# THE IMPACT OF MANPOWER EDUCATION AND GOVERNMENT EXPENDITURE ON EDUCATION SECTOR ON ECONOMIC GROWTH OF LABUHANBATU REGENCY

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#### Abstract

This study is based on the fact that education contributes greatly to economic growth through the improvement of knowledge, skills, attitudes and productivity, so that education is expected to produce quality workforce. This study aims to determine how the impact of education level achieved by the workforce. The level of education achieved by the workforce is distinguished between primary, secondary, and tertiary education. It also aims to find out how the impact of government spending on government education sector on economic growth in Labuhanbatu District during the period of 2002-2015. Data analysis method used in this research is descriptive method, completed by analysis with econometric data analysis with multiple regression model based on production function Y = f (K, L). Regression analysis was performed using Ordinary Least Square (OLS) method. The model used is the model of endogenous economic growth (new growth model). This study uses secondary data obtained from the publication of survey results related to the Statistic Indonesia with time series 2002-2015. Data analysis using multiple linear regression with the help of statistical test of E-view 6.0 application program. The results of this study indicate that all the independent variables have a positive and significant impact on economic growth in Labuhanbatu regency. Estimation results for economic growth obtained R2 of 0.994414. This means that as much as 99.4414 percent of economic growth variables can be explained by the variables of primary school educated workers, high school educated workers, college educated labor, human development index, and government spending in the education sector while the remaining 0, 5586 percent is explained by other variables outside the model. In the end, the variables of elementary school educated labor, high school educated labor, college educated labor, human development index, and government expenditure in the education sector are expected to increase economic activity in order to achieve economic growth and improve the welfare of the community.

*Key words: Economic Growth, Education Level, Human Development Index, Government Expenditure on Education Sector* 

#### INTRODUCTION

Subscription of the five functions of education is a technical-economic function both at the individual level and at the global level. The technical-economic function refers to the contribution of education to development. For example education can help a person to gain the knowledge and skills necessary to live and compete in a competitive economy. The more educated a person is, the better his income level. This is possible because educated people are more productive when compared to those who are less educated or even those who are not. The productivity of a person is due to the technical skills obtained from education. Education has an important role in economic growth because it is an investment to improve human resource skills, strengthen physical capital and the ability to adapt technical knowledge applied to industrial machines, so that education can increase labor productivity.

Economic growth and human development are linked and contribute to each other. UNDP states that human development can be sustainable if it is supported by economic growth. Even though the two of them do not have a relationship automatically, if the two things are united in one unidirectional development policy, it will create a force that can encourage each other. So that economic growth will be very effective in improving human development.

Human development is more than just economic growth, more than just increasing income and more than just a process of commodity production and capital accumulation. The reasons why human development needs attention are: first, many developing countries including Indonesia have succeeded in achieving economic growth, but have failed to reduce socio-economic disparities and poverty. Second, many developed countries that have high income levels have not succeeded in reducing social problems, such as: drug abuse, AIDS, alcohol, homelessness, and domestic violence. Third, some low-income countries are able to use wisely all their resources to develop basic human abilities.

To see the success of human development and welfare, UNDP has published an indicator, namely the human development index (HDI) to measure the success of development and the welfare of a country. The Human Development Index (HDI) is a measure of the welfare rate of a country or region based on three dimensions, namely: life expectancy at birth, literacy rate and average length of schooling (mean years of schooling), and purchasing power parity. The life expectancy indicator measures health, the adult literacy rate indicator and average length of schooling measure education and finally the purchasing power indicator measures the standard of living. These three indicators influence each other, besides that they can be influenced by other factors such as the availability of job opportunities which are determined by economic growth, infrastructure, and government policies so that the human development index (HDI) will increase if these three elements can be increased and the value A high human development index (HDI) indicates the success of the economic development of a region or country.

The government as the implementer of development needs quality human beings as the basic capital for development. Humans in their roles are the subjects and objects of development, which means that humans are not only actors of development but also targets of development. In this case, various facilities and infrastructure are needed to encourage the role of humans in development. Therefore, investment is needed to be able to create productive human resources.

Investment in human capital is expected to have a positive effect on economic performance, one of which can be observed from the aspects of education, health and poverty levels. This investment in human capital includes the development of human resources, requiring well-targeted government policies in encouraging the improvement of the quality of human resources. According to Mankiw (2007) human resource development can be done by improving the quality of human capital.

When viewed from the record of economic growth, the rate of economic growth in Labuhanbatu Regency in the last few years, shows a decline in growth that continues to be negative as shown in the following Figure.



Figure 1: Graph of the Economic Growth Rate of Labuhanbatu Regency for the Period of 2011-2015

From the Figure above, it can be seen that the economic growth rate of Labuhanbatu Regency at constant prices in 2015 was 5.04 percent. This shows a decrease of 0.18 percent when compared to the economic growth rate of the year before 2014, which was 5.22 percent. In general, the economy in Labuhanbatu Regency in 2015 was better and relatively stable than the previous year, although there was quite high inflation due to the increase in fuel oil, but it did not really affect the economic performance in 2015. The inflation that occurred in 2015 resulted in the occurrence of the decline in the prices of superior commodities in Labuhanbatu Regency, such as palm oil, rubber, and cocoa, which are the main sources of income for the people of Labuhanbatu Regency.

Meanwhile, the Human Development Index (HDI) is one of the basic measures and benchmarks used to determine the quality condition of human resources in an area. HDI is influenced by three variables, namely education, health and economy. The development of HDI in Labuhanbatu Regency can be seen in the following Figure.



Figure 2: Labuhanbatu Regency Human Development Index Graph for the 2011-2015 Period

Based on the Figure above, the development of the HDI level of Labuhanbatu Regency during the 2011-2015 period gradually increased in line with the increase in economic growth in the same period. Where, in 2000 this condition showed that the HDI and economic growth had a mutually influencing relationship



Figure 3: Graph of Labuhanbatu Regency Government Expenditure in the Education Sector for the Period of 2011-2015

From the picture above explains that the development of Labuhanbatu Regency government spending in the education sector from 2011 to 2015 continues to experience growth, where in 2011 the Labuhanbatu Regency government allocated an education fund of Rp. 636.27 billion rupiah. Then it increased again in 2012 to Rp. 710.27 billion. Furthermore, in 2013 it increased again to Rp. 797.94 billion rupiah until finally the education allocation fund for Labuhanbatu Regency government is very serious in improving the quality of human resources through the education sector.

From the data and description above, it can be seen that a clear relationship between education as a process of forming human capital or human capital is an important determinant of growth on the one hand, while on the other hand there is also the fact that an increase in government allocations in the education sector is not accompanied by economic growth.

## **RESEARCH METHOD**

This research was conducted in Labuhanbatu Regency, one of the districts in North Sumatera Province and discusses the Impact of Labor Education Level and Government Expenditure in the Education Sector on Economic Growth in Labuhanbatu Regency. The economic growth in question is the growth in the GRDP value of Labuhanbatu Regency. As additional material, this study also analyzes the impact of the Labuhanbatu Regency Human Development Index (HDI) on the economic growth of Labuhanabtu Regency.

In this study, the mechanism of the impact of the education level of the workforce on economic growth based on the highest educational background achieved by workers in Labuhanbatu Regency were selected into three groups, namely: workers with a background in primary school education (PSE), workers with a background secondary school education (SSE), a workforce with a college education background (CEB). Meanwhile, the research was conducted from January to March 2017.

The data analysis method used in this study will use a descriptive method, complemented by econometric analysis with multiple regression models based on the production function Y = f(K, L). Regression analysis was performed using the ordinary least squares (OLS) method, using the natural logarithmic function (double log). To facilitate data processing, the analysis tool used in processing the data is Eviews version 6.0. The multiple regression model is basically a study of the dependence of the dependent variable (dependent) with one or more independent variables (explanatory / independent variables), with the aim of estimating and / or predicting the population mean or average value of the dependent variable based on known independent variables. (Gujarati, 2007: 180).

The model specification used in this study is the development of the Neoclassical Growth Model, with the following production functions:

 $Y = Ae^{\mu t} \cdot K^{\alpha} \cdot L^{1-\alpha} \dots$ 

Functions A and B are developed into:

*Y* = *f*(*PSE*, *SSE*, *CEB*, *HDI*, *GEES*) .....

From equations (3.1) and (3.2), it is obtained:

 $Y = A PSE^{\beta 1}SSE^{\beta 2}CEB^{\beta 3}HDI^{\beta 4}GEES^{5}$ .....

So to obtain linearity from equation (3.3), the equation is logarithmic, in order to obtain:

# $LnPDRB = \beta_0 + \beta_1 LnPSE + \beta_2 LnSSE + \beta_3 LnCEB + \beta_4 LnHDI + \beta_5 LnGEES + e$

In this study, the mechanism of the impact of the education level of the workforce on economic growth based on the highest educational background achieved by workers in Labuhanbatu Regency were selected into three groups, namely: workers with a background in primary school education (PSE), workers with a background secondary school education (SSE), a workforce with a college education background (CEB). Meanwhile, the research was conducted from January to March 2017.

## **RESULT AND DISCUSSION**

## Labuhanbatu Regency Economic Growth

No	Year	Economic Growth		
		ADHK 2010 GRDP (Billion Rupiah)	Growth rate (%)	
1.	2002	9.4000,00	6,16	
2.	2003	10.209,00	8,61	
3.	2004	10.753,00	5,33	
4.	2005	11.243,00	4,56	
5.	2006	11.748,10	4,49	
6.	2007	12.374,00	5,33	
7.	2008	13.193,00	6,62	
8.	2009	13.945,00	5,70	
9.	2010	14.654,67	5,09	
10.	2011	15.409,02	5,15	
11.	2012	16.289,98	5,72	
12.	2013	17.250,00	5,89	
13.	2014	18.164,10	5,30	
14.	2015	19.079.930	5,04	

**Table 1**: GRDP of Labuhanbatu Regency based on 2010 Kosntan Prices for the Period2002-2015. (In billion Rupiah)

Source: Statistics Indonesia Labuhanbatu Regency in Figures 2002-2015

From the table above, it can be seen that the economic growth rate of Labuhanbatu Regency at constant prices in 2010 has decreased significantly. In 2002, the economic growth rate in Labuhanbatu Regency reached 6.16 percent. Although it experienced a significant increase in 2003 to reach 8.61 percent, it slowly continued to experience a significant decline until it reached a figure of 5.04 percent in 2015. In general, the economy in Labuhanbatu Regency in 2015 was better and relatively stable than the previous year although there was quite high inflation due to the increase in fuel oil, but it did not really affect the economic performance in 2015. The inflation that occurred in 2015 resulted in the occurrence of a decline in the prices of superior commodities in Labuhanbatu Regency such as palm oil, rubber, and cocoa which are the main sources of income for the people of Labuhanbatu Regency.

## Workforce Development Based on Education Level

 Table 2: Percentage of Labuhanbatu Regency Workforce Based on Education Level

 2002-2015 (percentage)

	Year	Not Going toYearSchool (%)	Workforce Education Level			Total
No			PSE	SSE	CEB	(%)
			(%)	(%)	(%)	(70)
1.	2002	31,68	53,11	13,11	2,10	100
2.	2003	22,15	58,65	17,67	1,53	100
3.	2004	15,27	57,64	25,46	1,63	100

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4.	2005	27,22	51,34	19,15	2,29	100
5.	2006	23,05	53,17	22,23	1,55	100
6.	2007	27,87	51,53	18,65	1,95	100
7.	2008	27,61	51,48	18,79	2,12	100
8.	2009	27,48	51,49	18,19	2,84	100
9.	2010	19,56	52,11	23,94	4,39	100
10.	2011	23,48	51,07	20,96	4,49	100
11.	2012	20,09	51,87	24,27	3,77	100
12.	2013	19,21	52,78	23,44	4,57	100
13.	2014	14,14	56,06	23,42	6,38	100
14.	2015	19,24	51,11	23,65	6,00	100

Source: Statistics Indonesia Labuhanbatu Regency in Figures for the Period 2002-2015

From the table above, it can be seen that in general there has been a change in the structure of the workforce in Labuhanbatu Regency based on the level of education. Where if in 2002 the percentage of the total workforce with a basic education level reached 53.11 percent, although it had increased in 2014 by 56.06 percent, in 2015 the percentage decreased to the level of 51.11 percent, which is likely the impact of implementation of the 9 year compulsory education program which was promoted by the government since the end of 1999.



## **Human Development Index**

Figure 4: Human Development Index (HDI) for the period 2002-2015

From the picture above, it can be seen that since 2002 the Human Development Index in Labuhanbatu Regency was 67.20 percent. Although it experienced the highest increase in 2012 at 75.29 percent, in 2014 it decreased again to 70.06 percent, then increased again to 70.23 percent in 2015. This was also accompanied by an increase in the district's HDI ranking. Labuhanbatu according to province which was ranked 15 in 2008 to rank 13 in 2009 and rank 12 in 2014. The increase in the IPM of Labuhanbatu Regency was not accompanied by an increase in the HDI ranking of Labuhanbatu Regency according to the province which was ranked 12 from 2014 to 2015. This is

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because the rate of development in the regions is relatively balanced so that there is no overlapping of the HDI ranking of Labuhanbatu Regency in North Sumatera with other regencies.

# **Government Expenditure on Education Sector**

**Table 3**: Determination of the Labuhanbatu Regency Education Fund Allocation for thePeriod 2002-2015 (in billion rupiah)

No	Year	Government Expenditure (billion rupiah)	
1	2002	272,80	
2	2003	345,00	
3	2004	405,20	
4	2005	473,40	
5	2006	672,20	
6	2007	738,30	
7	2008	579,17	
8	2009	572,80	
9	2010	566,43	
10	2011	636,27	
11	2012	710,27	
12	2013	797,94	
13	2014	967,10	
14	2015	1.121,97	

Source: Ministers of Finance, Republic of Indonesia, Period 2002-2015

From the table above, it can be seen that the development of labuhanbatu district government spending in the education sector from 2002 to 2015 continues to experience significant growth, where in 2002 the Labuhanbatu district government allocated an education fund of Rp. 272.80 billion rupiah, so that by 2015 it had reached Rp. 1,121.97 trillion rupiah. This shows that the Labuhanbatu Regency government is very serious in improving the quality of human resources through the education sector.

# Variable of Workforce with Primary School Education (PSE)

The significance test carried out on the variable Primary School Education (PSE) manpower can be seen from the probability value. From the regression results, the probability value is 0.0053, because the value is <0.05, this variable is in the reject condition  $H_0$ . So it can be concluded that the PSE variable is a variable that affects the economic growth of Labuhanbatu Regency. Then the explanation for the directional test is to see whether the relationship between the two variables is positive or negative by looking at the coefficient. From the regression results of the treatment data output on the direction test it was found that the relationship between the two variables was positively related by 0.016918. This explains that each increase in the workforce with Primary School Education (PSE) in Labuhanbatu Regency increases by 1 percent, so that the average economic growth in Labuhanbatu Regency increases by 1.6918 percent.

This empirical result is in accordance with the hypothesis proposed based on the theory according to Meier and Rauch (2000) that education or, more broadly, human capital, can contribute to development. This is because education is essentially a form of saving, causing the accumulation of human capital and growth in aggregate output if human capital is an input in the aggregate production function.

# Variable Secondary School Education (SSE)

The significance test carried out on the variable Secondary School Education (SSE) manpower can be seen from the probability value. From the regression results, the probability value is 0.0415, because the value is <0.05, this variable is in the reject condition  $H_0$ . So it can be concluded that the Secondary School Education (SSE) variable is a variable that affects the economic growth of Labuhanbatu Regency. Then the explanation for the directional test is to see whether the relationship between the two variables is positive or negative by looking at the coefficient. From the regression results of the treatment data output on the direction test, it was found that the relationship between the two variables was positively related by 0.029861. This explains that if the workforce with Secondary School Education (SSE) in Labuhanbatu Regency increases by 1 percent, the average economic growth in Labuhanbatu Regency increases by 2.986 percent.

This empirical result is in accordance with the hypothesis put forward based on the theory by Lim (1996) that high economic growth in Japan and South Korea is most likely caused by quality human resources, this is seen from the high literacy rate, so that the workforce is easy to absorb and adapt to the technological and economic changes that occur.

# Higher College Education Background (CEB)

The significance test carried out on the variable College Education Background (CEB) can be seen from its probability value. From the regression results, the probability value is 0.0021, because the value is <0.05, this variable is in the reject condition  $H_0$ . So it can be concluded that the CEB variable is a variable that affects the economic growth of Labuhanbatu Regency. Then the explanation for the directional test is to see whether the relationship between the two variables is positive or negative by looking at the coefficient. From the regression results of the treatment data output on the direction test it was found that the relationship between the two variables was positively related by 0.116345. This explains that if the workforce with College Education Background (CEB) in Labuhanbatu Regency increases by 1 percent, then on average the economic growth in Labuhanbatu Regency increases by 11,634 percent.

# Variable Human Development Index (HDI)

The significance test carried out on the human development index (HDI) variable can be seen from its probability value. From the regression results, the probability value is 0.0052, because the value is <0.05, this variable is in the reject condition  $H_0$ . So it can be concluded that the HDI variable is a variable that affects the economic growth of Labuhanbatu Regency. Then the explanation for the directional test is to see whether

the relationship between the two variables is positive or negative by looking at the coefficient. From the regression results of the treatment data output on the direction test it was found that the relationship between the two variables was positively related by 1.802140. This explains that if the human development index (HDI) in Labuhanbatu Regency increases by 1 percent, the average economic growth in Labuhanbatu Regency decreases by 180.214 percent.

This empirical result is in accordance with previous research conducted by Ranis et al. (2000) indicate that economic growth and human development contribute to one another. The contribution of human development to economic growth by increasing the capacity of the workforce can ultimately increase economic production so that people's output will also increase. Meanwhile, the contribution of economic growth to human development is to increase government revenue which can then be invested in human development (Kosack and Tobin, 2006: 209, in, Bosman).

# Variable Government Expenditure on Education Sector (GEES)

The significance test carried out on the variable government expenditure in the education sector can be seen from the probability value. From the regression results, the probability value is 0.0021, because the value is <0.05, this variable is in the reject condition H<sub>0</sub>. So it can be concluded that the PAPEM variable is a variable that affects the economic growth of Labuhanbatu Regency. Then the explanation for the directional test is to see whether the relationship between the two variables is positive or negative by looking at the coefficient. From the regression results of the treatment data output on the direction test it was found that the relationship between the two variables was positively related by 0.179765. This explains that if Government Expenditure on Education Sector (GEES)in Labuhanbatu Regency increases by 17.9765 percent.

These empirical results are consistent with previous research conducted by Barro and Sala-I-Martin (1995) investigating the effect of government spending on education, finding that education has a strong positive impact on economic growth, where the annual rate of return on public / general education reaches 20 percent. . Likewise, the results of research conducted by Donald N and Shuanglin (1993) found that the growth rate of education expenditure had a positive and significant effect on economic growth, and the growth rate for defense spending has a positive effect on economic growth.

# CONCLUSIONS AND RECOMMENDATIONS

# Conclusion

Based on the results of the analysis and discussion that has been stated, several conclusions can be presented, namely as follows:

1. The proportion level of the total workforce in Labuhanbatu Regency with an primary school education (PSE) has a positive and significant effect on the economic growth of Labuhanbatu Regency.

- 2. The proportion level of the workforce in Labuhanbatu Regency with a secondary school education (SSE) has a positive and significant effect on the economic growth of Labuhanbatu Regency.
- 3. The proportion level of the workforce in Labuhanbatu Regency with a background in college education background (CEB) has a positive and significant effect on the economic growth of Labuhanbatu Regency.
- 4. The Human Development Index (HDI) in Labuhanbatu Regency has a positive and significant effect on the economic growth of Labuhanbatu Regency.
- 5. Government Expenditure in the Education Sector (GEES) of Labuhanbatu Regency has a positive and significant effect on economic growth in Labuhanbatu Regency

# Suggestion

The suggestions that the author can give in connection with the results of this study are as follows:

- 1. Seeing that the proportion of the workforce in Labuhanbatu Regency with a background in primary school education (PSE) has a positive influence on the economic growth of Labuhanbatu Regency, the 9 year compulsory education program must continue to be implemented in accordance with the central government program.
- Open up as much access as possible for the entire community to be able to get secondary and tertiary education through the program of supplying equivalent high school education facilities to remote areas and student scholarship programs for students in high-achieving areas to continue their studies to College.
- 3. The government needs to pay attention to problems related to the human development index (HDI), namely by continuing to pay attention to educational facilities, health facilities and increasing income so that the human development index in Labuhanbatu Regency continues to increase from year to year.
- 4. Seeing that the impact of the growth in government spending in the education sector on economic growth is positive and significant, therefore the government needs to develop a more targeted strategy in an effort to continue to increase government spending in the education sector by reducing other unproductive expenses. at the same time realizing the mandate of the 1945 Constitution, namely to allocate at least 20 percent of government spending to the education sector.

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