The Role of Education on Technology Inclusion and the Performance of Indonesian Human Resources

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Abstract

This study examines the relationship between technology inclusion and educational investment made by the Indonesian government on economic growth in Indonesia. This study uses secondary data from world banks and processed regression using the moving average autoregression method. We found that education and technology inclusion were positively related to economic growth. This indicates that education and technology inclusion in Indonesia contribute to economic growth in Indonesia.

Keywords: Technology Inclusion, Indonesia, Education

JEL Classification : C0, J24,J64

Background

Education is a mechanism to increase human capital. In human capital theory, a person's income will increase along with the increase in human capital he has. Human capital is inherent in humans (Bradley & Green,2019). Aggregate education is an education system that is intended for all citizens, organized by the government to educate citizens. Education plays a role in increasing knowledge, intelligence, mastery and adaptation of technology and improving skills (Hill & Kumar,2012).

Education improves human ability to work and earn money so that education can improve the performance of human resources. Education is the basis of technological development including the adaptation of the latest technology. With high technology adaptation, technology inclusion can be improved well (Popkova et al,2018). Technology is a means of improving performance, including engine creation. Technology really supports human performance. So that the combination of education and technology inclusion will have an impact on improving the performance of human resources which is reflected in economic growth (Lupeikiene et al,2018).

Literature review

The theory of human capital was first put forward by Adam Smith. Where in production required labor and financial capital. The more skilled the labor used, the faster and more production and vice versa. So that there is human capital inherent in every human being, namely knowledge, experience, skills and health (Warner,2013).

Human capital can be increased through the learning and education process. The role of education is very important because education is the foundation of increasing the human capital of a country. Education investment is one of the human capital investments in the form of increased knowledge, understanding and increased intelligence so that it is easier to train oneself and acquire skills and abilities to master technology so that technology inclusion occurs (Hanley et al,2019).

Technology development and technology inclusion are very important in improving the performance of human resources. With increased performance, domestic production will increase so that gross domestic production increases. Gross domestic production is a reflection of the economy or economic growth (Hassan et al,2020).

Research Method

This study examines the relationship between technology inclusion and educational investment made by the Indonesian government on economic growth in Indonesia. This study uses secondary data from world banks and processed regression using the moving average autoregression method with the following equation:

$GDP_t = C_t + \beta_1 TI_{t1} + \beta_2 IE_{t2} + e_t$

Where,
GDP = Gross Domestic Product
C = Constant
IT = Technology Inclusion
IE = Education Investment
e = Error Term

All financial data is calculated in USD, technology inclusion data is calculated in the number of gadgets that access the internet in Indonesia.

Result and Discussion

The estimation results are as follows:

GDP = 591673462224 + 5.95981886587*EI + 1.00137358473*TI

From the estimation results, education investment (EI) and technology inclusion (IT) are positively related to economic growth. This indicates that education and technology inclusion in Indonesia contribute to economic growth in Indonesia. Table 1 illustrates the estimation results as follows:

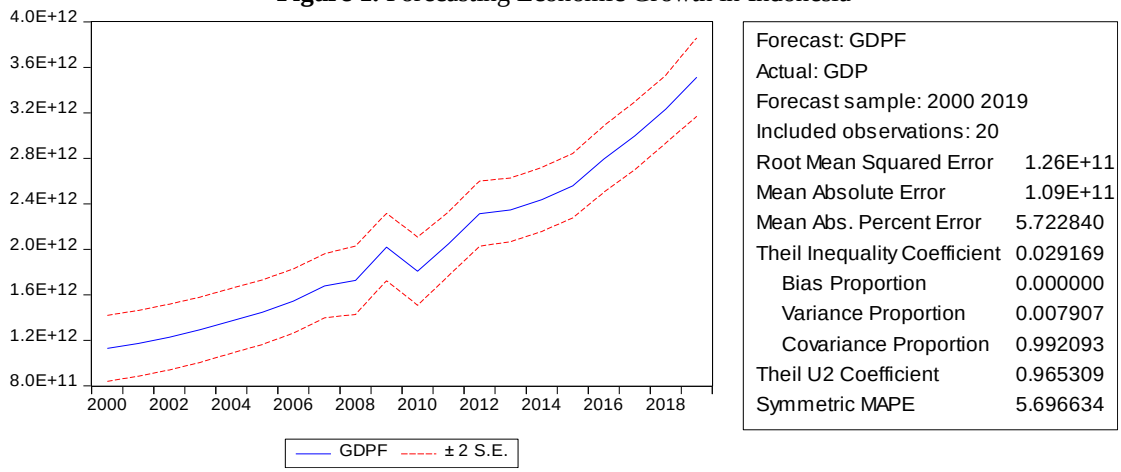
Table 1. Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	592000000000.00	1.23E+11	4.810228	0.0002
EI	5.959819	1.796765	3.316973	0.0041

TI	1.001374	1.285076	0.779233	4.47E-01
R-squared	0.968866	Mean dependent var		2.03E+12
Adjusted R-squared	0.965204	S.D. dependent var		7.30E+11
S.E. of regression	1.36E+11	Akaike info criterion		54.24924
Sum squared resid	3.15E+23	Schwarz criterion		54.3986
Log likelihood	-539.4924	Hannan-Quinn criter.		54.27839
F-statistic	264.5169	Durbin-Watson stat		0.729461
Prob(F-statistic)	0			

Based on the estimation results described in Table 1., it can be seen that the R-square is quite high, namely 0.968866 so that the quantitative calculation results show a 96% level of truth. Figure 1. Shows the forecasting of economic growth in Indonesia

Figure 1. Forecasting Economic Growth in Indonesia



Source: Author Computing

From the results of forecasting, it can be seen that economic growth in Indonesia is experiencing very rapid growth with increasing technological inclusion and education playing an important role in economic growth.

Conclusion

Inclusion of technology and education plays an important role in improving the welfare of the Indonesian people through joint performance in building the country and economic independence.

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