuan untuk mengetahui seberapa besar pengaruh tingkat pengangguran, sumber daya manusia dan jumlah penduduk terhadap kemiskinan pada periode 2018-2022. Penelitian ini menggunakan metode kuantitatif dengan analisis deskriptif. Data yang digunakan dalam penelitian ini merupakan data sekunder yang bersumber dari Badan Pusat Statistik (BPS) Sumatera Utara selama 5 tahun dari tahun 2018-2022. Teknik analisis data menggunakan Fixed Effect Model berdasarkan hasil uji Chow dan uji Hausman. Hasil penelitian menunjukkan bahwa (1) variabel independen yaitu pengangguran terbuka, sumber daya manusia, dan jumlah penduduk berpengaruh signifikan terhadap kemiskinan di provinsi Sumatera Utara, (2) tingkat pengangguran terbuka berpengaruh positif dan signifikan terhadap kemiskinan di provinsi Sumatera Utara, Sumatera, (3) variabel Modal Manusia berpengaruh negatif dan signifikan terhadap kemiskinan di Sumatera Utara, dan (4) variabel jumlah penduduk berpengaruh positif dan tidak signifikan terhadap kemiskinan di Sumatera Utara

**Kata Kunci:** *Kemiskinan, Tingkat Pengangguran Terbuka, Sumber Daya Manusia, Jumlah Penduduk*

### **Abstract**

This research aims to find out how much influence the unemployment rate, human capital and population have on poverty in the 2018-2022 period. This research uses quantitative methods with descriptive analysis. The data used in this research is secondary data sourced from the North Sumatra Central Statistics Agency (BPS) for 5 years from 2018-2022. The data analysis technique uses the Fixed Effect Model based on the results of the Chow test and Hausman test. The research results show that (1) the independent variables, namely open unemployment, human capital, and population have a significant effect on poverty in North Sumatra province, (2) the level of open unemployment has a positive and significant effect on poverty in North Sumatra, (3) the Human variable Capital has a negative and significant effect on poverty in North Sumatra, and (4) the population variable has a positive and insignificant effect on poverty in North Sumatra

**Keywords:** *Poverty, Open Unemployment Rate, Human Capital, Population*

### **PENDAHULUAN**

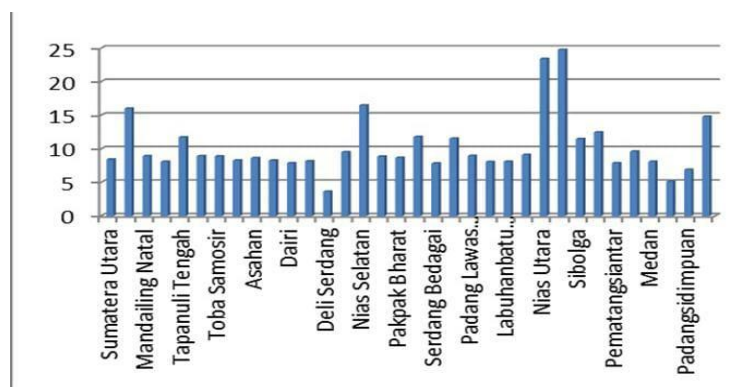
Indonesia is a development country, reflected in the grouping of countries according to their level of welfare. One of the problems facing developing countries, including Indonesia, one of which is North Sumatra Province, is unemployment. Unemployment is a very complex problem because it affects and is influenced by many factors. Interacting according to patterns Not always easy to understand. This can lead to social vulnerability, and it will probably lead to poverty. Reducing the number of poor people, which ultimately has a positive impact on development and the economy, is one of the national development suggestions. The most important social indicator and the root of development problems is poverty

(Prasetyoningrum, 2018) The problem of poverty is a problem that society always faces, whether they realize it or not. Where there are people, there is poverty, and almost every country experiences poverty, but of course each country has different solutions to overcome it. This poverty causes very different social problems.

The World Bank in its publication, World Development Report 2000/2001 Attacking Poverty, defines poverty as a situation where a decent standard of living is not achieved. Meanwhile, the United Nations (UN) in its publication, The World Situation Report 1997, described poverty as a condition related to the inability to meet basic needs. From the various explanations above, a definition of poverty can be extracted as a condition when a person's standard of living is considered lower than the poverty standard known as the poverty line.

According to (Arsyad, 2010) One of the policies in reducing poverty is through increasing human resources. Achieving human resource development can be done through improving access to consumption of social services, increasing productivity and efficiency through training poor people with skills development in the hope of being able to encourage income figures, as well as increasing access to health and basic services.

In the last 5 years, Human Capital in North Sumatra Province has continuously provided economic and social improvements to the community. This can be seen from the quality of human resources which is starting to develop, as seen in 2018. Human Capital in North Sumatra Province was 9.34% and in 2022 it will continue to increase to 9.71%. (Adekoya, 2018) shows that human capital is believed to be the basis of economic prosperity. The high level of Human Capital in North Sumatra Province shows high access to Health, Education and living standards which encourage productivity and economic development.



**Graph 1. Poverty level in North Sumatra**

Judging from the graph above, we know that poverty in North Sumatra in 2022 will be 8.42 percent. Where in the picture above shows that West Nias is West Nias Regency with the highest poverty rate of 24.75 percent. However, specifically poverty in Pematang Siantar is 7.88 percent and Tebing Tinggi is 9.59. And on the other hand, the lowest poverty level in Deli Serdang is 3.62 percent.

Hilmi (2022) states that the population variable has a positive and insignificant effect on poverty. There are several things that make population an obstacle to development and have a positive effect on poverty. An increase in population without being accompanied by progress in other development factors will not increase income and demand. Thus, population growth will actually reduce wage levels and this means lower production costs. Apart from that, according to Malthus, a continuous increase in population is a necessary element to support additional demand, but on the other hand, it is feared that a high increase in population will have a negative effect on economic growth, which will impact the prospects for poverty reduction and development efforts further away.

Ilham (2019) states that Human Capital has a negative and significant effect on poverty. In this case, it is a very good factor that can reduce poverty, therefore the government needs to

pay more attention to the quality of human capital in order to reduce poverty levels, especially in North Sumatra.

Rizky Febrian Saragih et al (2022) the open unemployment rate partially has a positive and significant effect on the poverty level. If the open unemployment rate increases, the poverty rate will increase further. Therefore, there is a need for government programs to help those who are unable to find work in various activities, such as training that can reduce the number of public unemployed and improve the skills of the unemployed to work in the business world. Apart from that, the government needs to provide entrepreneurship training with the aim of creating jobs for the wider community and reducing the number of unemployed.

With the various influences arising from the indicators above, it can directly influence poverty in North Sumatra Province. Therefore, to see how big the influence of open unemployment, human capital, and population size is on poverty, the author is interested in carrying out this research with the title "Analysis of Open Unemployment Levels, Human Capital, and Population Numbers on Poverty in North Sumatra"

## RESEARCH METHODS

In this study, the data collection techniques used are taken from documents of the Central Bureau of Statistics (CBS). The data obtained is in the form of secondary data and contains the latest data. In this research, there are 4 variables that are the focus of the research, namely poverty as dependent variable, and Open Unemployment Rate, *Human Capital* and Population as independent variables. In this research, the data analysis used is data analysis using panel data regression. Panel data is a combination of cross section and time series data. This method can be used to determine the influence of one variable on another. In this research, the function model is will be used to determine and analyze poverty levels in 2018-2022 are as follows:

$$Y = \beta_0 + \beta_1OUR_{it} + \beta_2HC_{it} + \beta_3POPULATION_{it} + e_{it}$$

Ket :

Y	= Poverty
OUR (X1)	= Open Unemployment Rate
HC (X2)	= Human Capital
POPULATION (X3)	= Total Population
i	= Cross section
t	= Time series
$\beta$	= Coeficient
e	= error term

## RESULTS AND DISCUSSION

### Check the suitability of the model

#### Chow test

Chow test is used to determine which model is better between common effects (CEM) and fixed effects (FEM).

#### Cross-section fixed effects test

Effects Test	Statistics	df	Prob.
Cross-section F	240.121962	(32,129)	0.0000
Chi-square cross-section	677.113708	32	0.0000

Based on the above test results, it can be seen that the Chi square result is  $0.0000 < \alpha(0.05)$ , then we can conclude that the model is stationary.

### Hausman test

Hausman test is used to determine which model is better between fixed effects (FEM) and random effects (REM).

#### Cross-section random effects test

Test Summary	Chi-Sq. Statistics	Chi-Sq. df	Prob.
Random cross-section	11.379638	3	0.0098

Based on the above test results, it can be seen that the Chi-squared result is  $0.0098 < \alpha$  (0.05), so we can conclude that the model is stationary. Therefore, we can conclude that the best model in this study is the fixed effects model (FEM).

### Regression analysis of FEM model

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	20.00450	1.620983	12.34097	0.0000
OUR	0.087914	0.044484	1.976308	0.0503
HC	-1.076144	0.182858	-5.885124	0.0000
TP	4.35E-07	1.12E-06	0.389211	0.6978

#### Effects Specification

##### Cross-section fixed (dummy variables)

MSE Root	0.396431	R-squared	0.992747
Mean dependent var	10.86964	Adjusted R-squared	0.990780
SD dependent var	4.669172	SE of regression	0.448348
Akaike info criterion	1.423736	Sum squared resid	25.93105
Schwarz criterion	2.101397	Log likelihood	-81.45826
Hannan-Quinn criter .	1.698823	F-statistic	504.5031
Durbin-Watson stat	2.030365	Prob(F-statistic)	0.000000

Based on the results of the regression testing above, it can be formulated as follows:

$$Y \text{ Poverty} = \beta_0 + \beta_1 \text{OUR} + \beta_2 \text{HC} + \beta_3 \text{TP} + e$$

$$Y \text{ Poverty} = 20.00450 + 0.0087914 \text{OUR} - 1.076144 \text{HC} + 4.35\text{E-}07 \text{TP} + e$$

From the regression equation obtained based on estimation results using the e-views 12 application, it can be interpreted that the constant has a positive and significant effect on poverty in districts/cities in North Sumatra, then the open unemployment variable has a positive and significant effect on poverty, then the *Human Capital variable* has a negative and significant effect on poverty in districts/cities in North Sumatra, and finally the population variable has a positive and insignificant effect on poverty in districts/cities in North Sumatra.

### Classic Assumption Test

#### Multicollinearity Test

The multicollinearity test is a test used to see whether the regression model finds a correlation between independent variables. Based on Regression test results were obtained results testing multicollinearity as follows:

OUR	HC	TP

<b>TPT</b>	<b>1,000000</b>	<b>0.406249</b>	<b>0.419036</b>
<b>H.C</b>	<b>0.406249</b>	<b>1,000000</b>	<b>0.281948</b>
<b>TP</b>	<b>0.419036</b>	<b>0.281948</b>	<b>1,000000</b>

From the output, the correlation value between independent variables is less than 0.8. So it can be concluded that there is no multicollinearity between the independent variables.

### Test Heteroscedasticity

<b>Variables</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistics</b>	<b>Prob.</b>
<b>C</b>	<b>0.176488</b>	<b>0.892002</b>	<b>0.197856</b>	<b>0.8435</b>
<b>TPT</b>	<b>-0.037811</b>	<b>0.024479</b>	<b>-1.544633</b>	<b>0.1249</b>
<b>H.C</b>	<b>0.015755</b>	<b>0.100624</b>	<b>0.156569</b>	<b>0.8758</b>
<b>JP</b>	<b>3.44E-07</b>	<b>6.15E-07</b>	<b>0.558664</b>	<b>0.5774</b>

Based on the output results, it shows that the value of prob. Each variable is  $> 0.05$ , so it can be concluded that there is no heteroscedasticity problem.

### Autocorrelation Test

The autocorrelation test is carried out to see whether in a linear regression model there is a correlation between confounding errors in period  $t$  and errors in period  $t-1$  (previous). Based on results estimates obtained \_ The Durbin-Watson stat value is 2.030365. Furthermore For see results testing using benchmarks  $dL$  and  $dU$  values . The values for  $DL=1.7085$  and  $DU=1.7825$ . Based on the results of Durbin-Watson calculations, the position of  $DW$  is between  $DU$  and  $(4-Du)$ . So, in this model there is no autocorrelation. As explained below and  $DU=1.7825$ . Based on the results of Durbin-Watson calculations, the position of  $DW$  is between  $DU$  and  $(4-Du)$ . So, in this model there is no autocorrelation.

### T-test (partial)

#### Open Unemployment Rate (OUR)

Based on the test results that have been carried out in the FEM Model Regression Test, the output result or calculated  $t$  of the variable Open Unemployment Rate ( $X_1$ ) is 1.9763 with a probability value of 0.05. The results of this test show that the output result is less than 0.05 then  $H_1$  is accepted and  $H_0$  is rejected. So it is concluded that the Open Unemployment Rate has a positive effect and has a significant influence on poverty in North Sumatra.

### Human Capital

Based on the results of the regression testing that has been carried out, it is found that the Human Capital variable ( $X_2$ ) has an output result or  $t$  count of -5.885 with a probability value of 0.0000. The results of this test show that  $H_0$  is rejected and  $H_1$  is accepted. So it can be concluded that the Human Capital variable has an effect negative and has a significant influence on poverty in North Sumatra.

### Population

In testing the population ( $X_3$ ) it shows that the population variable has an output or  $t$  count of 0.389 with a probability value of 0.697. The results of this test show that the output result is more than 0.05, so  $H_0$  is accepted and  $H_1$  is rejected. So it is concluded that population size has a positive effect and does not have a significant effect on poverty in North Sumatra.

### F- Test (Simultaneous)

The F test is very necessary to see how much influence the Independent Variable ( $X$ ) has on the variable ( $Y$ ) together or simultaneously. The results of this test can be seen from the probability value  $F$ . Based on the results of the tests that have been carried out, it is found that in



this research the probability value  $F$  is  $0.0000 < \alpha(0.05)$  so it can be concluded that all independent variables (Open Unemployment Rate, Human Capital, and Population) together or simultaneously have a significant effect on poverty in North Sumatra Province.

### **Coefficient of determination and correlation**

To find out the  $R^2$  determination test, you can see the value of the Adjusted R-square coefficient. This value is used so that the use of the coefficient of determination is not biased towards the number of variables. Based on results testing is known that The R-square value is 0.9927. mark the describe that three independent variables namely , Unemployment Rate Open, Human Capital and population have influence on poverty amounting to 99.27% and the remainder amounting to 0.73% is influenced by other variables not used in this research .Meanwhile for mark correlation from the obtained Adjusted R-Square is 0.9907 or by 99% this means that relationship between independent variables and variables dependent in research that can be said classified strong Because have test results that almost meet 100%.

### **Explanation/Effects Between Variables Simultaneously**

Based on results process the data that has been done done, can is known that all independent variables namely the Unemployment Rate Open, Human Capital and Population simultaneously or together influential significant impact on poverty in North Sumatra province . This is proven by the calculated  $F$  value ie of R-square of 0.9927 and value probability 0.000. that value describe that three independent variables namely , Unemployment Rate Open, Human Capital and population have influence on poverty amounting to 99.27% and the remainder amounting to 0.73% is influenced by other variables not used in this research .And based on results The constant value obtained from the regression test is amounting to 20.00450 which can be concluded that if level unemployment open, Human Capital and Population in 33 districts / cities in North Sumatra remain ( constant ) . poverty of 20.04%.

### **Partial Influence of the Open Unemployment Rate Variable on Poverty**

The Open Unemployment Rate variable has a coefficient value of 0.00879, this states that if the open unemployment rate in North Sumatra Province increases by 1%, poverty will increase by 0.008%. And based on the test results that have been carried out in the FEM Model Regression Test, the output result or calculated  $t$  of the Open Unemployment Rate ( $X_1$ ) variable is 1.9763 with a probability value of 0.05. The results of this test show that the output result is less than 0, 05 then  $H_1$  is accepted and  $H_0$  is rejected. So it is concluded that the open unemployment rate has a positive effect and has a significant influence on poverty in North Sumatra. This is in line with research conducted by Rizky Febrian Saragih et al (2022) the open unemployment rate partially has a positive and significant effect to poverty levels. If the open unemployment rate increases, the poverty rate will increase further. Therefore, there is a need for government programs to help those who are unable to find work in various activities, such as training that can reduce the number of public unemployed and improve the skills of the unemployed to work in the business world. Apart from that, the government needs to provide entrepreneurship training with the aim of creating jobs for the wider community and reducing the number of unemployed.

### **Partial Influence of Human Capital Variables on Poverty**

The Human Capital variable has a coefficient value of -1.0761, this states that if Human Capital in North Sumatra increases by 1%, it will reduce poverty by 1.07%. And based on the results of the regression testing that has been carried out, the Human Capital variable ( $X_2$ ) has the output result or  $t$  count is -5.885 with a probability value of 0.0000. The results of this test show that  $H_0$  is rejected and  $H_1$  is accepted. So it can be concluded that the Human Capital variable has a negative effect and has a significant influence on poverty in North Sumatra. This is in line with research conducted by Ilham (2019) states that Human Capital has a negative and significant effect on poverty. In this case, it is a very good factor that can reduce poverty, therefore the

government needs to pay more attention to the quality of human capital in order to reduce poverty levels, especially in Sumatra. North.

### Effect of Population Variables on Poverty

The population variable has a coefficient value of 4.35E-07, this states that if the population in North Sumatra Province increases by 1 person, poverty will increase by 4.35%. And in testing the population (X3) it shows that the population variable has an output or t count of 0.389 with a probability value of 0.697. The results of this test show that the output result is more than 0.05, so  $H_0$  is accepted and  $H_1$  is rejected. So it is concluded that population has a positive effect and does not have a significant effect on poverty in North Sumatra. This is in line with research conducted by Hilmi (2022) which states that the population variable has a positive and insignificant effect on poverty. There are several things that make population an obstacle to development and have a positive effect on poverty. An increase in population without being accompanied by progress in other development factors will not increase income and demand. Thus, population growth will actually reduce wage levels and this means lower production costs. Apart from that, according to Malthus, a continuous increase in population is a necessary element to support additional demand, but on the other hand, it is feared that a high increase in population will have a negative effect on economic growth, which will impact the prospects for poverty reduction and development efforts further away.

### CONCLUSION

From the results of the tests carried out, it can be concluded that open unemployment has a positive and significant effect on poverty. If the level of open unemployment increases, then the level of poverty will increase. Furthermore, the Human Capital variable has a negative and significant effect on poverty in districts/cities in North Sumatra, this is a very good factor that can reduce poverty, therefore the government needs to pay more attention to the quality of human capital in order to reduce the level of poverty, especially in North Sumatra. And finally, the population variable has a positive and insignificant effect on poverty in districts/cities in North Sumatra. There are several things that make population an obstacle to development and have a positive effect on poverty. An increase in population without being accompanied by progress in other development factors will not increase income and demand. Thus, population growth will actually reduce wage levels and this means lower production costs.

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