Turkish Journal of Computer and Mathematics Education Vol.12 No. 11 (2021), 3881- 3884
Research Article

The Effect Of Children Education On Economic Growth In Aceh Province-Indonesia

Hermanto Joesoef
Faculty of Economics and Business-Universitas Prof. Dr. Moestopo, Jakarta-Indonesia
Email: hyginus.h@dsn.moestopo.ac.id

Article History: Received: 11 January 2021; Revised: 12 February 2021; Accepted: 27 March 2021; Published online: 10 May 2021

ABSTRACT: The study aims to analyze the effect of children education on economic growth in the Aceh Province. The variables included the rate of literacy, school enrolment, the highest level of education attainment and the education expenditure. The data analyzed in the form of panel data which is a combination of time series data and cross section data. The data is sourced from the Statistic Agency, Ministry of Finance, Ministry of National Education and other relevant sources. Data analysis was performed quantitatively with Fixed Effect Model utilizing multiple regression equation with the period of the observation of 2010-2020.The results showed that the literacy rate does not affect significantly to economic growth, whereas the other three variables: education enrollment rates, highest level of education and the education budget affect economic growth in Aceh Province.

Keywords: economic growth, Aceh province, humancapital approach, school participation rate.

INTRODUCTION

Attention to the human factor has become the center of recent developments in economics development and sociology.Experts in both fields generally agree on one thing, namely that human capital plays a significant role, even more important than technological factors, in spurring economic growth.Human capital is not only about quantity but what is far more important is in terms of quality. Then the question, what is the measure that determines the quality of humans? There are various aspects that can explain this such as aspects of health, education, freedom of speech and so on. Among these various aspects, education is considered to have the most important role in determining human quality. Through education, it is assumed that humans will acquire knowledge, and with this knowledge, humans are expected to be able to build their existence in a better life. Education as one of the constituent elements of human capital has attracted the attention of many economists, which has led to various models of economic growth that include education as a source of economic growth in their models, among others: Barro (1991); Mankiw, Romer& Weil (1992), Barro& Lee (1994) and so on. The implication is that the higher the education, the more quality human life will be. In relation to the general (national) economy, the higher the quality of life of a nation, the higher the level of growth and welfare of the nation. High quality human beings will affect the main sources of growth such as physical capital and labor.

Among several ASEAN countries, Indonesia is the country most left behind in terms of central government spending on education (Sanusi, 2005). This fact is an obstacle to resource development. human beings, causing the unsustainable high economic growth and the fragility of the economy from the impact of the crisis. The cause of this problem is thought to be because so far policy makers have generally focused more on short-term economic policies in the form of trade, fiscal and monetary policies to ensure high growth but are less concerned with the sources of long-term economic growth including education issues .Western Indonesia as part of the Indonesian territory is faced with various problems, including problems related to uneven economic growth. Many factors have contributed to the uneven growth and slow economic growth achieved by one or two region or province in Western Indonesia. Even though regional autonomy or regional expansion has existed for a long time, until now there are still one province in Western Indonesia that have not experienced complete development. One of the factors that causes this is in terms of existing human resources (HR). When compared with the other provinces in the Western Region of Indonesia, there is a tendency that the provinces generally experience faster economic development. When compared to the Human Development Index (HDI) figures of the two regions, the average IPMKBI is always higher than the average HDI of Aceh Province, which is always lower. This illustrates that the quality of humans in other province in western Indonesia is still much better than the quality of humans in Aceh Province.

LITERATURE REVIEW

The Human Development Index (HDI) or also known as the Human Development Index (HDI) is a comparative measure of life expectancy, literacy, education and living standards for all countries around the world. HDI is used to classify whether a country is a developed, developing or underdeveloped country and also to measure the effect of economic policies on the quality of life. According to Hardijanto (2002) in his research it is known that human capital is an important factor for economic growth. The quality of human capital is one of the capitals that can be aligned with physical capital or natural resources in creating output in a country. Human

capital has a significant influence on economic growth. Another study by Armin (2007) analyzed investment in human capital and accumulated physical capital to increase Gross Domestic Product. The estimation results using OLS show that the accumulation of physical capital, investment in human capital and the number of productive workers with advanced education have a positive and very significant effect on the increase in GDP. The basic theory (grand theory) used in this research is the theory of new growth (New Growth Theory) or known as the endogenous growth model (Endogenous Growth Model). This theory has two types, namely: (1) human capital model and (2) research and development model. When connected with research objectives, it is more appropriate to use the human capital model approach, because education is the main element of human capital, which is a form of capital other than physical capital and health capital Human capital in various studies is proxied by education which is measured in at least two ways: (1) the highest attainable level of education and (2) the amount of investment or public expenditure for education. This study focuses on the analysis of the influence of educational variables including literacy rates, school enrollment rates, highest education levels and education budget on economic growth. in Eastern Indonesia (KTI) using the human capital model approach.

METHODOLOGY

This research is quantitative and the data used is panel data which is a combination of time series (time series) from 2010 to 2020 and cross section data using a sample of several provinces in Eastern Indonesia. The data used are Gross Regional Domestic Product (GDP), Literacy Rate (LT), School Participation Rate (SPR), Highest Education Level (HEL) and Education Expenditure (EXP). These data were obtained from the Central Statistics Agency (BPS) and the Directorate General of Fiscal Balance. The sampling technique in this study was to use purposive or judgmentalsampling samples which were used to determine specific criteria for the sample according to the characteristics desired by the researcher (BambangPrasetyo and Lina Miftahul Jannah, 2005: 135). In this study, the samples used were Aceh Province. The provinces are among the 4 provinces that have the lowest average gross regional domestic product in Indonesia.

There are three methods that can be used in estimating panel data, namely, first, Pooled Least Square (PLS) alsoknown as the Common Effect Model (CEM). In this method, the model assumes that the existing combined data shows the actual conditions where the intercept value of each variable is the same and the slope of the coefficients of the variables used is identical for all units of the cross section. Second, the Fixed Effect Model (FEM) Fixed effect (fixed effect) in this case means that one object, has a constant which is a constant size for various periods of time. Likewise, the regression coefficient has a fixed magnitude from time to time. And third, Random Effect Models (REM). In analyzing panel data regression, apart from using a fixed effect model (FEM), regression analysis can also use the random effects approach (random effects). This random effects approach is used to overcome the weaknesses of the fixed effect model using pseudo variables, so as a result the model experiences uncertainty. In contrast to FEM which uses pseudo variables, the random effects method uses residuals, which are thought to have an intertemporal and inter-object relationship. (Wing Wahyu Winarno, 2007: 9.17).

Before using one of the three methods above, two tests were conducted first, namely the Chow test and the Hausman test. to determine what model should be used in the estimation between pooled least square (PLS) and fixed effect mode (FEM). This test follows the F distribution of statistics, namely FN-1, NT-N-K. If the statistical Chow test value is greater than the F table, then Ho is rejected, and the model to be used is FEM. If the statistical chow value is smaller than the F table value, then Ho is accepted and the model used is PLS. B. Hausman test. One way to determine which model should be used in estimating FEM and REM is by performing the Hausman test. The Hausman test is a test that provides an assessment using the chi-square statistic. The Hausman test compares the Hausman test value with the Chi Square Statistic with df = k, where k is the number of coefficients of the variable estimated. If the results of this test are significant, then Ho is rejected and accepts Ha, which means that the fixed effect model is accepted. In addition to the above tests, to find out the truth of the hypothesis, it is necessary to carry out statistical tests in the form of the t test and the Coefficient of Determination R2 (Goodness of Fit) by assuming other variables are constant or fixed. Ho: $\beta i = 0$, meaning that the independent variable individually does not have a significant effect on the dependent variable. Ha: $\beta i > 0$, meaning that the independent variable individually has a significant positive effect on the dependent variable. Meanwhile, the coefficient of determination shows the influence of the independent variables simultaneously on the dependent variable. The higher the R, the closer the relationship between the independent variable and the dependent variable.

RESULTS AND DISCUSSION

The author uses panel data regression as an estimation tool in this study, where in testing the panel data itself, there are three models that can be used. Namely pooled least square (PLS), fixed effect model (FEM) and random effect model (REM). To find out which panel data model is most appropriate to use in this study, it can

be done with several tests, namely the Chow test and the Hausman test (Panel Data Module FE UI Economics Laboratory, 2006: 10-12). Chow Test is conducted to determine which model is most appropriate to use between pooled least square or fixed effect model. The Chow test provides an assessment by comparing the F statistic with the F table. If the F statistical value is smaller than Ftable, then the PLS model is used. However, if the F statistical value is greater than the F table, then the best model between PLS and FEM used is FEM. The results of the Chow test can be seen in table 1 below (see attachment). Based on the results of the Chow test, a statistical value of 4.125788 is obtained with df (3.36), using the F table α = 5%, the value is 2.82 which means rejecting pooled least squared (PLS) and accept the fixed effect model (FEM).
After the Chow test is completed, the model is re-tested with the Hausman test to determine the most appropriate model to be used between FEM and REM. The Hausman test provides an assessment using the chi-square statistic. The results of the Hausman test processing can be seen in table 2 below: (see attachment) Based on the Hausmantest, the Chi-Sq statistic is 9.112461 with a probability of 0.0357 at d.f = 4, using the chi-table the value is 9.48. The test results state that the statistical chi is greater than the chi-table, so it can be concluded that Ho is rejected and the best model that can be used for the research model is the Fixed Effect Model. This is reinforced by empirical technical considerations, namely, if T (number of time series units) is greater than N (number of cross-section units), then FEM and REM are not much different. In this case the choice will generally be based on the convenience of calculating, namely FEM (panel model of economics laboratory FEUI, 2006: 11).
It can be concluded that from the four independent variables, three independent variables, namely the school participation rate, the highest level of education and the education budget are able to individually influence economic growth. This is indicated by the probability value smaller than α = 0.05. Meanwhile, the other independent variables, namely the literacy rate, did not significantly influence the dependent variable. This is also shown in the t statistical table above where this variable has a probability value greater than α = 0.05. Based on the results of econometric data processing in the table above using the Eviews 7 program, the regression equation is obtained as follows:

PDRB = β0 + β1LT + β2SPR + β3HEL + β4EXP or
PDRB= -9.67327 -0.703303 ILT+ 0.703010SPR + 0.457158HEL + 0.295415EXP

Coefficient of determination in this study amounted to 0.785 or 78.5%. This suggests that the independent variables are literacy rate, school participation rate, highest education level and education budget are able to explain The dependent variable is economic growth of 78.5%, and the remaining 21.5% is explained by other educational variables that are not included in the estimation model. 3. Interpretation of Results The results of this study indicate that all educational variables such as the school enrollment rate (SPR), the highest level of education (HEL) and the education expenditure have a significant effect on economic growth in Aceh province, except for the variable literacy rate. The variable literacy rate has no significant effect at the 5% real level on economic growth in Aceh province. This can be due to the fact that the literacy rate measured based on a person's ability (aged 15 years and over) in reading, writing and arithmetic is quite good. On average, the four lowest economic growth provinces in Indonesia have literacy rates above 75%, and many of them even reach 95%, including in the city of Kupang. This literacy rate is increasing from year to year which is also due to the existence of a program from the government, namely the 9 year compulsory education aimed at improving the quality of education in Indonesia. In fact, starting in 2012, the government began to proclaim 12 years of compulsory education as an effort to reduce literacy rates.

CONCLUSION

Based on the estimation results of panel data (time series and cross section) using the Fixed Effect Model (FEM) method gave good results so that this method consistent and efficient to see the effect of educational variables including literacy rate (LT), school enrollment rate (SPR), highest education level (HEL) and education budget (EXP) on economic growth in eastern Indonesia. This can be seen from the estimation results with a value of R2 = 0.785. Only one educational variable, namely the literacy rate, has no significant effect on economic growth in Aceh Province. Whereas, the three other educational variables, namely the school participation rate (SPR), the highest level of education (HEL) and the education expenditure (EXP) significantly influence the economic growth of Aceh Province.

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