

# The Influence of Government Spending in Education and Health Sector Towards Human Development Index in Java Island

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**Abstract:** Development paradigm is shifting from being only focused on economic growth to human-centered development. Education and health are the most powerful capital that have to be owned by a region to accelerate its potency and improve quality of human development. HDI is an indicator used to show the quality of human life, and can be used to determine the ranking or level of development of a region. This study aims to analyze how the government spending in education and health sector affect the HDI in Java Island. This study uses panel data regression consist of 113 municipalities/regencies over ten years period of 2010-2020. The results of this study show that the both government spending in education and health have positive significant effect on HDI. Based on the results of estimates, government should maintain the ability to realize budget allocations for government spending in subsequent years especially on education and health sector to build sustainable human development.

**Keywords:** government spending, education, human development index, panel data regression.

**Abbreviations:** HDI (Human Development Index).

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## Introduction

Development is a multidimensional process that includes various fundamental changes to social structure, societal attitudes and national institutions, while continuing to pursue accelerated economic growth, handling income inequality, and poverty alleviation (Todaro, 2006:6). The economic development of a region is essentially a series of activities that are carried out consciously and continuously to create a better condition together and continuously. Within this framework, economic development also aims to spur development equity and its results in the framework of increasing people's welfare in a fair and equitable manner. One of the important benchmarks in determining the success of economic development is economic growth which illustrates a real impact from the implemented

development policies. Currently, the development paradigm which initially only focused on economic growth has shifted to become more focused on human resource development. In 1990, UNDP developed the idea of measuring human development in the form of the Human Development Index (HDI). The Human Development Index (HDI) is an important indicator in seeing the other side of development. HDI is used as a tool to measure success in efforts to build the quality of human life (community/population). HDI can determine the rank or level of development of a region/country. For Indonesia, HDI is strategic data because apart from being a measure of government performance, HDI is also used as an allocator for determining the General Allocation Fund (DAU).

As explained by the World Bank's World Development Report 1991 (Todaro and Smith,

2006), the main challenge of development is to improve the quality of life through better education and the enhancement of health standards. Furthermore, study by Razmi (2014) shows that government expenditure in health sector influence human development in Iran. Meanwhile, Edeme (2014) in his research states that government social spending (education, health, rural infrastructure development and water resources, agriculture, housing) can affect the success of human development. In the future, public services such as education, health and social protection is expected to enhance the capacity of human capital. Then Martins and Veiga (2013) in his journal entitled *Government Size, Composition of Public Expenditure, and Economic Development* results indicate that the magnitude of government spending has an effect on the growth rate of the Human Development Index (HDI), especially in high-income and advanced regions. The field of defense, education and social protection have a relationship of U curve with human development. While the health field has an inverted U curve relationship. Fattah, Muji (2012) under the title *Government Expenditure Allocation Toward Human Development Index at Jeneponto Regency, South Sulawesi*. This research was conducted in Jeneponto district of South Sulawesi using data from 1998-2007. The study used multiple regression models to estimate and analyze the effect of government spending on HDI in Jeneponto. The results show that the allocation of government spending on education, health and infrastructure has a positive and significant effect on improving HDI. Thus, spending on human development through the provision of basic services will greatly affect the quality of human capital in the future.

Based on Statistics Indonesia Report, HDI in Indonesia shows an increasing trend in the period 2010-2020 with an average of 0.76% per year. Since 2010, Indonesia's HDI has continued to grow consistently. In 2020, HDI growth at the regional national level faces challenges by slowing growth due to the Covid-19 pandemic that has hit Indonesia and most countries in the world. The slowdown in HDI growth was generally caused by slowing growth in life expectancy and education,

as well as decreased real spending per capita as a result of the contraction in economic growth. Java Island as the centre of Indonesia's economy even still face disparity problem on HDI. When Kota Yogyakarta has the highest score of HDI (87.18), while Sampang has the lowest score of HDI (62.80).

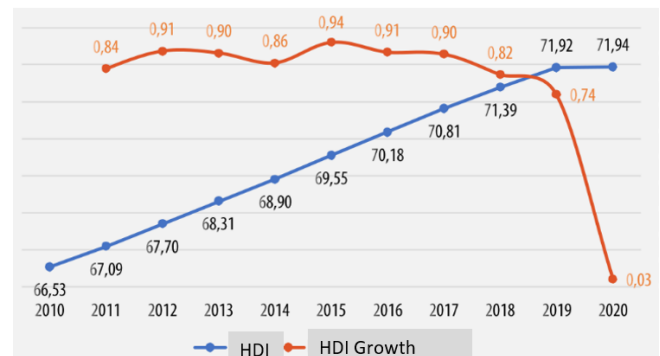


Figure 1. Development of HDI Score.

The government's efforts to increase the HDI are carried out through fiscal policy instruments, in which the provision of basic services is carried out through a budget mechanism. In the education sector, according to article 31 paragraph (4) of the 1945 Constitution which was amended in 2009, the state prioritizes an education budget of at least 20% of the APBN and APBD to meet the needs of implementing national education. However, not many local governments, both provincial and district/city, have allocated 20% of their APBD for education. So far, only the provincial government of DKI Jakarta has allocated 22.29% of its APBD for education. In terms of the health budget, referring to Law No. 36 of 2009, the salary of health workers should not be counted as 5% of the health budget. However, in practice salaries are still calculated as a 5% portion of the APBN for the health budget. The definition and allocation of the health budget included in the Health Law No. 36 of 2009 is too broad, so there is the potential for multiple interpretations and it provides space for the allocation of health expenditure to not match the proper allocation. Until now, there are no regulatory instruments that are operational in nature and can be used as a guide in allocating and utilizing the budget in accordance with the mandate that has been set.

From the background above, this study aims to determine the effect of government spending on

education and health and towards the achievement of human development index, and also to address what is the most influential sector regarding the development of HDI in Java Island. Panel data were used in this study for the estimation and it was measured by STATA 17.

**Materials and Methods**

**Study area**

This study uses a quantitative approach which is a systematic scientific study of the parts with phenomena and relationships. Characteristics of data and information used by researchers in this study is macro, so the quantitative approach relevant to this research.

**Procedures**

Research using panel data with a time lag of three years (t-3) for the education and health sectors, for the education sector it uses the ratio of education function spending to the Regional Revenue and Expenditure Budget or Anggaran Pendapatan dan Belanja Daerah (APBD), while for the health sector it uses the ratio of health function expenditure to the Regional Revenue and Expenditure Budget using the unit of analysis of the district and the city in Java Island from the year 2010 to 2020.

**Data analysis**

This study analyzed the effect of government spending on education, health sector of all districts / cities in Java Island towards its Human Development Index. This study is using the model of multiple linear analysis. For the purposes of this analysis, the determination of variables is based on the previous research and theory of government spending. The allocation of economic growth for human development is a function of three things, namely the total public sector expenditure, how much is allocated to sectors related to the improvement of human development and how these funds are allocated into these sectors (Ramirez, Ranis and Stewart, 1998 in Anang Wijayanto, 2014). Government spending on human development through the provision of basic services will greatly affect the quality of human

capital in the future. Suharto (2009) which the specification of the model as a model estimation using three independent variables. The general form the model used is as follows:

$$HDI_{i,t} = \beta_1 + \beta_2 EDU_{i,t-3} + \beta_3 HEALTH_{i,t-3} + \varepsilon_{i,t}$$

which:

HD<sub>it</sub> = Districts/Cities HDI (i) in Java Island in year (t)

EDU<sub>it-3</sub> = Education expenditures based on education function spending toward the total Spending of Districts/Cities (i) in year t-3 (in Rupiah)

HEALTH<sub>it-3</sub> = Health expenditures based on health function spending toward the total Spending of Districts/Cities Government (i) in year t-3 (in Rupiah)

**Results and Discussion**

The results of estimation using panel data effect of government spending on the Human Development Index (HDI) was found to have a positive and significant influence in all sectors: education and health sector.

**Table 1.** Estimation Result

Independent Var	Coefficient	T stat	Prob
Cons	5.983479	11.29839	0.000*
Education (-3)	0.272737	4.782792	0.000*
Health (-3)	0.139138	1.934293	0.015*
<b>R square</b>	<b>0.8215</b>		

The results of the estimation using dependent variable which is HDI and the independent variables in the form of government spending on education, health sector show the positive effect with coefficient of education, health sector respectively 0.273 and 0.139. The higher government spending on education and health sector will further enhance human development in the area. This finding is consistent with study conducted by Fattah (2012) and Pudjiharjo (2019)

## Discussion

### **Influence of Government Spending on Education Sector towards the HDI**

Human Development Index is an important indicator for measuring the level of success in the development of human quality. Moreover, education is one of the reflections of human development success and it is the government's task to carry out the development. Education is a component of the HDI, it influences on higher job opportunities and better salaries. This is in line with the concept of human development by UNDP which is the process of expanding choices for people as well as a level that can be achieved from these efforts. Government spending is channeled to the field of education programs such as 9-year compulsory education, scholarships, school buildings, the revitalization of school buildings and the provision of equipment to support learning. It is marked by the increasing number of schools from 59,654 in the year 2010 72,913 in 2020 in all regencies / cities in Java Island, followed by the increasing number of students from 116,548 in 2010 to 242,365 in 2020. It was conducted as an effort to enhance sustainable students' participation due to the relatively large population of young ages that required more adequate supporting education facilities. Furthermore, with the increment of literacy rate or Angka Melek Huruf (AMH) from 96.34 in 2010 to 97.95 in 2020, and Average Length of School or Rata-rata Lama Sekolah (RLS) of 8.31 in 2010 to 8.54 in 2020, it means that the government's efforts through expenditures education is considered successful. The Indicators of RLS and AMH are the combination of indicators that used as an index of education, as one of the components that construct the HDI. The positive effects of government spending on education can also be seen from the increment of school participation rate except APS age group 13-15 years, which is decreased slightly in 2013. APS is a basic indicator that is used to observe the access of inhabitants to school-age facilities. So, we can say that the policy of government spending on education is an investment that can directly improve the quality of people as well as the HDI. This is in line with the research conducted by Sanggelorang, Rumat,

Siwu (2015), that the local government spending in the education sector has a significant influence on the HDI, where any change in expenditure will be followed by changes in the HDI. The Increment of spending on basic education sector that distributed evenly will accelerate human development (Gupta, Clements, and Tiongson, 1998). In macro theory, according to Adolf Wagner's theory, government spending and government activities are increasing. This tendency by Wagner called the law is always the increasing role of government. The essence of Wagner's theory is the increasing role of government in the activities and economic life of society as a whole. Thus, the policy of the local government to increase the education budget will influence more of local government expenditure on education sector towards the HDI.

### **Influence of Government Spending on Health Sector towards the HDI**

Health factor is one of crucial needs for human development. The development in health sector is intended to improve the degree of public health. The degree of community health can be seen through mortality, morbidity and nutritional status. The achievement of health development goals is a serious concern for all levels of health workers and stakeholders in Indonesia. Provision of health facilities become one of the efforts to improve the health development in Jva Island. Health status amongst regencies/municipalities in Java Island is illustrated by the Life Expectancy Rate or Angka Harapan Hidup (AHH), Infant Mortality Rate or Angka Kematian Anak (AKK), Mortality Rate or Angka Kematian Ibu (AKK), morbidity and nutritional status of some diseases. Health is a basic need for human, because through healthy body, a person can do all the activities to meet the necessities of his or her life such as education, work and socializing. Government spending on health sector is an investment undertaken by the government for the health sector in the development process. Health expenditures are intended for the construction and rehabilitation of health facilities and Health Operational Assistance or Bantuan Operasional Sekolah (BOK), Which focuses on the promotion of preventive health measures, immunization, public nutrition

improvement, health promotion, environmental health and disease control, and other health efforts. The positive and significant effect of government spending health sector is characterized by the increasing number of health facilities such as community health centers or Pusat Kesehatan Masyarakat (Puskesmas) that increased from 51,863 to 72,347 in 2020 in all districts / cities in Java Island. The decrease of infant mortality cases in Java Island from 352 in 2010 to 158 in 2020 was also showed a positive sign, in terms of government attention in health sector, particularly towards the health of infants. It was shown a positive correlation with the increase of Neonatal Coverage Visits or Kunjungan Neonatal (KN1) from 81,50 in 2010 to 93.28 in 2020. Furthermore, the Infant Mortality Rate (IMR) is showing the socio-economic conditions of local people, because infants are the most vulnerable age group related to the impact of changes in social and economic environment. The indicator of IMR is directly related to the target of child survival and also reflect the socioeconomic conditions, living environment and health. Indicators that associated with morbidity and infant mortality are important and often used to measure the progress of a region, in particular, the improvement in the field of health. Moreover, the number of Maternal Mortality Rate (MMR) also decreased from 71 to 65. MMR is one of the sensitive indicators that depict the welfare of people in a country. Subsequently, Nutritional status in Java Island also experienced a positive trend, which shown by the decline of malnutrition cases from 24.6 in 2010 to 22.3 in 2020. The nutritional status of a person has a close relationship with general health issues due to its status as the predisposition factor that can aggravate infectious diseases directly and at the same time can cause health problems for the individual. In addition, the health sector was shown a positive condition through the increment of life expectancy (AHH) from 71.45 in 2010 to 72.68 in 2020. AHH shows the degree of health status of an area that is used as the basis of government health programs in order to achieve better public health quality. The increasing degree of public health means the greater government spending will bring a positive effect on human

development in the district / city of Java Island that through the improvement of AHH as one of HDI components. So, the goal of health development that set by the government to provide sustainable health financing in sufficient quantities and also allocated and utilized it equitably, effectively and efficiently can be absorbed optimally. This is in line with research by Razmi (2012) who found a positive and significant influence between government health spending to the HDI due to government health spending is a service that is used for disease prevention. The portion of the government's budget is used to improve public health, public awareness, promotion of health and development of the role of non-governmental organizations active in health. the results of the study showed a positive and significant relationship between government spending on the health sector human development index.

### Conclusions

This study aims to determine the effect of government spending on the education sector, health sector and social protection sector on the Human Development Index (HDI) in Java Island. The enhancement on education budget can bring implications to the improvement of public services quantity and quality in education field such as the increasing number of students, educational facilities and a wider range of up to the outposts. Moreover, the increment on health budget can implicate to the improvement of public health which is reflected in the enhancement of life expectancy, the decline of Infant Mortality and Maternal Mortality figures, the decrement of malnutrition number. The expenditure on health and education sector are used by the government to meet the basic needs of society in order to bring prosperity to people and also as an effort for human development which reflected in the Human Development Index. So, the human capital will be increased through the education, health and social welfare. In this study, the most influential Government spending is one education sector. It is seen from the regression coefficients government

spending in education which is greater than the expenditures on health and social protection sector.

In addition to education, health, decent living standards that are components of HDI formation, perhaps the government needs to evaluate additional other support components such as security conditions. Because humans are not enough just by education, health and decent living but a person's security conditions also greatly affect human life, because if a person feels insecure then he cannot do activities well. The government should give more scholarships along with more guidance for students and parents regarding the continuity of their education. Through higher education, human beings can improve their capability in context of productivity and creativity. Furthermore, health spending should give more emphasis on prevention activities, such as providing programs that can support public health, healthy living and the education about nutrition. Meanwhile, for the social protection expenditure budget, the government should enhance and rectify the quality of beneficiary data from being misplaced.

**Conflict of Interest:** The authors declare that there are no conflicts of interest concerning the publication of this article.

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