

# The Influence of Economic Growth Per Capita and the Average Length of Schooling on the Human Development Index in West Java

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## ABSTRACT

Although the province of West Java has a relatively high GRDP, it has not fully paid attention to the development of human resources. This is indicated by the low average length of schooling in each district / city. There are still nineteen districts / cities in the province of West Java that have an average length of schooling under 9 years. Both of these, both GRDP and school averages, are assumed to have implications for the HDI. To determine the interrelationship between these variables, a study was conducted in West Java. The study was conducted to determine the effect of per capita GRDP level and school length average number on the Human Development Index. To achieve this goal, an analysis of GRDP and HDI is used with the equations of Egbulonu and Nwokoro. The results  $GRDP = -2.825150 + 0.369888AGRO + 0.917197IND + 0.079170MYS$  and  $HDI = -101.0269 + 9.76691PDRB + 0.728485MYS$

These results show  $\alpha$  of -101.0269, which means that if the independent variable GDP per capita and the average length of school time (MYS) is zero, the dependent variable Human Development Index (HDI) will be negative -101.0269. This means that without the GRDP per capita (community income) and the average length of school in the community, human development will not be possible. Furthermore, the PDRB coefficient is 9.766914, which means that if there is a change in GDP per capita increase of 1% (assuming other variables are constant), the Human Development Index (HDI) figure will increase by 9,766914 index points.

**Keywords:** human resource development, GRDP, average length of schooling, HDI

## INTRODUCTION

Indicators of the success of development in the field of education and health can be seen from the figures of the Human Development Index (HDI). The Human Development Index is a composite index that focuses on three basic dimensions of human development: living a long and healthy life, the ability to study, and the ability to achieve a decent standard of living<sup>1</sup>. National HDI is 69.55 while each province ranges from: 57.25-78.99<sup>2</sup>. The highest HDI is the Jakarta Special Capital Region (DKI) province with the lowest and Papua Province, while the West Java province is 69.55. This figure shows the conditions that are still lagging behind because the province has a relatively high Gross Regional Domestic Product (GRDP). The value of GRDP at the

2010 constant price of West Java Province in 2015 was Rp. 25,840,540.00. Since West Java province has the largest population among other provinces in Indonesia, the development of its human resources requires great attention.

One of the problems in the development of human resources in West Java is the low average length of schooling for residents of West Java. During the period of 2004 to 2015 the average length of schooling in West Java was still under 9 years of age, which had not fulfilled the 9-year compulsory education requirement set by the government<sup>2</sup>. Of the 26 districts and cities, only 26.92% or seven districts / cities whose average length of schooling is over 9 years: Cimahi is 10.78 years, Depok is 10.71 years, Bekasi is 10.71 years, Bandung

is 10.52 years, Bogor is 10.20 years old, Cirebon is 9.76 years, and Sukabumi is 9.08 years. Meanwhile, 73.07% or nineteen other districts and cities still have an average length of schooling under 9 years. Therefore, it is assumed that regions with high HDI rates have a high average number of years of schooling. In other words, economic growth is closely related to the development of the quality of human resources in an area.

Economic growth is one indicator of the success of economic development of a country. In general, economic growth is defined as an increase in the ability of the economy to produce goods and services<sup>3</sup>. Economic growth shows the extent to which economic activity generates additional income in a given period<sup>4</sup>. With economic growth, it is expected that people's income, as owners of factors of production, will increase. Economic growth is defined as an increase in Gross National Product (GNP) which is greater or smaller than the level of population growth and changes in economic structure<sup>5</sup>. Developing a theory of economic growth means giving immaterial weight such as enjoyment, satisfaction, happiness, a sense of security and peace to the community<sup>6</sup>. An economy can be considered as developing if long-term per capita income tends to increase<sup>7</sup>. In other words, economic growth refers more to quantitative changes and can be measured based on data on Gross Domestic Product (GDP) or income, or the final market value of the final goods and services produced from an economy over a period of time. Economic growth in this period can be viewed from the level of community welfare. The level of welfare of the population can be measured by an increase in GDP per capita. The level of welfare of the population will be achieved if the per capita GRDP increases faster than population growth<sup>8</sup>. The purpose of this study was to determine the effect of per capita GRDP level and school length average number on the Human Development Index in West Java.

## MATERIALS AND METHOD

The analysis was carried out using regression techniques using the Index of Agricultural Output, the index of the industrial sector production, the interest rate, and the exchange rate level, as the independent variable, and the Real GDP number as the dependent variable<sup>9</sup>. Furthermore, an empirical study of the two-way relationship between human development and regional economic performance in Indonesia is carried

out<sup>10</sup>. Based on the two techniques, the following equation is used:

1) To calculate GRDP, the equation is:

$$GRDP_t = \alpha_0 + \alpha_1(AGRO_t) + \alpha_2(IND_t) + \alpha_3(IPM_t) + e_t \dots\dots\dots (1)$$

2) To calculate the HDI, the equation is:

$$HDI_t = \beta_0 + \beta_1(GRDP_t) + \beta_2(MYS_t) + v_t \dots\dots\dots (2)$$

GRDP is regional per capita Gross Regional Domestic Product to year t, IND<sub>t</sub> is the Value of Industry Contribution in regional GDP to year to year in Rupiah, AGRO<sub>t</sub> is the Value of Agricultural Contribution in regional GDP to year to year in Rupiah, MYS<sub>t</sub> is Average the average length of regional school to year t, HDI<sub>t</sub> is the Human Development Index area to year t,  $\alpha_i$  and  $\beta_i$  are the parameters of regression  $i = 1, 2, 3, \dots, n$ ,  $e_{it}$  and  $v_{it}$  are errors / confounding variable, whereas  $i =$  area  $i$  ( $i = 1, 2, 3, \dots, 26$ ) and  $t =$  year to  $t$  ( $t = 2010-2015$ ). In using equations (1) and (2) the ratio of oil and gas to GRDP is not taken into account, taking into account the contribution of the agricultural sector in GRDP and the value of the contribution of the industrial sector in GRDP. While for the average variable the length of women's school is replaced by the average length of school variables in each district / city in West Java. In the calculation of the HDI, the education level component is measured from two indicators, namely: literacy rate (Lit) and the average length of schooling (Mean Years of Schooling). Literacy rates are the percentage of educators aged 15 years and over who can read and write in Latin letters or other letters. Average length of school, which is the average number of years spent by people aged 15 years and over at all levels of formal education that has been undertaken or is undergoing. This indicator is calculated from the highest education variable that is completed and the level of education being completed and the level of education that is being occupied. The average length of school (MYS) is analyzed using the equation:

$$MYS = \text{highest conversion year} + \text{class ever occupied} - 1 \dots\dots\dots (3)$$

## RESULTS AND DISCUSSION

The lowest PDRB value of the regency / city of West Java province tends to have the value of the contribution of the agricultural sector and the value of the contribution of the small industrial sector, shown in Figure 1 below.

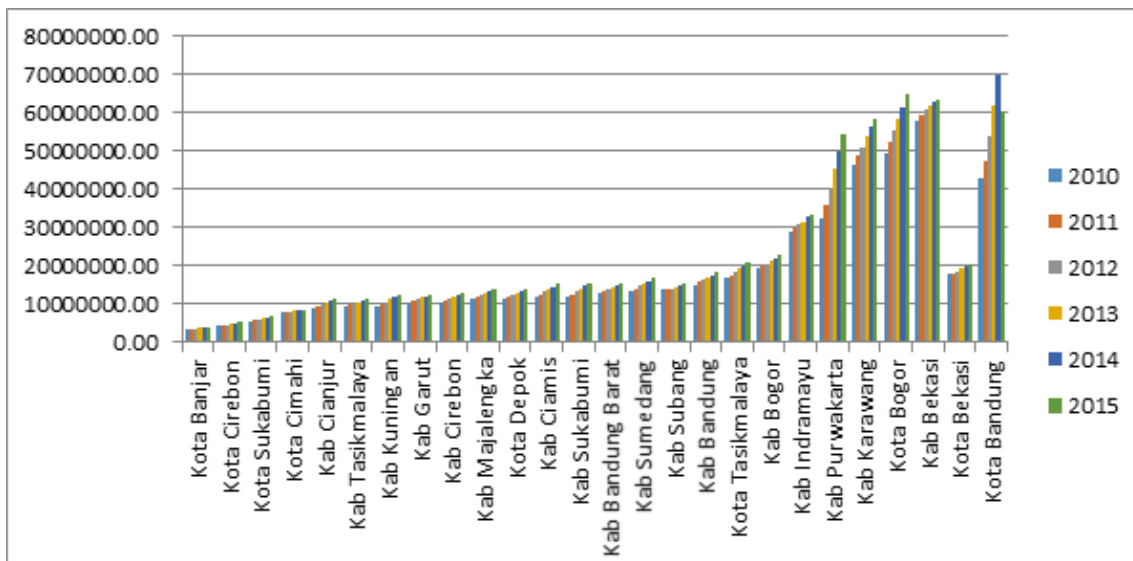


Figure 1. Development of GRDP per capita Regency / City in West Java

On the basis of Constant Prices in 2010 (Rupiah)

Based on Figure 1 above the districts/cities that have the highest rate of per capita GRDP are Bekasi District of Rp. 61,149,708.00. If Bekasi Regency is connected with the influence of the value of the industrial sector’s contribution to GDP per capita, Bekasi Regency is proven to be the Regency with the largest contribution of the

industrial sector in the GRDP. While the regencies/cities that have the smallest average GDP per capita figure are Banjar City, which is Rp. 3,565,733. From the figure, it appears that there is an imbalance and inequality in the level of GDP per capita in districts / cities in West Java. Furthermore, the development of the average length of schooling for each district / city in West Java in the period 2010-2015 is shown in Figure 2 below.

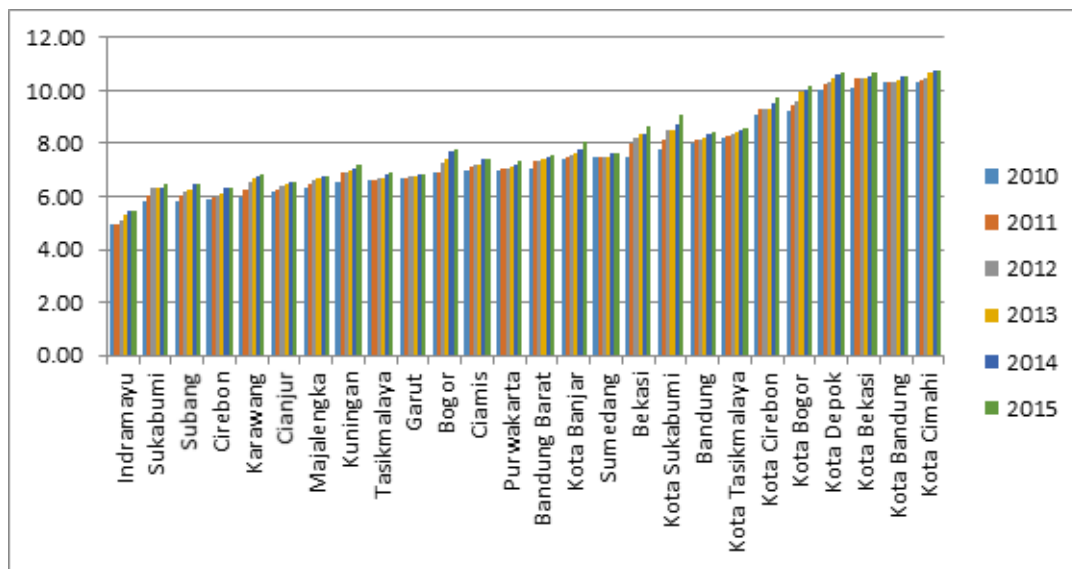


Figure 2. Development of the average length of school in the province of West Java

Based on Figure 1 above, it can be seen that out of 26 regencies / cities there were only 6 (23.07%) districts/ cities with an average of 9 years of schooling, namely Cirebon City (9.39 years), Depok City (10.39 years)

, Cimahi City (10.56 years), Bekasi City (10.45%), Bandung City (10.40%), and Bogor Regency (9.74 years). Meanwhile, 20 (76.93%) other districts / cities still have an average length of schooling under 9 years.

Cimahi City is an area that has the highest average school length of 10.56 years and Indramayu Regency is the region with the lowest average school length of 5.19 years. But the average number of years of schooling in districts / cities in West Java Province from 2010 to 2015 has never reached 12 years, this shows that the province of West Java is still left behind in terms of improving the quality of public education.

Description of the variable Value of Agricultural Contribution in GRDP, Value of Industry Contribution in GRDP, Average value for each population aged more than 15 years in formal education, Human Development Index, and economic growth (GDP per capita). The results of the analysis of each variable based on the minimum value, maximum value, mean and standard deviation are shown in Table 1 below.

**Table 1. Results of descriptive analysis of each variable**

	N	Minimum	Maximum	Mean	Std. Deviation
AGRO	156	32437.00	11197706.63	3484002.07	2966092.055
IND	156	242072.07	161947397.05	17826066.2	31752678.71
PDRB	156	3166183	69895470.78	21126395.2	17363408.02
MYS	156	4.93	10.78	7.7740	1.53229
IPM	156	58.58	79.67	67.8244	5.21767
Valid N (listwise)	156				

Based on Table 1 above, It can be found that the minimum value, maximum value, average and standard deviation of each research variable from 2010 to 2015. Variables in agricultural contribution in GRDP have a minimum value of Rp. 32,437,000,000; maximum value of Rp. 11,197,706,630,000; an average of Rp3,484,002,070,000 and a standard deviation of Rp. 9,966,092,050,000. Variable of industrial contribution in GRDP has a minimum value of Rp242,072,070,000; maximum value of Rp161,947,397,050,000; an average of Rp. 17,826,066,200,000, - and a standard deviation of Rp. 31,752,678,710,000. - The average value variable

for each population over the age of 15 years in taking formal education (years) has a minimum value of 4.93 years; maximum value of 10.78 years; an average of 7.77 years and a standard deviation of 1.53 years. The Human Development Index variable has a minimum value of 58.58; maximum value of 79.67; an average of 67.82 and a standard deviation of 5.22, and the variable of economic growth (GDP per capita) has a minimum value of Rp3,166,183, -; maximum value of Rp69,895,470.78; an average of Rp21,126,395.20 and a standard deviation of Rp. 17,363,408.02. Furthermore, to find out the GRDP in West Java province, equation (1) is used, the results of the analysis are shown in Table 2 below.

**Table 2. The results of the analysis of partial influence on GRDP**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.825150	1.302437	-2.169127	0.0318
AGRO?	0.369888	0.110378	3.351095	0.0010
IND?	0.917197	0.061589	14.89216	0.0000
MYS?	0.079170	0.023991	3.299994	0.0012

Based on Table 2 above, the panel data regression equation with the Fixed Effect model obtained GRDP as follows:

$$\text{GRDP} = -2.825150 + 0.369888 \text{ AGRO} + 0.917197 \text{ IND} + 0.079170 \text{ MYS}$$

Furthermore, the results of the HDI analysis using equation (2) are shown in Table 3 below.

**Table 3. The results of the analysis of partial influence on the HDI**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-101.0269	6.348597	-15.91327	0.0000
PDRB?	9.766914	0.482967	20.22274	0.0000
MYS?	0.728485	0.256516	2.839922	0.0052

Based on the data in Table 3, the form of panel data regression equation with the Fixed Effect model is as follows:

$$HDI = -101.0269 + 9.766914PDRB + 0.728485MYS$$

The tcount value of the GDP variable is 20.22274, with p-value of 0.0000 and the direction of its influence is positive, so that it can be concluded that partially the GDP variable has a significant effect on the HDI with a positive direction of influence. Furthermore, the value of t count MYS variable of 2.839922, with a p-value of 0.0052 and the direction of its influence is positive, so it can be concluded that partially the MYS variable has a significant effect on the HDI with a positive direction of influence.

The results of the analysis using equation (2) show  $\alpha$  equal to -101.0269. If the independent variable per capita GRDP and Average School Length (MYS) is zero, the dependent variable Human Development Index (HDI) will be negative -101.0269. This means that without the GRDP per capita (community income) and the average length of school in the community, human development will not be possible. PDRB per capita variable and average length of school have a significant effect on the level of HDI. GRDP coefficient is 9.766914 which means that if there is a change in GDP per capita increase of 1% (assuming other variables are constant), then the number of Human Development Index (HDI) will increase by 9,766914 index points. This is consistent with the results of Brata's research (2002) that the increase in GDP per capita will significantly increase the Human Development Index. Furthermore, the MYS coefficient is 0.728485 which means that if there is a change in the

increase in Average School Length (MYS) by 1 year (assuming other variables are constant), then the Human Development Index (HDI) number will increase by 0.728485 index points. This is consistent with the results of the study that the increase in the average length of female schooling by one year will increase the Human Development Index number by 17.9 index points<sup>10</sup>. The effect of increasing the average length of schooling for the Human Development Index is greater than the increase in the average length of schooling in general (without gender classification).

### CONCLUSION

Based on the results of research and discussion on Causality of Economic Growth and the Human Development Index in West Java for the period 2010 to 2015, the researchers concluded that Economic Growth (GRDP per capita) and Average School Length have positive and significant effects on the Human Development Index in West Java Province in 2010 to 2015. Referring to the results of the study, the West Java regional government needs to guarantee the 12-year compulsory education funding in order to encourage an increase in the average length of school population in the province of West Java.

**Conflict of Interest:** Nil

**Source of Funding:** Self

**Ethical Clearance:** IJRISE Journal Reviewer Committee

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