The Role of Education in Human Capital Investment and Total Employment in Indonesia

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Abstract

This study aims to look at education investment, and health investment in Indonesia by using total employment as an indicator. To achieve this goal, data on the behavior of education investment, health investment, and total employment are observed. This study uses the Quantitative Threshold Autoregressive method which is used to predict the behavior of the data so that the relationship behavior between the data can be seen. We found that investments in human resources in education and health can improve human quality. However, this does not guarantee the absorption of labor, which is indicated by the continuous increase in the number of jobs in the long term. In encouraging employment, other investments are needed, namely in the field of business and infrastructure so that the increase in human capital which is an indicator of improving human quality through investment in education and health can go hand in hand with the growth of employment opportunities in Indonesia.

Keywords: Human Capital, Total Employment, Indonesia

JEL Classification Code: C01,E44, E51

Introduction

Basically, so far the government has focused on improving the quality of human resources. This is manifested in the allocation of State Revenue and Expenditure Budget funds before 2020 related to improving the quality of education. The allocation of 20% of the State Revenue and Expenditure Budget for the education budget is a tangible form of government support for improving the quality of Indonesian human resources. The budget, among other things, is aimed at the Smart Indonesia Program, School Operational Assistance, School / Classroom Construction / Rehab, and the provision of Bidik Misi Scholarships. A very massive government program in improving the quality of human resources through increased education and training, of course, requires the participation of every work unit in the government sector. The Directorate General of State Assets plays a role in achieving the objectives of these government policies (Sengupta et al,2020). The potential of Indonesia's human resources and efforts to utilize them is one of Indonesia's assets to become a developed country. The population number can be one of the potentials for Indonesia's human resources. Indonesia has a very large population, reaching 255 million in 2020. But the population distribution in Indonesia is not evenly distributed. The largest population is on the island of Java. In order to distribute the population evenly, the Indonesian government implemented a transmigration program for residents of the island of Java. The advantage of

the transmigration program is that it provides various facilities to support the lives of transmigrants. Facilities for transmigrants include houses, agricultural land to work on, and agricultural tools (Kunaifi et al,2020).

A large population and a large number of workers must be supported by skills or expertise. If the population and a large number of workers are not supported by skills or expertise, it will affect the quality of human resources itself. One indicator in understanding human quality is the human capital index or HCI. HCI is one of the World Bank's programs designed to explain how health and education conditions can support the productivity of future generations. HCI combines components of the probability of life to age 5 years (survival), quality and quantity of education, and health including the issue of stunting. This component is the main part of measuring the future labor productivity of children born at this time (Alvarado et al,2021). In the HCI index, there are two key factors, namely education, and health. The Indonesian government continues to improve the quality of human resources (human capital), apart from allocating 20% of the budget for education, improving the quality of teachers and school management, and the teaching and learning process of students, the Indonesian government also pays great attention to vocational education to face the industrial revolution 4.0, information technology, and private sector participation in education. Furthermore, in welcoming digital development, the Indonesian government is improving the education curriculum, strengthening competencies through vocational training and apprenticeship programs, and implementing professional certification in all institutions in the territory of Indonesia (Solikin et al,2020).

Particularly for the health sector which is of great concern at this time, the Government of Indonesia will continue to optimize the achievement of the 5% budget allocation to improve the quality and access to quality health services/facilities for everyone, including fulfilling nutrition and reducing stunting, increasing the competence of health workers, and strengthening the national health insurance system. The COVID-19 pandemic is a wake-up call to the world regarding the importance of investing in developing pandemic preparedness and response capacity. Strengthening the national health sector which is Indonesia's national priority will continue to be carried out through efforts to improve health facilities, support for medical personnel, as well as the provision of vaccines. In addition to health, the momentum of improving the Indonesian Human Resources Index score needs to be followed up by strengthening the education system in Indonesia to be better prepared to face global challenges in the future (Arifianto, 2020).

Literature Review

Human Resources Development in Indonesia is part of the process and objectives in Indonesia's national development. Therefore, the development ideas developing in Indonesia today are strongly influenced by the growing awareness of the inevitable participation of the Indonesian people in the ongoing global process. It is hoped that this process will bring benefits and encourage the national development process (Hickey,2016). At the same time, the Indonesian people also face the challenge of catching up with other nations that have previously advanced. Therefore, the development of an advanced and independent nation, in order to create prosperity, requires the development of a development concept that is based on humans and the community. On that basis, to achieve such development goals, the focus of development is placed on the economic sector with the quality of human resources. The concept of human development indicators as a measure of development is parallel to indicators of per capita income and growth rate. Improving the quality of human resources as a series of efforts to realize human beings as a whole and Indonesian society as a whole includes human development, as a human being puts pressure

on human dignity, rights, and obligations which are reflected in the values contained in humans both in terms of ethics and aesthetics. , as well as logic which includes the spiritual values of personality and struggle (Rachmawati & Hendayani,2020). In the context of national development, complete human development, professional abilities, and personality maturity reinforce one another. Professionalism can help shape attitudes and behaviors as well as a strong personality, while a strong personality is a prerequisite for shaping professionalism. There are at least four main policies in an effort to increase human resources, namely: Increasing the quality of life which includes both the quality of the human being such as physical and spiritual, as well as the quality of life such as housing and healthy housing; Increasing the quality of productive human resources and efforts to equalize their distribution; Increasing the quality of human resources capable of utilizing, developing and mastering science and technology with an environmental perspective; as well as developing institutions covering the institutional and legal roles that support efforts to improve the quality of human resources.

Increasing the capacity and quality of a nation through the development of superior human resources is a common task in creating a strong nation and a prosperous country. Through superior, resilient, and qualified human resources both physically and mentally, will have a positive impact not only on increasing the nation's competitiveness and independence but also in supporting national development. In this regard, there are several things that must be the main priority in developing the quality of human resources, among others, first, is a good and quality education system. To achieve this, it is necessary to organize the education system as a whole, especially with regard to the quality of education and its relevance to the needs of society and the world of work. The government in this case has an important role in the implementation of an effective and efficient education system, oriented towards the mastery of science and technology and evenly distributed throughout the country. The second is strengthening the role of religion in social life in order to strengthen the national identity and personality (character building). The third is increasing the capacity of human resources through various education and training, competence, coaching, and others. A professional and skilled workforce according to market demands is a factor of excellence for a nation in facing global competition (Chou et al,2008). The government plays an important role in preparing strategic programs in order to produce quality human resources ready to enter the job market. Lastly, is community fostering and development, especially the younger generation. As the main support in the wheels of development, the empowerment of the younger generation is expected to be able to create a creative, innovative, and highly competitive generation. The characteristics of this young generation are expected to be able to contribute and win the global competition. Considering the strategic role of human resources for the acceleration of national development, policies and strategic steps for a comprehensive work program must be realized in order to produce many superior Indonesian human resources who are able to compete at the global level. Policy synergy between stakeholders in related sectors and across sectors is also absolutely necessary in order to unify the existing resources and potentials for accelerating the development of Indonesian human resources (Lange,2010).

Research Methods and Materials

This study aims to look at education investment, and health investment in Indonesia by using total employment as an indicator. To achieve this goal, data on the behavior of education investment, health investment, and total employment are observed. This study uses the Quantitative Threshold Autoregressive method which is used to predict the behavior of the data so that the relationship behavior between the data can be seen. The hope is that knowing past behavior data can be an indicator of

decision-making that can be taken in the future. In this study we used the autoregressive equation as follows:

$$AR_{(p)} = Y_t = c + \Phi_1\ Y_{t-1} + \Phi_2\ Y_{t-2} + \ldots + \Phi_p Y_{t-p} + e_t$$

Where AR is Y and Yt is Y from time to time in a time series which is influenced by Yt-1 or Y from time to time in the past in period 1 and Yt-1 itself is also influenced by Yt-2 which is Y in the past in period 2 onwards which is influenced by et which is the error term for the time in the study period. This study focuses on secondary data sourced from world banks, including data on education investment, health investment, and total employment in Indonesia. With the econometric equation as follows:

$$Y_t = \beta_0 + \beta_1 H_{t1} + \beta_2 Ed_{t2} + e_t$$

Where Y is a total employment, t is a time period, β is constant, H is health, Ed is education, and e is error term. All data are secondary data from world banks.

Results and Discussion

The following is the estimation result of the Autoregressive Estimate Threshold:

TOTAL_EMPLOYMENT = (-0.066747629506*EDUCATION + 0.0677363368542*HEALTH) + (-1.63158472245*EDUCATION + 2.24678236143*HEALTH)*@LOGIT(2.2379467374e-07*(TOTAL_EMPLOYMENT(-3)-152983372.687)) + 209992808.893

From the estimation results, it can be seen that the data behavior is from the direction of the relationship between the variables both in linear and non-linear terms so that the data behavior of each variable can be seen. The direction of the variable movement of the linear and non-linear parts of the estimation results can be seen in Table 1 below:
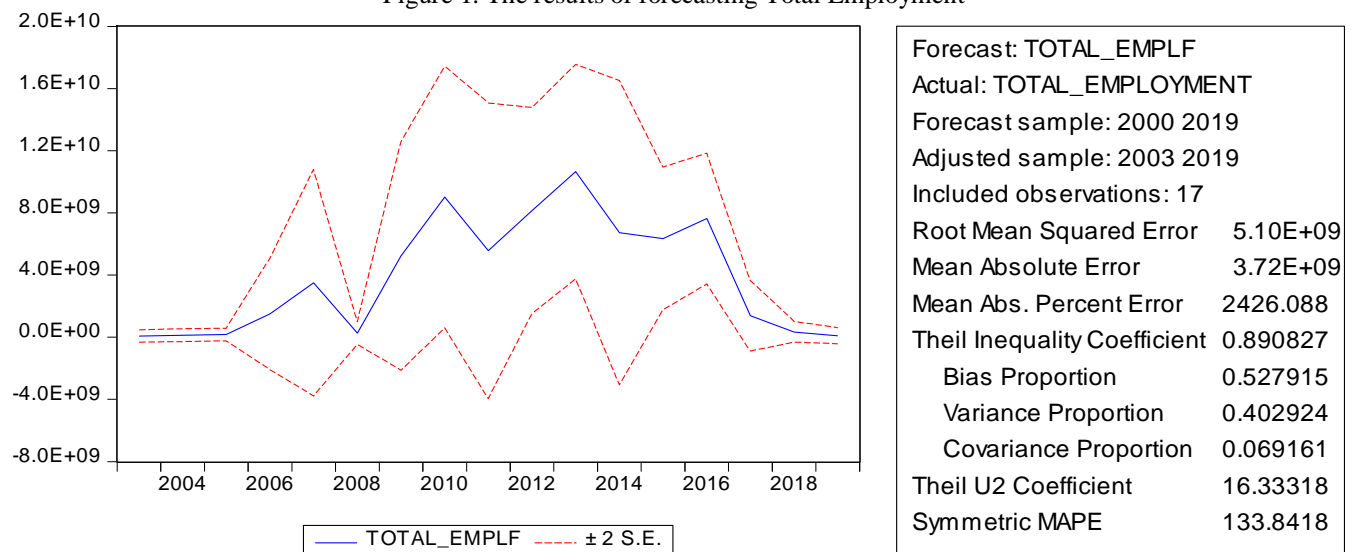
Table 1. Estimation Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Threshold Variables (linear part)				
EDUCATION	-0.066748	0.044173	-1.511036	0.1617
HEALTH	0.067736	0.050571	1.33943	0.2101
Threshold Variables (nonlinear part)				
EDUCATION	-1.631585	3.712859	-0.439442	0.6697
HEALTH	2.246782	5.062877	0.443776	0.6667
Non-Threshold Variables				
C	2.10E+08	1.32E+08	1.590224	0.1429
Slopes				
SLOPE	2.24E-07	5.87E-08	3.812491	0.0034

Thresholds				
THRESHOLD	1.53E+08	12506557	12.23225	0
R-squared	0.80294	Mean dependent var		2.23E+08
Adjusted R-squared	0.684703	S.D. dependent var		3.54E+08
S.E. of regression	1.99E+08	Akaike info criterion		41.34703
Sum squared resid	3.95E+17	Schwarz criterion		41.69012
Log likelihood	-344.4498	Hannan-Quinn criter.		41.38114
F-statistic	6.790973	Durbin-Watson stat		2.905598
Prob(F-statistic)	0.004364			

From the estimation results and the direction of the relationship in table 1. it can be seen that there is a positive relationship between health and the number of jobs, meaning that the healthier the Indonesian population, the more workers can work in Indonesia. However, education has a negative direction. This indicates that the majority of Indonesian workers work in the sector who rely on physical activities at work. So that the health sector is very vital in maintaining the number of workers in Indonesia. This can be illustrated in the results of forecasting total employment which takes into account 3 variables, namely the following total employment, health, and education:

Figure 1. The results of forecasting Total Employment

Forecast: TOTAL_EMPLF	
Actual: TOTAL_EMPLOYMENT	
Forecast sample: 2000 2019	
Adjusted sample: 2003 2019	
Included observations: 17	
Root Mean Squared Error	5.10E+09
Mean Absolute Error	3.72E+09
Mean Abs. Percent Error	2426.088
Theil Inequality Coefficient	0.890827
Bias Proportion	0.527915
Variance Proportion	0.402924
Covariance Proportion	0.069161
Theil U2 Coefficient	16.33318
Symmetric MAPE	133.8418

From the results of forecasting the total workforce working in Indonesia when using only two variables as driving factors, namely health and education, it does not have an impact on a continuous increase in total employment in Indonesia or total employment in Indonesia. This shows that human capital investment in the education and health sectors can improve human quality. However, it does not guarantee the absorption of labor, which is indicated by a continuous increase in total employment in the long term.

Conclusions

Investments in human resources in education and health can improve human quality. However, this does not guarantee the absorption of labor, which is indicated by the continuous increase in the number of jobs in the long term. In encouraging employment, other investments are needed, namely in the field of business and infrastructure so that the increase in human capital which is an indicator of improving human quality through investment in education and health can go hand in hand with the growth of employment opportunities in Indonesia.

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