

## Analysis of The Effect of Education Level, Economic Growth, and Unemployment Rate on The Poverty Rate In Sumatera Barat, Indonesia

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### Abstract

Poverty is a multidimensional problem that is of concern to all countries in the world. The purpose of this study is to look at the influence of education levels, economic growth, and unemployment rates on poverty rates in the West Sumatra Province of Indonesia. This study uses the Fixed Effect Square Dummy Variable / FEM LSDV approach with panel data which is a combination of 12 districts and 7 cities in West Sumatra Province with a span of time from 2010 to 2016. The results of the research conducted indicate that there are negative influences but not significant between education level variables and poverty rates, while economic growth variables have a negative and significant effect on poverty rates in West Sumatra Province. As with the unemployment rate variable which shows a positive and significant influence on the level of poverty in the Province of West Sumatra. Based on the results of this study, the authors suggest the need to optimize policies related to efforts to increase the level of education, economic growth in addition to emphasizing the unemployment rate in the West Sumatra Province of Indonesia in order to welcome the current digital era.

**Keywords:** education level, economic growth, unemployment rate, poverty rate

### Introduction

Poverty is one of the macro problems that has become the center of attention of countries in the world including Indonesia. The portrait of poverty that occurs is sometimes very contrasting, because some people live in luxury, while some others live in shortages. Wealth for some people means poverty for others. the level of gap is extraordinary and relatively quite dangerous. To overcome this problem, it is necessary to make an appropriate policy by identifying groups of people living below the poverty line and their characteristics. This study aims to analyze the influence of education level, economic growth and unemployment rate on the poverty rate that occurs in the West Sumatra Province of Indonesia. Generally, a condition is called poor if it is characterized by lack of or unable to meet the level of basic human needs. In the past generally people became poor not because of lack of food, but poor in the form of lack of facilities or materials. From the size of modern life, as it is today, poverty can mean that they do not enjoy educational facilities, health services, and other conveniences available in modern times. Poverty is no longer only regarded as an economic dimension but has expanded to other dimensions such as social, health, education and politics. According to the Badan Pusat Statistik/BPS (2016), poverty is the inability to meet minimum standards of basic needs which include food and non-food needs.

Usually there are two conditions that cause poverty to occur, namely natural and artificial poverty. Natural poverty occurs due to limited natural resources, low technology use and natural disasters. Artificial poverty occurs because institutions in the community make some community members unable to control economic facilities and various other facilities are available until they remain poor. That is why economists often criticize development policies that only focus on growth rather than equity (Lopes, Luis, & Marinho, nd. 2015). Various problems of population poverty are indeed interesting to see from various aspects, social, economic, psychological and political. Social aspects are mainly due to limited social

interaction and mastery of information. Economic aspects will be seen in limited production equipment ownership, small wages, low bargaining power, zero savings, anticipation of weak opportunities. From the psychological aspect mainly due to inferiority, fatalism, laziness, and feelings of isolation. In fact, from the political aspect related to small access to various facilities and opportunities, discriminatory positions, are weak in the decision making process (Nakabashi, 2018).

According to Sharp et al. (2000), there are five factors that cause poverty, one of which is the low quality of the existing workforce. The low quality of the workforce is influenced by the level of education that is completed by a person. This is in accordance with the results of a study conducted by (Duarte, Ferrando-latorre, Molina, & Duarte, 2017) which states that education variables have a negative and significant effect on poverty. This means that efforts to improve education levels will have an impact on the emphasis on poverty rates. In addition, other factors that can influence poverty are economic growth that can be achieved by a region. Increasing the number of Gross National Products as an indicator of economic growth means that there are more better jobs and higher levels of income, as well as a larger base of tax collection, which allows the government to do more for the poor. Research conducted by Hermanto and Wiguna (2013) shows that economic growth has a negative and significant influence on poverty rates in Central Java Province, Indonesia.

Unemployment is the term for people who do not work at all, find work, work less and from two days a week, or someone who is trying to get a decent job. Unemployment is generally caused by the number of workers or job seekers who are not comparable to the number of jobs that are able to absorb it. Unemployment is often a problem in the economy because, with unemployment, productivity and income of the people will decrease, it can cause poverty and other social problems (Albanesi & Şahin, 2017).

**Table 1 Average School Duration, Gross National Product (GNP), Unemployment, and Poverty Rate Based on Districts and Cities in West Sumatra Province in 2014-2015**

District and City	2014				2015			
	Educ at ion (years)	Unemploy ment ( % )	GNP (Million)	Poverty (thousand )	Educ at ion (years)	Unemploy ment (%)	GNP (Million)	Poverty (thousan d)
Kep. Mentawai	6,19	2,45	2360745,77	12,58	6,27	1,25	2483154,10	13,16
Pesisir Selatan	8,10	9,56	7392536,44	35,02	8,11	11,69	7816214,05	38,13
Solok	7,56	2,17	7665496,76	34,48	7,57	3,97	8081787,06	36,42
Sijunjung	7,32	3,22	5239420,15	17,00	7,33	4,26	5536763,55	17,52
Tanah Datar	7,80	4,10	7552749,71	18,22	7,93	4,46	7953886,91	20,05
Padang Pariaman	6,88	7,86	10444263,5	33,92	6,89	5,80	11084180,68	35,87
Agam	8,10	5,72	11287816,3	33,28	8,17	6,05	11909293,38	36,06
Lima Puluh Kota	7,59	1,53	8640817,05	27,42	7,91	3,78	9122747,09	28,76
Pasaman	7,62	2,10	4827486,48	20,33	7,63	5,06	5084644,45	21,88
Solok Selatan	7,97	3,76	3101947,40	11,56	7,98	6,30	3267801,77	11,95
Dharmasraya	7,99	2,61	5821733,94	15,22	8,03	3,51	6156752,05	15,89
Pasaman Barat	7,53	5,66	8853519,46	28,59	7,83	3,79	8357027,54	32,34
Padang	10,93	12,05	33061946,0	40,70	10,97	14,00	35175350,27	44,43
Solok	10,75	7,34	2177368,53	2,71	10,77	4,72	2307302,88	2,72
Sawah Lunto	9,65	6,34	2123644,91	1,34	9,66	7,18	2251498,94	1,34
Padang Panjang	10,79	8,92	1951004,28	3,23	11,09	6,33	2066248,20	3,44
Bukittinggi	10,71	2,52	4592478,19	6,00	10,79	6,04	4873746,31	6,54
Payakumbuh	9,96	6,30	3344165,58	8,85	10,29	7,07	3551227,44	8,51
Pariaman	9,94	11,10	2741539,11	4,30	9,96	6,61	2900066,34	4,58
Sumatra Barat	8,29	6,18	133340836,	354,74	8,42	6,89	140704876,0	379,60

Sumber : BPS Sumatra Barat 2018

From table 1 above, it can be seen that generally in each Regency and City in West Sumatra Province there is an increase in GNP except in West Pasaman Regency, this explains that in general there is an increase in regional economy, as well as the level of education of the community even in the case of some regions increase in GNP is not directly proportional to the increase in the level of education, this is because to be able to see the results of the education process takes a long time. As with the percentage of unemployment, which seems to increase from year to year in almost all districts and cities, so does the poverty rate which always increases from year to year in most districts and cities in West Sumatra Province. We can see this in a number of cases, for example in Mentawai District in 2014 which showed that the average education incurred by the community was recorded at 6.19 years or still equivalent to completing Elementary School (SD), whereas in 2015, the average education rate of the community to 6.27, meaning an increase of 1.29%. Likewise, when viewed in the percentage of unemployment in the Mentawai Islands Regency, in 2014 it was recorded at 2.45% of the number of existing work forces, while in 2015 it was recorded at 1.25% of the total workforce, this indicates that there was a decrease in the number of labor force unemployed by 1.20%, this indicates that the increase in the number of GNP from 2014 to 2015 and an increase in the average education level of the Mentawai Islands Regency community has a sensitivity to the percentage of unemployment in the Regency. As with the existing poverty rate, which was recorded at 12.58 thousand people in 2014 and amounting to 13.16 thousand people in 2015 means that there is an increase of around 58,000 people. This explains that the increase in the average number of years of schooling, an increase in the number of GNP and a decrease in the percentage of unemployment rates did not necessarily emphasize the poverty rates in the Mentawai Islands Regency. A similar case was experienced by West Pasaman District. Where in 2014, BPS noted that the average number of school hours increased by 7.53 rose to 7.83 in 2015. Likewise, the open unemployment rate in 2014 was recorded at 5.66 thousand people, down to 3.79 thousand in 2015 while the numbers GNP recorded a decline which in 2014 amounted to Rp. 8,853,519,460,000 to become Rp. 8,357,027,540,000, - while the poverty rate continued to increase from 28.59 thousand people in 2014 increased to 32.34 thousand people in 2015. Similar cases were experienced by all Regencies and Cities in West Sumatra Province. This is not appropriate or contrary to the theory that has been understood so far, that the increase in the average education attained, the increase in GNP, the decrease in the unemployment rate, should be able to concentrate or emphasize the number of poor people in an area.

Based on the description of the background of the above problems, the authors are interested in conducting a study entitled "Analysis of the influence of education levels, economic growth, and unemployment rates on poverty rates". The purpose of this research is to see the influence of education level, economic growth, and unemployment rates on poverty rates in the Province of West Sumatra Indonesia, so that it can be used as a reference material in the context of implementing programs related to regional poverty reduction.

## Methods

Data analysis method used is panel data analysis technique (data panel) and as a tool or tool to process the data used is Eviews8 application with Fixed Effect Square Dummy Variable / FEM LSDV approach considering the purpose of the study is to analyze the effect of independent variables in education level, economic growth, and the unemployment rate on the dependent variable, namely the poverty Rate in 12 districts and 7 cities in West Sumatra Province.

Fixed Effect Square approach model Dummy Variable / FEM LSDV is a model used by stacking N observations, but by giving each Cross-Section unit and a Dummy intercept variable. This approach is used to take into account the possibility that the research faces the problem of Omitted Variables, where the Omitted Variables are possible to bring changes to the intercept Time-Series or Cross-Section. The

approaching model of Fixed Effect Least Square Dummy Variable / FEM LSDV adds a Dummy Variable to allow for this intercept change so that the equation is obtained as follows:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \gamma_1 D1 + \gamma_2 D2 + \gamma_3 D3 + \gamma_4 D4 + \gamma_5 D5 + \gamma_6 D6 + \gamma_7 D7 + \gamma_8 D8 + \gamma_9 D9 + \gamma_{10} D10 + \gamma_{11} D11 + \gamma_{12} D12 + \gamma_{13} D13 + \gamma_{14} D14 + \gamma_{15} D15 + \gamma_{16} D16 + \gamma_{17} D17 + \gamma_{18} D19 + \gamma_{19} D19 + \varepsilon_{it}$$

Y = Variable poverty level

$\beta_0$  = Constanta / intercep

X1 = Educational level variable

X2 = Economic growth variable

X3 = Unemployment rate variable

$\beta_{(1,2,3)}$  = Regression coefficient respectively independent variable

$\varepsilon$  = Residual

$\gamma_{(1,2,3 \dots n)}$  = Koefisian dummy

D (1,2,3 ... n) = Regency / City

After obtaining a data panel model using the Fixed Effect Square Least Square Dummy Variable / LSDV FEM approach that included 12 districts and 7 cities in West Sumatra Province as Dummy, the existing equations were tested using classical assumption tests and statistical tests.

## Results and Discussion

By using the evIEWS8 program the estimation results are obtained as follows:

**Table 2 Estimated Results with Fixed Effect Square Dummy Variable / LSDV FEM Method**

Dependent Variable: Y

Method: Panel Least Squares

Date: 09/07/18 Time: 21:15

Sample: 2010 2016

Periods included: 7

Cross-sections included: 19

Total panel (balanced) observations: 133

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.021775	0.079060	-0.275424	0.7835
X2	-0.060436	0.019092	-3.165559	0.0020
X3	0.109493	0.052859	2.071414	0.0406
C	7.619002	0.370484	20.56499	0.0000

### Cont's Table-Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.898345	Mean dependent var	7.903158
Adjusted R-squared	0.879113	S.D. dependent var	3.029985
S.E. of regression	1.053492	Akaike info criterion	3.092105
Sum squared resid	123.1927	Schwarz criterion	3.570208
Log likelihood	-183.6250	Hannan-Quinn criter.	3.286388
F-statistic	46.71071	Durbin-Watson stat	1.156460
Prob(F-statistic)	0.000000		

Based on the results of data processing table above using the Eviews8 program, the regression equation is obtained as follows:

$$Y = 25,37083 - 0,021775(X1) - 0,060436(X2) + 0,109493(X3)$$

This discussion is based on the results of the research data so that the discussion that will be presented is a further explanation related to the results of the research carried out with all the objectives of the research setting. The following is a follow-up discussion related to the results of the research conducted:

#### **Effect of Education Levels on Poverty Rates**

From the results of the analysis and hypothesis testing conducted in this study that there are no significant negative effects between education and poverty variables in 12 districts and 7 cities in West Sumatra Province. The influence of education variables on poverty in 12 districts and 7 cities in West Sumatra Province during the period 2010 to 2016 is negative, with a regression coefficient of -0.021775. This means that if the education level increases by one percent, it will give an influence on the reduction of poverty rate by 2.17 percent in 12 districts and 7 cities in West Sumatra Province assuming ceteris paribus. There is no significant negative effect indicating that poverty in 12 districts and 7 cities in West Sumatra Province is not so determined by the level of education. This is in accordance with the theory conveyed by (Duarte, Ferrando-latorre, Molina, & Duarte, 2017) suggesting that educational variables have a negative and significant effect on poverty.

#### **Effects of Economic Growth on Poverty Rates**

From the results of data analysis and hypothesis testing conducted in this study, the results show that there are negative and significant effects between economic growth and poverty rates in 12 districts and 7 cities in West Sumatra Province. The effect of economic growth on poverty rates in 12 districts and 7 cities in West Sumatra Province during the period 2010 to 2016 is negative with the regression coefficient of -0.060436. This means that if economic growth increases by one percent, it will reduce the poverty rate by 6.04 percent in 12 districts and 7 cities in West Sumatra Province assuming ceteris paribus. This is in accordance with the theory put forward (Fraumeni, 2017) where If the growth of per capita GNP as an indicator of high economic growth means that there are more better jobs and higher levels of income, as well as a larger tax base which allows the government to do more for the poor.

#### **Effect of Unemployment Rate on Poverty Rate**

Based on the results of data analysis and hypothesis testing conducted in this study there is a positive and significant influence between the variables of the unemployment rate and poverty rate in 12 districts and 7 cities in West Sumatra Province with a coefficient of 0.109493. This means that if they open the unemployment rate increases by one percent it will have an influence on increasing poverty in 12 districts and 7 cities in West Sumatra Province by 10.94 percent. Likewise, if the open unemployment rate decreases by one percent, it will give an influence on the reduction of poverty rate by 10.94 percent in 12 districts and 7 cities in West Sumatra Province assuming ceteris paribus.

There is a positive influence indicating that the poverty level that occurs in 12 districts and 7 cities in West Sumatra Province is influenced by the open unemployment rate. In other words, the poverty rate in 12 districts and 7 cities in West Sumatra Province is also influenced by the low level of open unemployment. This is in accordance with the theory put forward by (Hanratty, 2017) which states that there is a very close relationship between the high level of unemployment and poverty. For most people who do not have permanent jobs or only part-time, they are always among very poor groups of people.

### **Conclusions**

Based on the results of processed data obtained using tools evIEWS8, the following conclusions are obtained, The level of education has no significant negative effect on poverty rates in 12 districts and 7

cities in West Sumatra Province during the period 2010 to 2016, Economic growth has a negative and significant effect on poverty rates in 12 districts and 7 cities in West Sumatra Province during the period 2010 to 2016, Open unemployment has a positive and significant effect on poverty rates in 12 districts and 7 cities in West Sumatra Province during the period 2010 to 2016, Test of value shows a result of 0.879113, meaning that variations in poverty rates in 12 districts and 7 cities in West Sumatra Province can be explained by variables of education level, economic growth and open unemployment rate of 88 percent (rounding results), while the rest 12 percent is influenced by other variables besides the above variables.

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