

Path Analysis of Economic Growth and Government Spending on Education Impact on the Human Development Index in Indonesia

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Abstract

Economic development is determined by many factors, for example by the state of natural resources, human resource capabilities, and technology. Many countries are expanding references to political-economic development that still focus on the availability of their natural resources. Experience in some developed countries such as Japan and Singapore shows that the availability of natural resources is in fact not a dominant factor in political-economic development. Countries with limited natural resources have, it turns out to have a comparative advantage in the field of human resources and technology. The development of human resources needs to get dominant attention due to the limitations of its natural resources. The responsibility for development lies with the community and the government.

Keywords: economic growth; government spending on education; education; human development index

Abstrak

Pembangunan ekonomi ditentukan oleh banyak faktor, seperti keadaan sumber daya alam, kapasitas sumber daya manusia, dan teknologi. Banyak negara telah memperluas tolok ukur pembangunan ekonomi politik yang masih berfokus pada ketersediaan sumber daya alam. Pengalaman beberapa negara maju seperti Jepang dan Singapura menunjukkan bahwa ketersediaan sumber daya alam ternyata bukan merupakan faktor dominan dalam perkembangan ekonomi politik. Negara dengan sumber daya alam yang terbatas memiliki keunggulan komparatif dalam hal sumber daya manusia dan teknologi. Karena sumber daya alam yang terbatas, perhatian khusus harus diberikan pada pengembangan staf. Tanggung jawab pembangunan ada pada masyarakat dan pemerintah.

Kata kunci: pertumbuhan ekonomi; belanja pemerintah bidang pendidikan; indeks pembangunan manusia

PRELIMINARY

Economic growth is a process that causes an increase in the real income per capita of the population in a country in the long term accompanied by improvements in the institutional system. Economic growth as a process which means changes that occur continuously, efforts to increase per capita income, improvement of the institutional system in all fields. Stable economic growth is highly expected by developing countries such as Indonesia, because it can overcome problems in the economy, including; problems of poverty, unemployment, illiteracy, improve people's welfare and give more attention to health and education(Asnidar, 2018).

In other words, a country that experiences high economic growth will be able to have a high effect on other fields, because when a country experiences economic growth, the national income of a country will be pushed up so that it can be allocated for financing economic infrastructure development. Therefore, economic growth is the main priority of a country in the prosperity of its population. The welfare of the population can be known through the Human Development

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Index (HDI), both the physical and non-physical quality of the population. Physical Human Development Index can be seen from life expectancy and Non-physical Human Development Index is known from the average population in school and literacy rate and has economic ability (Putra, 2017).

The formation of human capital through investment in education is the best way to increase economic growth which in turn will reduce poverty levels. In many studies it is found that economic growth has no significant effect on poverty if the quality of human beings in the region does not increase. Education has an important and strategic role in nation building and contributes significantly to economic growth and social transformation (Seran, 2012).

Expectations of Years of Schooling and Average Years of Schooling can provide an overview of the addition (flow) and achievement (stock) of the quality of human resources in an area. During 2010 to 2020, these two indicators have always increased. Although the HLS indicator continues to increase, since 2014 it tends to experience a slowdown. In 2020 HLS only increased 0.23 percent (0.03 years), slightly slower than the increase in the previous year which reached 0.31 percent (0.04 years), which can be seen in the following figure (BPS, 2020):

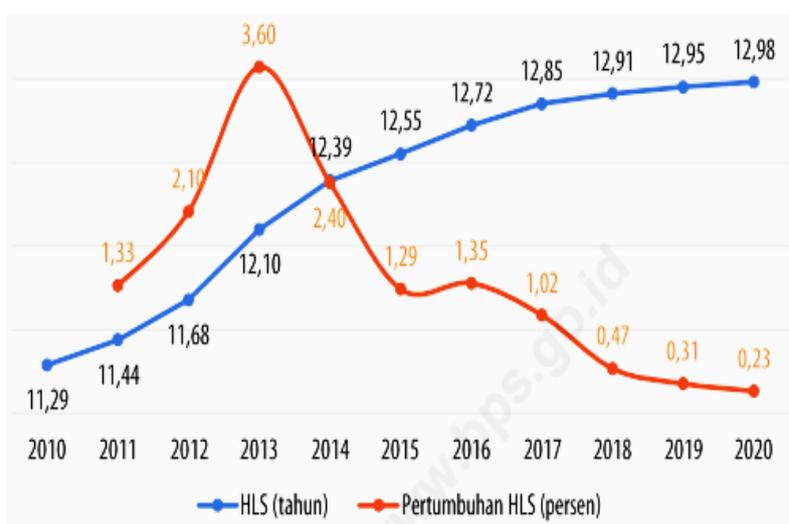


Figure 1. Development of Indonesia's Old School Expectations (HLS), 2010-2020 (BPS, 2020)

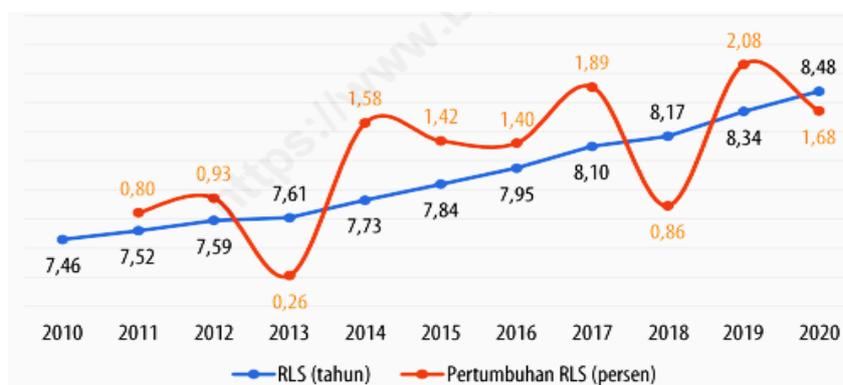


Figure 2. Development of Indonesia's Average Length of Schooling (RLS), 2010-2020 (BPS, 2020)

The RLS indicator during the pandemic also increased compared to the previous year, from 8.34 years in 2019 to 8.48 years in 2020 or an increase of 1.68 percent (0.14 years). This increase was slower than the previous year which reached 2.08 percent (0.17 years). Naturally, the increase in RLS is strongly influenced by the increase in APS in the 19-24 year age group,

especially the APS in the 24-year age group. Related to this, efforts to improve the education dimension can be focused on increasing the NER for the 19-24 year old group because it can simultaneously increase the HLS and RLS indicators. Economic growth can be defined as the process of increasing GDP without seeing the impact of the increase in income being greater or less than the rate of human growth in a region (Ariza, 2016). Romer's endogenous growth theory explains that economic growth is a process that originates from within the system, in which three main elements are: there is an element of externality as a result of advances in knowledge; an increase in the scale of output that leads to increased specialization and division of labor; and the shorter use of time in utilizing knowledge due to the development of research. In general Romer's growth theory is:

$$Y_i = AK_i^\alpha L_i^{1-\alpha} K^\beta$$

Y_i is the production output of company I , K_i is the capital reserve, L_i is the labor force, and A is the overall technical knowledge which is assumed to have a positive impact on the production of each company. (Imamah, 2018). Education is a fundamental field in a country because education can have positive benefits for development. Education contributes to the development of socio-economic life through increasing knowledge, skills (hardskill and softskill), attitudes and productivity, so that education is expected to be able to produce a quality workforce (Desrindra, Murialti and Anriva, 2015). If per capita income increases, government spending will also increase relatively, this happens because the government is obliged to regulate relations that arise in society, education law, and so on. There are two types of government spending on education, namely: individual education costs and indirect education costs (Sanggolongan, Rumat and Siwu, 2015).

The aspect of education is considered to have the most important role in determining human quality. Because through education, humans are considered to gain knowledge, and with this knowledge humans are expected to be able to build a better life existence so that we get to know competency-based curriculum and or life skills. Many studies conclude that there is a difference in education effect on regional wages and emphasize that the influence of human capital represented by education level can even have a negative effect on unemployment (Čadil, Petkovová and Blatná, 2014). The process of economic growth has several factors that should be considered, among others, capital, labor, technology and abilities/skills. Initially, skills and education tended not to get attention because they focused more on how to channel abundant resources as supporting inputs in economic growth (Muslikhati, 2018). But then there are many studies that find that apart from natural resources, education and skills are also needed

Physical and mental human development implies increasing the basic capacity of the population which will then increase the opportunity to be able to participate in the development process (Siregar *et al.*, 2020). The basic capacity at the same time are the three main values of the success of economic development, namely the adequacy of (sustenance), identity (selfsteem), and freedom (freedom) (Desrindra, Murialti and Anriva, 2015). Human development according to the United Nations Development is a stage in expanding choices for the population, it can be judged that the population is the ultimate goal of development, meaning that development does not only emphasize economic growth (Todaro and Smith, 2013). HDI explains how humans as citizens are able to access the results of buildings for income, health, education, and many other things.

Although physical capital and technological progress make a major contribution to economic growth, the role of human capital in economic development cannot be forgotten, because no matter how advanced physical and technological capital is, if human capital is not paid attention to, it will actually have a bad impact on social life (Bado *et al.*, 2017). Humans, physical capital, and technological progress are 3 aspects that interact with each other in the economic development of a country. There are three main things in the development of a nation, namely regarding human resources, technology and funds. The three main factors are inputs in

the production of national income. The greater the number of human resources, the greater the national income and the higher the economic growth of a country(Purwanto, 2006). Referring to the Human Development Index Report 2020, the development of economic growth and human development index are as follows:

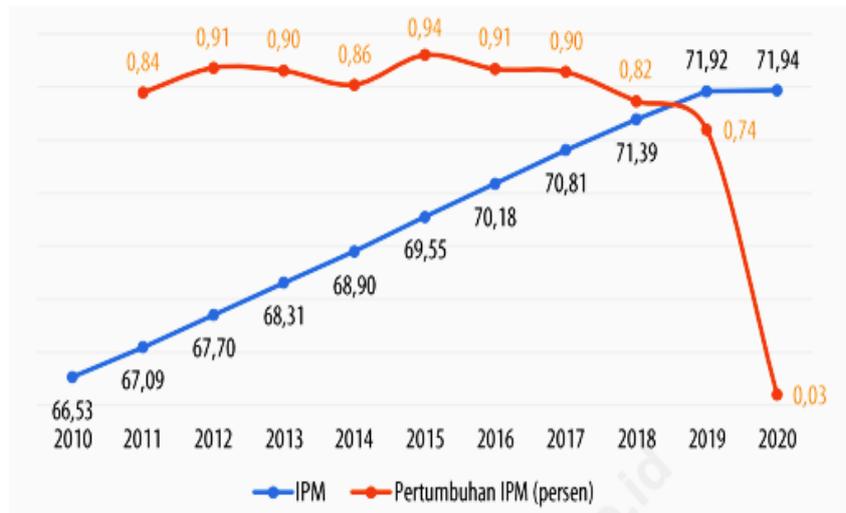


Figure 3. Development of Indonesia's Human Development Index (HDI), 2010-2020(BPS, 2020)

HDI growth in the midst of the COVID-19 pandemic slowed in all provinces. Bali is the province most affected by the COVID-19 pandemic. Bali's economy in 2020 recorded a negative growth of 9.31%. This is because the tourism sector as the main contributor is greatly affected by the pandemic and the implementation of social restrictions. This impact has even been felt for Bali since the first quarter of 2020 which recorded a negative 1.2% growth (year on year / yoy). The next provinces that were also most affected were Riau Islands (3.8%), Banten (3.38%), and East Kalimantan (2.85%). In general, the Indonesian economy grew 2.07% in 2020, the lowest since the 1998 Indonesian economic crisis of 13.13% (Jayani, 2021).

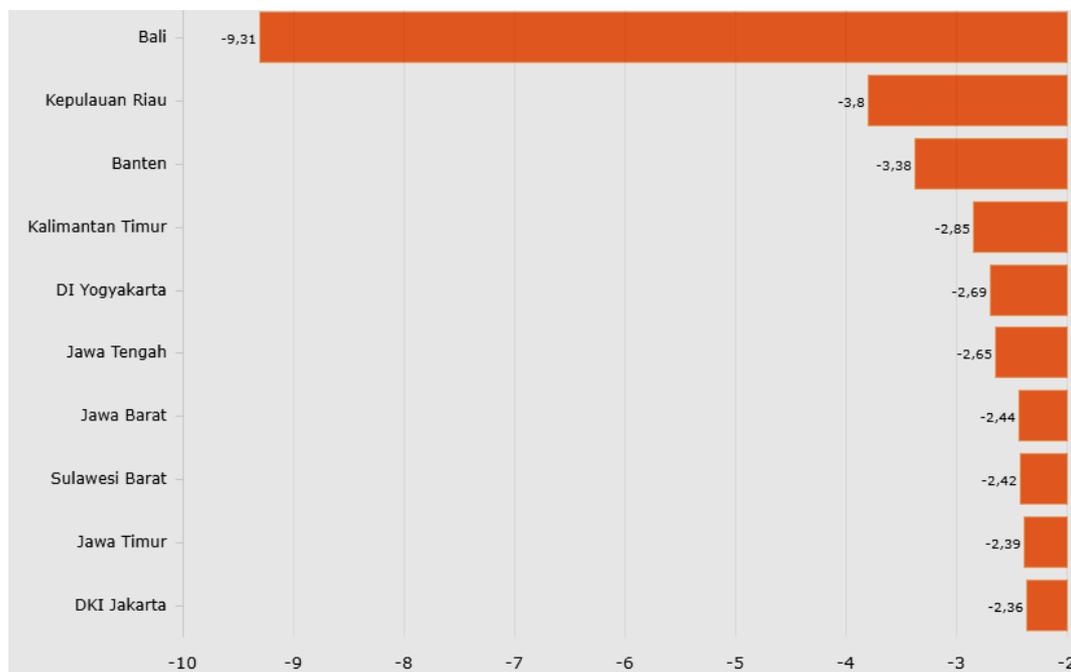


Figure 4. The Provinces with the Lowest Economic Growth 2020

In terms of position, the HDI comparison between provinces has not changed much. The highest HDI achievement in 2020 was still achieved by DKI Jakarta Province (80.77), while the lowest achievement was occupied by Papua Province (60.44). When compared with the national figure, there are 11 provinces that have HDI achievements above the national figure.

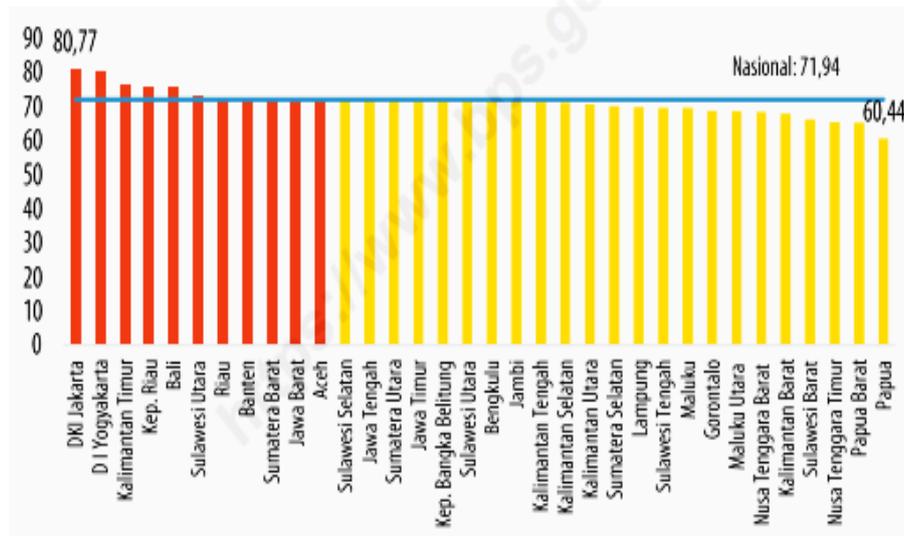


Figure 4. HDI Conditions In Various Provinces(BPS, 2020)

Based on research conducted by Astri, there is a simultaneous influence of the level of influence of local government spending on the education and health sectors on HDI (Astri, Nikensari and Kuncara, 2013). The results of the research conducted by Putra, that partially the variables of government expenditure in the fields of education and health have no significant effect on HDI (Putra, 2017). Human capital is a tool that influences the economy in a country to grow and develop. Education and skills can encourage an increase in capital stock so that it can encourage greater productivity of existing capital(Manish, 2014). A high HDI will encourage the welfare of the population, where the level of welfare of life can be measured from the health side which is seen in the life expectancy, from the education side, namely the literacy rate, and the average length of schooling, then from the economic side it is seen in per capita expenditure real(Ariza, 2016). Based on this phenomenon, the formulation of the problem is as follows: How is the direct influence of economic growth and government spending for education on the human development index, How is the effect of economic growth and government spending for education on education and How is the effect of education on the human development index.

RESEARCH METHODS

This research is a hypothesis testing research which aims to test the hypothesis proposed by researchers regarding the effect of economic growth and government spending on education on education that has an impact on human development. The research method is quantitative in the form of associative which uses two independent variables, one intervening variable and one dependent variable. The variables used in this study are the dependent variable, namely the human development index, the independent variable, namely economic growth and government spending on education and the intervening variable, namely education. This research plan will be carried out during 2021. This research is carried out in all provinces in Indonesia which are administratively registered with 34 provinces.

The data used is secondary data sourced from BPS Indonesia with 34 provinces obtained from the 2020 Human Development Index Report, the Education Balance of each province, and the Indonesian Statistics Report. This analysis is to test the effect of the variable intervention. Path analysis is the use of regression analysis to estimate the causal relationship between

variables that have been determined based on the theory in the previous chapter. The structural equation for the path analysis can be formulated as follows:

Structural model I: $Y_1 = 0 + 1LnX_1 + 2LnX_2 + e$

Structural model II: $Y_2 = 0 + 1Ln X_1 + 2Ln X_2 3Ln Y_1 + e$

Information:

Y1= Education

Y2= Human Development Index

X1= Economic Growth

X2= Government Expenditure on Education

e= error term

Structural Model Hypothesis Testing

Hypothesis testing is part of the research process with the aim of determining the answer whether the hypothesis is rejected or accepted. In social research, hypothesis testing is one of the stages of research with a quantitative approach. The process of testing the hypothesis using formulas and statistical calculations. Coefficient of Path Analysis, path analysis was carried out using multiple regression methods through the SmartPLs Version 3 program to see the effect of the independent variable on the dependent variable.

Structure Model 1 is the first regression looking at the relationship between economic growth and government spending on education on the human development index in Indonesia, which is presented as follows:

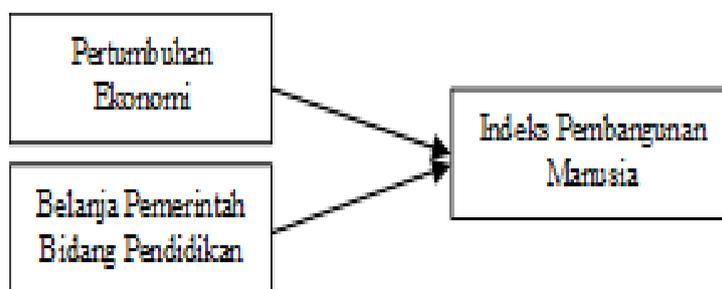


Figure 5. Direct Effects of Economic Growth and Government Expenditure Education Sector to HDI

Structure Model 2 is to look at the relationship between economic growth and government spending on education on education which has an impact on the human development index in Indonesia.

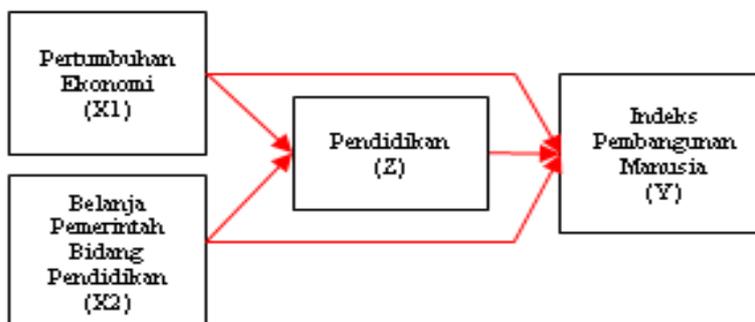


Figure 6. Indirect Effect of Human Development Index through Education

RESULTS AND DISCUSSION

Multicollinearity Test (Collinearity Statistics/VIF)

Based on the results of the Collinearity Statistics/VIF test, it is known that all variables do not experience multicollinearity as indicated by the following table:

Table 1. Collinearity Statistics (VIF)

	Indeks Pembangunan Manusia	Belanja Pemerintah Bidang Pendidikan	Pendidikan	Pertumbuhan Ekonomi
Indeks Pembangunan Manusia				
Belanja Pemerintah Bidang Pendidikan	1.006		1.003	
Pendidikan	1.311			
Pertumbuhan Ekonomi	1.308		1.003	

Source: processed data (2021)

Hypothesis testing

Furthermore, to prove the hypothesis testing, a significance test was conducted to determine the relationship between exogenous variables and endogenous variables. The significance criteria are seen from the p-value. With a significance level of 5%, if the p-value between the exogenous variable and the endogenous variable is less than 0.05 then the exogenous variable has a significant effect on the endogenous variable.(Ghozali and Latan, 2015). On the other hand, if the value is greater than 0.05, it means that the exogenous variable has no significant effect in building endogenous variables, it can be seen in the following table:

Table 2. Hypothesis Test

<i>Variable</i>	<i>Coefficients</i>	<i>t-Statistics</i>	<i>P-Value</i>	<i>Result</i>
Government Expenditure on Education → Human Development Index	0.293	2,351	0.019	accepted
Government Expenditure on Education → Education	-0.048	0.332	0.740	rejected
Economic Growth → Human Development Index	0.194	1.070	0.285	rejected
Economic Growth → Education Intervention	0.482	2,760	0.006	accepted
Education → Human Development Index	0.612	3,383	0.001	accepted

Source: processed data, 2021

Discussion

Based on the results of the analysis show that public spending on education has a significant effect on the human development index. This shows that public spending on education is very important for the development of a country. Many experts argue that education is an important factor in the quality of human resources, which then contributes to the economic, social and community development of a country. The school system in Indonesia is the fourth largest in the world with more than 53 million students and 2.6 million teachers in more than 250,000 schools. Over the past 15 years, Indonesia has carried out many policy reforms to improve the quality of education, including the constitutional mandate to spend 20 percent of the state budget on education, decentralizing some functions in the education sector to the district/city level, and school. , and regulate teachers and professors in Law no. 14/2005 to improve teacher quality. In 2018, spending in the education sector was higher than in other

sectors (Sanggolongan, Rumat and Siwu, 2015). This is also in line with research conducted (Putra, 2017) that the priority of public spending in education is actually able to increase the human development index.

However, it turned out that public spending in the education sector failed to solve the problem of education and the results of processing the data obtained showed that public spending did not have a significant impact on education. According to a World Bank report, basic education has almost continued in Indonesia, but there has been a slowdown in lower secondary education, with only 55 percent of children from low-income families continuing on to secondary school. Furthermore, Indonesia is still included in the category of a low-level country on international standard student achievement tests, although taking into account economic conditions. Although spending on education increased dramatically due to the introduction of the 20 percent budget rule, it was \$491 trillion in 2019, and local governments (Pemda) are responsible for the majority of public spending on education. In 2018, only about 37 percent of total education spending was borne by the central government, while the remaining 63 percent was channeled through transfers to local governments, so Indonesia's investment in secondary education, especially junior secondary education, is still low. At the same time, operating budgets have been cut due to significant increases in salary spending and large gaps still exist in the level of school fees, individual student spending, student learning outcomes, teacher quality and administrative capacity in district/city schools.

Furthermore, the variable of economic growth due to the results of data processing has no significant effect on the human development index, because new economic growth is a necessary condition. In order for economic growth to be in line with human development, economic growth must also be followed by equitable development. According to research, the effect of equitable development is that every resident has the same guarantee to enjoy the results of development. In this case, income distribution is an important component where income distribution opens the possibility of equitable distribution of public education, which in turn increases the level of labor productivity. The result is education was also found to have an impact on the human development index, and education is also a variable that can mediate government spending on education and economic growth towards human development to advance Indonesia.

CONCLUSION

Spending on education needs to be reviewed to whom or what the budget is used for, because local education spending is currently dominated by wage-related spending and leaves limited resources for non-wage spending. Whereas on average, local governments spend 75% of their total education budget on salaries, while in extreme cases, 32 districts/cities spend more than 90% of their budgets on salaries. Furthermore, the analysis of selected districts/cities shows that the non-wage spending category also includes a wage component for non-SNP (National Education Standards (SNP) teachers, which further reduces the resources actually available for non-wage spending. Case studies for selected districts/cities show that actual or de facto non-wage expenditures only represent around 14% of the total education budget. The non-wage budget is intended to finance various programs and activities, such as scholarships, additional school assistance, teacher training and other operational costs, which are important for improving student learning outcomes. However, many districts/cities do not have the flexibility to implement the program because of the large fixed costs for salaries.

In order to improve education and the Human Development Index in all provinces in Indonesia, the government should use the APBD budget to further increase the proportion of its budget allocation in education, especially to pursue education in remote and underdeveloped areas in each district. / city of North Sumatra province and must provide education guarantees for the poor, such as scholarships and improvement of educational facilities equally for all

regions; and to increase life expectancy, the government must build health facilities that are accessible to the poor, especially in disadvantaged areas, which means not only building health facilities in district capitals but also reaching disadvantaged areas. Furthermore,

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