

ANALYSIS OF THE INFLUENCE OF UNEMPLOYMENT, WORK FORCE, AND TOTAL POPULATION ON POVERTY IN NORTH SUMATRA PROVINCE 2005-2020

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Abstract

North Sumatra Province is experiencing problems in various sectors of life. The economic sector is one of the important sectors that influences the course of other sectors of life. poverty as one of the problems that arise in the economic sector is the focus of the studies examined in this study. The purpose of this study was to determine the effect of unemployment, labor force, and population on poverty in the province of North Sumatra. This study uses multiple regression analysis method, using secondary data as a source of study. The secondary data obtained will be processed using the eviews application. The results of the study show that unemployment and population each have a significant effect on poverty,

Keywords: Unemployment, labor force, poverty, population.

INTRODUCTION

Indonesia is an archipelagic country with thousands of islands stretching from the west to the east. As a country with such a vast territory, in its journey the Indonesian people have experienced many changes, developments and progress in various sectors/fields of life. Therefore, it is not surprising that towards a more advanced Indonesia, Indonesia also experienced turmoil and also problems in various sectors of life. Politics, economy, culture, education, and health are crucial or important fields in the life of the state and society.

The economic sector is a very important component for a country. Because the role is very important for a country, the economic sector is one of the important things for the country to pay attention to because in the economy various kinds of economic problems can arise which will hinder the country's development and growth. According to Abraham Maslow, economics is a field of study that tries to solve the problem of the basic needs of human life through galvanizing all available economic resources based on certain principles and theories in an economic system that is considered effective and efficient.

There are various kinds of problems that arise in the economy. The main problems that arise that are experienced by each country are production, consumption, and distribution problems. If these basic problems are not paid attention to and handled, they will cause problems for the community, for example the emergence of unemployment, low life expectancy, poverty, backwardness in education, low quality of health and many others. For this reason, it is important for the government of a country to plan, control, and overcome problems in this economic field.

Table.1 Poor Population, Unemployment, Labor Force, Population in North Sumatra Province in 2005-2020

Year	Pend. Poor	Unemployment	Workforce	Resident
	Soul	Soul	Soul	Soul
2005	1,760,228	636,980	5,803,112	12,123,360
2006	1,979,702	632,049	5,491,696	12,326,678
2007	1,770,000	571,334	5,654,131	12,643,494
2008	1,630,000	554,539	6,094,802	12,834,371
2009	1,500,000	532,427	6,298,070	13,042,317
2010	1,490,000	491,806	6,617,337	13,248,386
2011	1,436,400	402,120	6,026,020	12,982,204
2012	1,400,400	379,980	6,274,874	13,103,596
2013	1,416,400	412,200	6,500,750	13,215,401
2014	1,360,600	390,710	6,272,083	13,326,307
2015	1,508,140	428,794	6,391,098	13,766,851
2016	1,452,600	371,680	6,362,909	13,937,797
2017	1,326,600	377,288	6,743,277	14,102,911
2018	1,291,900	396,027	7,124,458	14,415,390
2019	1,260,500	382,438	7,063,662	14,562,550
2020	1,356,700	507,805	7,350,057	14,799,360

Source: North Sumatra BPS

It can be seen from the table above that every year there is an increase in the population in the province of North Sumatra, with a growing number of course more and more people need jobs to make ends meet, this encourages increased competition in the world of work especially with the factor that the number of the workforce also fluctuates every year. every year, limited employment opportunities, and other factors that will eventually have a negative effect on society, including a workforce that does not get a job, which in the end is unemployed, will reduce the quality of people's lives so that the problem of poverty arises due to the inability to meet their daily needs.

Matters like these should be an important concern for interested parties and authorities in handling and overcoming how to deal with the problem of low quality of life in North Sumatra province due to the fact that there are still many unemployed people can be resolved either through social assistance policies or other policies. Thus, by reducing the unemployment rate in the province of Sumatra it is hoped that it will have an impact on improving the quality of life of the community as a whole.

RESEARCH METHODS

This research uses quantitative research methods. The purpose of using this quantitative research method is to find out how the independent (free) variables influence, namely unemployment, labor force, and population on the dependent (tied) variable, namely poverty in this study. The data used in this study is secondary data obtained from the Central Bureau of Statistics of North Sumatra (BPS Sumut). Secondary data obtained from the North

Sumatra Statistics Center (BPS Sumut) were then processed using the eviews application. In addition, the analysis used in this study uses multiple linear regression analysis. According to Ghozali (2016: 8) multiple linear regression analysis is used to test the effect of more than one independent variable on the dependent variable.

To determine the magnitude of the influence of the independent variables, namely unemployment, labor force, and population on the dependent variable, namely the poor. then a multiple regression model is used with the basic equation as follows:

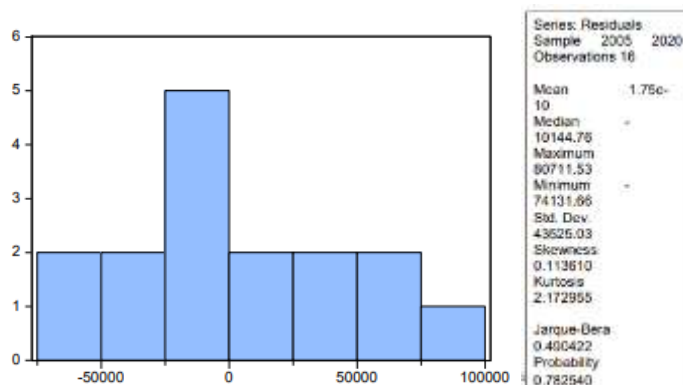
$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon$$

Information :

- Y : dependent variable (poor population)
- X1 : Independent variable (unemployment)
- X2 : Independent Variable (Labor Force)
- X3 : Independent Variable (Total Population)
- B : Regression coefficient
- ε : Standard Error

RESULTS AND DISCUSSION

A. ASSUMPTION TEST NORMALITY TEST



The normality test aims to test whether the residual or confounding variables in the regression model have a normal distribution. From the results of data processing, it is known that the Jarque-Bera value is 0.490422, while the α value is 0.05 so, the probability value is (0.490422) > α value (0.05), so we can conclude that the data used is normally distributed.

MULTICOLLINEARITY TEST

Variable	Coefficient	Uncentered VIF	Centered VIF
C	1.37E+11		925.8184
PENGANGGURAN_JIWA	0.031271		47.78309
ANGKATAN_KERJA_JI			1.751416
WA	0.004234		1171.366
PENDUDUK_JIWA	0.002146		2612.894

Multicollinearity means that there is a perfect or definite wild relationship between some or all of the variables that explain the regression model. From the results of data processing in this study it can be seen that the centered VIF value of each independent variable is not greater than 10. This means that there are no symptoms of multicollinearity in the regression model.

AUTOCORRELATION TEST

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.339816	Prob. F(2,10)	0.1467
Obs*R-squared	5.100544	Prob. Chi-Square(2)	0.0781

The autocorrelation test was carried out with the aim of testing the multiple linear regression model whether there is a correlation between residual errors in period t and errors in period t-1 (previous). From the results of data processing in this study it is known that the results of the autocorrelation test using the LM-Test method show a Chi-Squared Probability value of $0.0781 > 0.05$, so this indicates that there is no autocorrelation problem.

HETEROSCEDASTICITY TEST

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.919520	Prob. F(3,12)	0.4608
Obs*R-squared	2.990601	Prob. Chi-Square(3)	0.3931
Scaled explained SS	0.986580	Prob. Chi-Square(3)	0.8045

Heteroscedasticity is a condition where all the disturbances that appear in the population regression function do not have the same variance. From the results of data processing in this study it is known that the results of the heteroscedasticity test show the value of Chi-Squared Probability = $0.3931 > (0.05)$ so the regression model is free from heteroscedasticity problems.

HYPOTHESIS TESTING

Dependent Variable: PEND_MISKIN_JIWA
 Method: Least Squares
 Date: 05/05/21 Time: 13:09
 Sample: 2005 2020
 Included observations: 16

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1565571.	370166.4	4.229372	0.0012
PENGANGGURAN_JIWA	-1.350158	0.176835	7.635138	0.0000
ANGKATAN_KERJA_JIWA	-0.328516	0.065067	-5.048868	0.0003
PENDUDUK_JIWA	0.104178	0.046325	2.248821	0.0441

R-squared	0.951131	Mean dependent var	1496261.
Adjusted R-squared	0.938913	S.D. dependent var	196888.6
S.E. of regression	48662.46	Akaike info criterion	24.63552
Sum squared resid	2.84E+10	Schwarz criterion	24.82867
Log likelihood	-193.0842	Hannan-Quinn criter.	24.64541
F-statistic	77.85079	Durbin-Watson stat	2.870677
Prob(F-statistic)	0.000000		

SIMULTANEOUS TEST

Criteria: H_0 is accepted if Prob (F-Statistic) $> \alpha$ (0.05)

H_a is accepted if Prob (F-Statistic) $< \alpha$ (0.05)

Prob (F-Statistic) = 0.000000

Based on the calculation results above, it can be seen that the F-Statistic is 77.85079. the F-Statistic Prob value (0.000000) is smaller than the significance level of 0.05. so that testing the hypothesis H_a is accepted and H_0 is rejected. This explains that simultaneously unemployment (x1), labor force (x2), and population (x3) have a significant effect on the poor population in North Sumatra.

PARTIAL TEST

The partial test is used to show whether each independent variable has a partial effect on the dependent variable, with the t-count value compared to the t-table value or in another way by looking at the probability value or p.value.

1. The unemployment variable (x1) has a calculated t value of 7.635138. this value is greater than t table 1.78229 and sg t 0.0000 is smaller than 0.05. so testing the research hypothesis for H0 is rejected at the 5% alpha level. This shows that partially unemployment has a significant and significant effect on the poor population in North Sumatra.
2. The labor force variable (x2) has a calculated t value of -5.048868. this value is smaller than t table 1.78229 and sg t 0.0003 is smaller than 0.05. so testing the research hypothesis for H0 is accepted at the 5% alpha level. This shows that partially the labor force has no significant effect on the poor in North Sumatra.
3. The population variable (x3) has a calculated t value of 2.248821, this value is greater than t table 1.78229 and sg t 0.0441 is smaller than 0.05. so that the research hypothesis testing for H0 is rejected at the 5% alpha level. This shows that partially the population is influential and significant to the poor in North Sumatra.

COEFFICIENT OF DETERMINATION

From the results of data processing in the study showed the value of the coefficient of determination (R Squared) of 0.951131 or 95%. This shows that the independent variables in this study, namely unemployment (x1), labor force (x2), and population (x3) explain that the influence on the poor in North Sumatra in 2005-2020 is 95%. The remaining 5% is explained by other variables not included in this study.

REGRESSION EQUATION

Y : 1565571 + 1.350158 unemployment + (-0.328516) labor force + 0.104178 population+ ϵ

Explanation :

1. $\beta = 1565571$ This means that if unemployment, labor force, population are 0 (zero), then the number of poor people is 1565571
2. The regression coefficient X1 is 1.350158 which means that every 1% increase in unemployment will increase the number of poor people by 13.5% assuming other variables remain constant, and vice versa.
3. The regression coefficient X2 is -0.328516 which means that every 1% increase in the labor force will reduce the number of poor people by 3.28% assuming other variables are constant, and vice versa.
4. The regression coefficient X3 is 0.104178 which means that every 1% increase in population will increase the number of poor people by 10.4% assuming other variables are constant, and so should.

A. The Effect of Unemployment on Poverty

The results showed that partially the unemployment variable had a positive and significant effect on the poor in North Sumatra Province with a sig 0.000 <0.05, which means that unemployment is significant for the poor at the 5% level. So that the hypothesis in this study can be accepted.

The results shown in this study are in accordance with Sukirno's theory (2004) which states that the bad effect of unemployment is to reduce people's income, which in turn reduces

the level of prosperity achieved by a person. Which means that the higher the unemployment rate, the poverty rate will also increase.

This research is in accordance with research conducted by Listyaningrum Kusuma Wardani (2013) with the title "The Influence of Unemployment, Government Expenditure and Population on Poverty in Central Java Province in 2006-2010". The results showed that there was a significant influence between unemployment and poverty in districts/cities in Central Java in 2006-2010.

This research is also in accordance with research conducted by Eka Agustina (2018), with the title "The effect of population, unemployment rate and education level on poverty levels in Aceh province". The results of the study show that from the simultaneous test (F test) it can be concluded that together the variables of population size, unemployment rate and education level have a significant effect on poverty in Aceh Province. Partially, the unemployment rate has a positive and significant effect on poverty in Aceh province.

Research by diamond gem sari br sembirng, surtama simanjuntak, vini alvionita br sitepu (2021) with the title "The Influence of Inflation and Unemployment on the Poor in SumatraNorth 2006–2020". The results of the study show that partially unemployment has a positive and significant effect on poverty in the province of North Sumatra.

B. The Influence of the Labor Force on Poverty

The results showed that partially the labor force variable has a negative and significant effect on the poor in North Sumatra with a sig 0.0003 <0.05, which means that the labor force is significant for the poor at the 5% level, meaning the hypothesis is accepted. The results of the analysis so that the workforce has a negative and significant impact on the poor can be seen when the large number of residents/workforce who have jobs in the community will actually reduce the number of poor/poverty people for that region.

This research is also consistent with research conducted by Widyasworo (2014) on "Analysis of the Effects of Education, Health, and the Female Labor Force on Poverty in Gresik Regency (Case Study 2008–2012)". The results of this study indicate that the three independent variables affect the poverty rate. The level of education and participation in the female workforce has a significant effect either partially or simultaneously, while the level of health has an effect but not significantly.

Furthermore, the results of this study were also strengthened by research conducted by Fitriyanti, (2019) which showed results that the workforce had a negative and insignificant effect on poverty. So thus the labor variable does not have a significant effect on poverty.

The results of this study were also confirmed by research conducted by Sunusi et al., (2014) showing the results that the labor variable had a negative and insignificant effect on poverty.

C. The Influence of Total Population on Poverty

The results showed that partially the population variable has a positive and insignificant effect on the poor in North Sumatra with a sig 0.0441 <0.05, which means that the population has a significant effect on the poor at the 5% level. So the hypothesis in this study can be accepted. The results of this study, when analyzed logically, are quite precise where if the population increases in an area it will lead to an increase in the poor population for that area if the government is not able to prosper the people with a number that tends to increase, which in the future will actually cause a surge in population. poor in the region.

Furthermore, the results of this study are in accordance with research conducted by Mustika

in 2011 explaining that a large population causes a large supply of labor, but not all labor can be absorbed in each production sector, thus making them have no income to meet their needs. , which then plunged into poverty.

Finally, the results of this study are in line with research conducted by Sundari Rahma Sari Putri (2019) which states that in the long term the population has a positive effect on poverty with a probability value and coefficient of $0.0078 < 0.05$ and 6.560468 , respectively.

CONCLUSIONS AND RECOMMENDATIONS

A. Conclusion

The conclusions from this study, as follows:

1. Unemployment has a positive and significant effect on poverty in the province of North Sumatra in 2005-2020, this is shown through the t count of the unemployment variable of 7.635138 where this value is greater than the t table value of 1.78229 . then, followed by a probability value of 0.0000 which is less than 0.05 .
2. The work force has no significant effect on poverty in the province of North Sumatra in 2005-2020. This can be seen from the t-count value of the labor force variable of -5.048868 , this value is smaller than the t-table, which is 1.78229 . then, followed by a probability value of 0.0003 which is less than 0.05
3. The population has a positive and significant effect on poverty in the province of North Sumatra in 2005-2020, this is shown through the calculated t value of the population variable of 2.248821 , this value is greater than the t table, which is 1.78229 . then, followed by a probability value of 0.0441 which is less than 0.05

B. Suggestion

1. With the results of this research, it is hoped that in the future the North Sumatra provincial government will pay more attention to workforce management, both expanding and opening new jobs so that each workforce can be absorbed in the world of work so that it is expected to be able to reduce the number of poor people in the people of North Sumatra.
2. With the results of this research, in the future the Sumatran provincial government will make policies/programs to control the surge in population growth in the North Sumatra region, or it can also create programs for the welfare of each resident despite an increase in population in the North Sumatra province.
3. For researchers who wish to develop further on the same topic as this journal, it can be noted that the labor force variable is either added to the year range or reduced to better adjust to the direction of the theory, besides that other better variables can also be added so that future research is more perfect than this research.
- 4.

REFERENCE

- Asih Handayani. (2015). The Influence of Education, Health and Unemployment Levels on Poverty Levels in Bojonegoro Regency 2002 -2015. *EKBIS Journal*, 19(1), 1024–1038.
- Magister, P., University, M., Population, PJ, Development, I., & Dan, M. (2020). *J-MAS*. 5(2), 251–256. <https://doi.org/10.33087/jmas.v5i2.191>
- Influence, A., & Zakat, D. (2019). *Work, And Inflation Against Poverty In Thesis*.
- Influence of Inflation, A., Economy, P., Unemployment Rate, D., & STIE-IBEK Program Bangka Belitung Pangkal Pinang, M. (2016). *Windra Pan Budi Marwoto Yudi Rafani*. *Jipmb*, 14(2), 19–27. www.stie-ibek.ac.id
- Permata, I., Br, S., & Simanjuntak, S. (2021). Effects of Inflation and Unemployment on the

- Poor in North Sumatra, 2006 – 2020. 2(2), 1–13.
- Putra, IKAA, & Arka, S. (2016). Analysis of the Influence of Open Unemployment Rate, Employment Opportunity, and Education Level on Poverty Levels in Regencies/Cities in Bali Province. *EP Unud*, 7(3), 416–444.
- Suhandi, N., Ayu, E., Putri, K., & Agnisa, S. (2018). Analysis of the Effect of Total Population on Total Poverty Using the Linear Regression Method in Palembang City. *09(2)*, 77–82.
- Sunusi, DK, Kumenaung, A., & Rotinsulu, D. (2014). Analysis of the Influence of Total Workforce, Education Level, Government Expenditure on Economic Growth and Its Impact on Poverty in North Sulawesi in 2001-2010. *Efficiency Scientific Periodical Journal*, 14(2), 120–137.