

# Analysis of Factors Affecting Education Inequality in West Sumatera

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## ABSTRACT

This research's purposes are to analyze: 1) The influence of government spending expenditure in the education sector on educational inequality. 2) The effect of gender gap on educational inequality. 3) The effect of poverty levels on educational inequality. 4) The effect of life expectancy on educational inequality. This type of research is quantitative research using associative methods. The research objects are regencies / cities in West Sumatera Province, namely 12 districts and 7 cities. The data analysis technique was testing the hypothesis testing panel data regression analysis with the t test. From the findings, it can be seen that: 1) the government spending expenditure in the education sector has a negative effect significantly in educational inequality. 2) Gender gap has a significant positive effect on educational inequality. 3) The poverty level has a significant positive effect on educational inequality. 4) Life expectancy has a significant positive effect on educational inequality.

**Keywords:** *education inequality, government expenditure, gender gap, poverty, life expectancy.*

## 1. INTRODUCTION

Sustainable development with the ultimate goal of improving community welfare. Development is a combination of a fundamental change process of all social systems, such as politics, economy, infrastructure and others, to improve the quality of human life. The essence of economic development is to prosper and prosper the community. For that we need a structured and mature planning in order to make the society of a country with a society that is prosperous, just and prosperous.

Human capital is an important factor in economic development. Because the role of human capital is very important, it is necessary to increase the productivity and quality of human capital. One of the efforts that can be made to increase the productivity and quality of human capital is through education. Education is one way to guarantee and improve the quality of human life economically and socially, which is also a way to address gaps in the effort to achieve equality and create a prosperous life.

Building human capital is influenced by many factors, one of which is improving the quality of education. If the education obtained is not optimal, quality human capital will be difficult to obtain. Many factors can cause education cannot be implemented optimally. This will lead to inequality in education. Many factors influence the occurrence of inequality in education, one of which is the government budget for

the education sector. According to Irianto (2013: 83), sources of education funding can be categorized into two, namely from the government and the community. Government parties can be grouped into central government and local government. While the community can be classified as the general public and the parents of students.

Apart from government expenditure in the education sector, the gender gap can also affect education inequality. According to Todaro (2011: 462), the gender gap in education is the difference in access to and completion of education between men and women. Gender disparities in education are very common in least developed countries, where women's literacy rates are less than half that of boys. School completion also shows gender inequality, and is particularly pronounced in rural areas.

The level of poverty also affects the occurrence of educational inequality. People who can be said to be poor will find it difficult to get proper education. Because what is said by poverty is a person's inability to meet their daily needs (BPS, 2019). It will be difficult for the poor to get a proper education, because their daily needs are very difficult to fulfill. Educational development is a form of productive and quality human capital development. Quality human beings will be able to create conducive development. If the determining factors for improving the quality of education do not work properly, then there will be an imbalance in education.

According to Todaro (2007: 467) the level of education that a person obtains, although it is influenced by many non-market factors, government and supply such as commodities and other services on the government side, the two main factors that affect the desired level of education are 1) Prospects for more educated students to generate income greater through modern sector work in the future or personal or individual benefits (private benefits), family from education, 2) education costs, directly or indirectly that must be borne by a student or his family.

The purpose of this research is to determine and find out: 1) The effect of government spending in the education sector on educational inequality. 2) The effect of gender gap on educational inequality. 3) The effect of poverty levels on educational inequality. 4) The effect of life expectancy on educational inequality

Education is the main indicator in human resource development (HR) which has implications for the quality of human resources. Education has a strategic position in regional and national development. Education is also an indicator of the progress of a nation because it has an impact on improving the quality of life and welfare of society to create a prosperous and prosperous society (Priyadi, 2015).

Todaro and Smith stated that the source of inequality comes not only from income distribution but also from education. Therefore education is a fundamental development goal (Tambuna, 2013). Education is also an important factor in investing in human resources. Therefore, the government seeks to achieve a more balanced development through government decentralization coupled with direct cooperation between the central and regional governments (Vickerman, 2015).

Sukirno (2004) explains that education is a very useful investment for economic development. On the one hand, it takes time and money to get education. In the next period after education has been obtained, society and individuals will benefit. Individuals who receive higher education tend to earn higher incomes than those without education. The higher the education, the higher the income. Improvements in education provide several benefits in reducing poverty levels and at the same time accelerating economic growth (Sukirno, 2004).

Todaro (2011: 476) says, if poor people cannot take advantage of the opportunity to attend secondary and higher education for financial reasons or other reasons, the education system actually only perpetuates and even increases inequality within a generation and between generations in developing countries.

Thomas (2001: 6) declared that inequality can be measured using the Lorenz curve. The Gini index can also be used to measure educational inequality. The Gini index for education ranges from the number 0 indicating equality and if it approaches the number 1, then inequality can be said to be high.

In other words the education gap is a mismatch between what is expected and the actual reality, thus making educational development uneven. many factors in it can increase this disparity in education

Inequality in education is a condition of the inequality of education graduates from the population in an area. The Gini Index for Education has coefficients ranging from 0 to 1. The lower the coefficient index, the better the level of equality of educational attainment, and the higher the coefficient index, indicating the occurrence of educational inequality or inequality.

Inequality of educational attainment is a condition where there is an unequal distribution pattern of educational attainment. According to Thomas, et. al (2001), an indicator to see the inequality of educational attainment among individuals in a region is the Gini Education Coefficient (GEC) with the following formula:

$$KGP = \left(\frac{1}{\mu}\right) \sum_{i=2}^n \sum_{j=1}^{i-1} \rho_i |y_i - y_j| p_j$$

Where :

KGP = Gini coefficient of education

$\mu$  = Mean schooling years of the population

$Y_i$  and  $Y_j$  = Year of school achievement

The category of inequality is in accordance with the Gini Education Index (Todaro & Smith, 2006), namely (1) an index of 0.71 and above is a region with very high inequality, (2) an index of 0.5-0.70 is a region with high inequality, (3) an index of 0.36-0.49 is a region with moderate food inequality, (4) an index of 0.21-0.35 is a region with low inequality, and (5) an index of 0.20 and below is a region with very low inequality (Sholikhah et al., 2014).

The determinant of inequality in educational attainment can be viewed from the demand side of education (Irianto, 2011). According to Hector Corea in Irianto (2011), demand for education describes a person's need to attend school or be given certain lessons. There are several factors that influence the demand for education, among others: culture, politics and socio-economy. In line with that, Tesfaye in Kumbadigdo (2010) suggested that the government make policies related to the demand and supply of education in order to achieve equitable education.

Factors that influence a person's demand for education are related to household characteristics such as the latest education of parents, characteristics of children, and quality of education

**2. METHOD**

This type of research is quantitative research using associative methods. The research objects were districts / cities in the West Sumatra, namely 12 districts and 7 cities. The data analysis technique was testing the hypothesis testing panel data regression analysis with the t test.

**3. RESULTS AND DISCUSSION**

Based on the Chow Test, Hausman Test, and Lagrange Multiplier Test, it is known that the best model used in panel data regression analysis is the random effect method. The following are the results of panel data regression analysis.

**3.1 Chow Test**

Based on the results of data analysis for the chow test, the cross section F value is 10.09. The probability value is smaller than alpha (0.00 < 0.05), so the fixed effect method is better than the common effect. Thus, the best model for data analysis is a model with the fixed effect method.

**3.2 Hausman Test**

The Hausman Test is a test used to determine the best method of fixed effect or random effect. Based on the results of data analysis for the Hausman test, it is known that the chi-square statistic value is 4.36 with a probability value of 0.35. This probability value is greater than the significance level used (0.35 > 0.05) so that the random effect method is better than the fixed effect. This means that the best method to use is the random effect. Based on the results of the chow test and the hausman test, different results were obtained where the chow test recommended a fixed effect while the hausman test recommended a random effect, so it was necessary to do a langrange multiplier test.

**3.2.1 Lagrange Multiplier Test**

The Lagrange Multiplier test is an analysis carried out with the aim of determining the best method in panel data regression, whether to use common effects or random effects. Results of data analysis for the Lagrange Multiplier test, it is known that the Breusch-Pagan Cross-section value is 72.41, so that the random effect method is better than the fixed effect. Thus, the best method that can be used in conducting data analysis is the random effect.

**3.2.2 Panel Data Regression Estimation Results**

The results of panel data regression data analysis are presented in the following table:

**Table 1.** Results of Panel Data Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	2.092527	0.614660	3.404364	0.0010
GE	-9.49E-05	4.72E-05	2.010174	0.0474
GG	-0.012435	0.006031	2.061701	0.0421
P	0.006559	0.002594	2.528715	0.0132
L	-0.008215	0.002501	3.284477	0.0015

Source : Data Processed

From the results of panel data regression analysis, the regression equation can be written as follows:

$$KGP_{it} = \alpha_{it} + b_1GE_{it} + b_2GG_{it} + b_3P_{it} + b_4L_{it} + e_{it}$$

$$KGP = 2,09 - 0,00009GE - 0,012GG + 0,007P - 0,008L$$

From the results of data analysis, it is known that the R-squared value is 0.4835. This shows the magnitude of the influence of government spending in the education sector, gender gap, poverty level, and life expectancy on education inequality is 48.35% and the remaining 51.65% is influenced by other variables.

The regression coefficient for the variable government expenditure (GE) is 0.00009 which is negative, indicating that there is a negative effect of government spending in the education sector on educational inequality. This means that if government spending in the education sector increases by one billion, it will reduce the level of education inequality by 0.00009, assuming that other variables do not change (ceteris paribus).

The regression coefficient for the gender gap variable (GG) is 0.012 which is negative, indicating that there is a negative effect of gender gap on educational inequality. This means that if the gender gap increases by one percent, it will be able to reduce education inequality by 0.012, assuming that other variables do not change (ceteris paribus).

The regression coefficient of the poverty level variable (P) is 0.007 which is positive, indicating a positive impact on the level of a lower educational inequality. This means that if the poverty rate increases by one percent, it will increase education

inequality by 0.007 with the assumption that other variables do not change (*ceteris paribus*).

The regression coefficient of the life expectancy variable (L) is 0.008 which is negative, indicating a negative influence on life expectancy on educational inequality. This means that if the life expectancy increases by one percent, it will be able to reduce educational inequality by 0.008 percent, assuming that other variables do not change (*ceteris paribus*).

### **3.3 Discussion**

#### *3.3.1 The Effect of Government Expenditure in the Education Sector on Educational Inequality*

From the results of testing the first hypothesis, it is known that government spending in the education sector has a significant negative effect on educational inequality in districts/ cities in West Sumatra Province. The higher government spending in the education sector in West Sumatra Province, of course, will reduce the level of educational inequality. The government's role in improving the quality of education can be seen from the budget issued by the government for education. Todaro & Smith (2011: 448) said that the intervention that can be done by the government is through government budget policies obtained from taxes by increasing the income of poor people directly or indirectly, for example expanding access to basic education. In research conducted by Bustomi (2012), it is concluded that the effect of government spending on education inequality has a negative and significant effect. It can be concluded that the greater the government spending in the education sector, the less education inequality in a region is.

#### *3.3.2 The Effect of Gender Gap with Educational Inequality*

Based on the results of the second hypothesis, the gender gap has a significant negative effect on educational inequality in West Sumatra. The higher the gender gap in districts / cities in West Sumatra Province, the lower level of educational inequality. Thomas, et al (2000) constructed a study in 85 countries, which showed that the gender gap related to educational inequality.

Digdowniseiso (2010) states that literacy rates in each gender have a significant and positive effect on educational inequality. With this, it can be concluded that the existence of a gender gap affects the level of education inequality.

#### *3.3.3 The Effect of Poverty Levels on Educational Inequality*

From the results of testing the third hypothesis, the level of poverty has a significant negative effect on educational inequality in West Sumatra Province. The effect of poverty on education has a profound impact. Poverty that occurs in society makes it difficult for people who are at the poverty line to get a proper education. Many poor children prefer to help their parents to earn a living, thus neglecting the importance of getting an education.

Todaro (2011: 476), states that poor people cannot take advantage of the opportunity to attend secondary and higher education for financial reasons or other reasons, so the education system actually perpetuates and even increases inequality within a generation and between generations in developing countries. In conclusion, the level of poverty will give the high and low in levels of education inequality.

#### *3.3.4 The Effect of Life Expectancy on Educational Inequality*

From the results of testing the fourth hypothesis, it is known that life expectancy has a significant negative effect on educational inequality in districts / cities in West Sumatra Province. The higher the life expectancy, the lower the level of inequality in education in districts / cities in West Sumatra Province.

Shaw, et al (2005: 772-774) in their research on factors affecting life expectancy in 29 of 30 OECD (*Organization for Economic Co-operation and Development*) countries, said that population life expectancy is a function of environmental measures (such as education, wealth, infrastructure), measures of lifestyle (such as smoking and alcohol consumption), and consumption measures for health services (expenditures on medical and drug costs).

## **4. CONCLUSIONS**

Based on the research results, it is found that government spending in the education sector has a significant negative effect on educational inequality in districts / cities in West Sumatra Province. The higher government spending in the education sector in regencies / cities in West Sumatra Province, of course, will reduce the level of education inequality.

This study also found a gender gap that had a significant negative effect on education inequality in West Sumatra Province. The higher the gender gap in districts/ cities in West Sumatra Province. The gender

gap is the gap between men and women in obtaining education

Furthermore, it was found that the poverty rate has a significant negative effect on educational inequality in West Sumatra Province. The higher the poverty level, the higher the educational inequality in West Sumatra Province. The effect of poverty on education has a profound impact. Poverty that occurs in society makes it difficult for people who are at the poverty line to get a proper education.

This study also found that life expectancy has a significant negative effect on educational inequality in West Sumatra Province. The higher the life expectancy, the lower the level of inequality in education in West Sumatra Province.

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