The Role of Local Governments In Improving The Quality of Human Development

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A B S T R A C T

Local governments, through their own spending budgets, must intervene in improving the quality of human capital. Government spending on education and health is part of government spending that can encourage improvements in the quality of human capital. This study aims to determine the interaction relationship between government spending and human development. This research was conducted in 491 districts / cities in the 2010-2019 time period. The use of the Fully Modified OLS (FMOLS) analysis method with panel data. The results of this study indicate that the interaction of government spending on education and health has a long-term impact on improving the quality of human development. Government spending on education and health is known to have a positive effect on improving human capital. The importance of public investment for improving the quality of human capital through education and health so as to increase the standard of living and welfare of the community.

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INTRODUCTION

Development is a continuous and continuous process of multidimensional change that includes various economic, social, cultural, political, and other aspects (Todaro and Smith, 2012). Indonesia's economic development in 2020-2024 has development targets that focus on four aspects, namely pro-growth, pro-poor, pro-job, and pro-equity. Economic development must have quality and inclusive economic growth and be able to create jobs that can have an impact on increasing income so that it can reduce poverty and equalize income (Kakwani, 1993; Ravallion and Chen, 2003).

The implementation of development in districts/cities in the era of regional autonomy and fiscal decentralization began on January 1, 2001. Regional Development in the era of fiscal decentralization must have the principle of regional independence as the impact of delegation of authority in all fields accompanied by sources of funding. The delegation of authority followed by the delegation of funding sources makes economic development more efficient because local governments better understand the needs of their own regions (Tiebout, 1956; Oates, 2008; Hayek, 1948; Faguet, 2001). Local governments are also expected to be able to fulfill and provide public goods and services in accordance with the preferences of local communities (Oates, 1972; Tiebout, 1956; Davoodi and Zou, 1998; Lockwood, 2006).

Local governments are given financing to support the sustainability of regional development which is sourced from the Regional Revenue and Expenditure Budget (APBD). The regional expenditure/expenditure component in the APBD is the embodiment of fiscal decentralization on the expenditure side where regional governments have great authority to determine budget priorities that are tailored to needs (Sijabat, 2017). Local governments with APBD have three main functions, namely efficient allocation of resources, distribution of income, and macroeconomic stability (Musgrave, 1959). The allocation of resources including expenditure components in the APBD that is carried out efficiently and effectively is the key to the success of regional development (Reeves et al., 2019). Regional budgets are allocated according to the choice of regional development priorities depending on the potential and conditions and situation of the region (Solihin et al., 2017).

The success of regional development must be achieved by using the limited APBD effectively and efficiently. District/city governments must be able to utilize all available resources to realize quality economic growth and be able to overcome problems of poverty, unemployment and income inequality. Development problems, especially poverty, are closely related to the low quality of human development (Becker, 2002). Therefore, human development plays an important role in the process of economic development of a country. Good and sustainable human development will have an impact on high and more inclusive economic growth (Mincer, 1996). Improving the quality of human development will affect the success of individuals so that collectively it will affect the economic success of a country, such as increasing community welfare and reducing poverty (Becker, 2002).

The development of an area can be said to be successful if it is supported by good economic growth and sustainable human development (Schultz, 1961). Human capital investment is the right step to overcome the low quality of human development. This should be the main concern of every local government as a public policy holder to overcome these problems. Local governments through regional budgets and revenues (APBD) can be used as a stimulus to drive economic growth and increase human development (Mankiw, 2000; World Bank, 2006).

The same thing was conveyed by UNDP (2004) in improving the quality of human development, the government, especially local governments, can make two efforts, namely the path of increasing economic growth and the path of government spending in the fields of education and health (Rasyid et al., 2020). Regions that have higher and inclusive economic growth will have a greater potential in income distribution so that it will have a direct impact on increasing per capita income and improving the quality of human capital (Jhingan, 2008).

According to the theory of endogenous growth, government spending on education and health is an important component in increasing human capital (Lucas, 1988). According to Lucas (1988) an increase in people's welfare can occur because human capital has an internal productivity effect as well as an external productivity effect. Human capital will internally increase the productivity of the individual internally, while externally will have an impact on the productivity of other individuals at a certain level. Improved welfare by improving the quality of human capital will result in reduced poverty and unemployment as well as an increase in the quality of human resources in the future.

The basic theory of the importance of human capital in development includes the theory of human capital proposed by Schultz (1961), human capital is defined as a form of investment in the field of knowledge and skills acquired through the education and training process as a form of increasing individual income. According to Becker (1975), human capital is a form of individual investment in the form of increasing knowledge and skills as well as improving health levels. The better human capital owned by individuals (education and health) will have an impact on a substantial increase in the individual's income (Becker, 1975; Mincer, 1974).

Various literatures that emphasize

the general and specific impact of government spending (education and health expenditures) have interacted with increasing human development (Omodero, 2019; Edeme and Nkalu, 2019; Baldacci, et al., 2008; Angirst and Lavy, 1999; Lokhsin and Yemtsov, 2005; Maitra and Mukhopadhyay, 2012; Razmi, et al., 2012). In fact, according to Anand and Ravallion (1993) government spending in the form of public services not only has an impact on increasing human capital but also has an impact on improving people's poverty conditions. Improving the quality of human capital will bring economic impacts and benefits such as income distribution, high productivity and reduced unemployment (Becker, 1975; Santos, 2009; Silva and Sumarto, 2014; Fisher, 1946; Schultz, 1962; Teixeira, 2014; Roemer, 1998; World Bank, 2005; Attanasio, et al., 2017; Bhukuth, et al., 2018).

Several previous studies conducted in Indonesia have discussed the role of government spending in increasing human capital (Priambodo and Noor, 2016; Sofilda and Hamzah, 2015; Mirza, 2012; Aziz, 2020). It is not only government spending that affects human capital but regional financial performance also plays an important role in maintaining the sustainability of human development in the region (Makrifah, 2010; Honohan, 2004; Prasetyo, 2015). Government spending on education and health is a component of regional spending that plays an important role in increasing human capital (Putra, 2017; Astri, et al., 2013; Kahang and Budi, 2017; Palayukan, 2019; Fadilah, et al., 2018; Fattah and Muji, 2012; Sanggelorang, et al., 2015; Wijayanto, et al., 2015; Sulistyowati, et al., 2017; Utami, 2007; Sumas, 2012; Lubis, 2017; Priyanto, 2011; Pahlevi, 2017). However, different results indicate that government spending on education and health does not significantly affect the development of human capital (Wibowo, 2014; Prasetyo and Zuhdi, 2013; Badrudin

Figure 1.
Number of Large and Medium Scale Companies in the Manufacturing Industry, 2013-2017

and Khasanah, 2011; Maharda and Aulia, 2020; Riphat, et al., 2016). Well-developed human capital will have an effect on poverty reduction (Nurdyana, et al., 2012; Cholili, 2014; Nurmainah, 2013). Human development also affects economic growth and increased employment in a region (Nurmainah, 2013; Yudhoyono, 2004). The impact of increasing human capital investment will also have an impact on increasing labor productivity and will then boost GRDP (Sitepu, 2007; Rahmawati and Intan, 2020). The previous studies that have been carried out have mostly focused on the research level of the province or several districts within one or several provinces.

This research covers all districts/cities in Indonesia with a fairly long period of time from 2010 to 2019. The importance of this research is focused on the district/city level throughout Indonesia to determine the direct impact of government spending on increasing human capital. Government spending, especially for education and health spending, is not only a large budget but also requires effectiveness in the accuracy of spending targets (Reeves et al., 2019; Tiebout, 1956; Oates, 2008; Hayek, 1948; Faguet, 2001). Therefore, it is necessary to research with district/city level objects as a whole because the handling of human development at the district/city local government level is actually considered more effective and more efficient when compared to efforts to tackle poverty nationally (Bardhan and Mookherjee, 2005; Von Braun and Grote , 2002).

METHODOLOGY

This study aims to determine the relationship of government spending in the development of human development in the fields of education and health to the human development index. A two-way interactive model is used to measure the impact of government spending on education and health on improving the quality of human development when the proportion of spending on education and health meets the criteria in accordance with Indonesian legislation. Health spending according to Law No. 36 of 2009 is at least 10 percent of the total APBD, while education spending according to Law No. 20 of 2003 is at least 20 percent of the total APBD.

Multiple linear model with interactive terms using multiplication between government spending on education and health. The use of multiplicative terms in this modeling is represented on a dummy scale, namely the value 0 for the proportion of government spending on education and health that does not meet the statutory criteria, while the value 1 is for the proportion of government expenditure on education and health that meets the statutory criteria. Interactive and multiplicative provisions are able to predict the effect of government spending on education and health on improving the quality of human development in regencies/cities in Indonesia.

The use of multiple linear modeling with interactive conditions in this study is in line with previous studies such as Brambor, et al. (2006) and Burrill (2003) who are able to describe the interaction between the dependent variable and several explanatory variables in a linear manner. The use of interactive terms is also used by Osabuobien and Efobi (2013); Osoba and Tella (2017) in describing the relationship between the components of human capital investment and economic growth. Research Olopad, et al. (2019) also uses a multiple linear model with interactive conditions to determine the relationship between government spending on education and health on poverty in OPEC countries. Equation (1)

$$ipm_{it} = \alpha_0 + \alpha_1 educ_{it} + \alpha_2 d.health_{it} + \alpha_3 educ_{it} * d.health_{it} + \varepsilon_{it}$$

Equation (2)

$$ipm_{it} = \beta_0 + \beta_1 health_{it} + \beta_2 d.educ_{it} + \beta_3 health_{it} * d.educ_{it} + \varepsilon_{it}$$

In equations (1) and (2), HDI represents the condition of human development,

educ is government expenditure in the field of education (in the form of a natural logarithm), health is a government expenditure in the health sector (in the form of a natural logarithm), educ*health describes the interaction between education expenditure with health expenditure. Variables d.health and d.educ are dummy variables for government spending on health and education, while i is district/city, t is year and is error term.

Equation (3)

$$ipm_{it} = \gamma_0 + \gamma_1 d.educ_{it} + \gamma_2 d.health_{it} + \gamma_3 d.educ_{it} * health_{it} +$$

$$\gamma_4 d.health_{it} * educ_{it} + \varepsilon_{it} \quad d.educ_{it} * health_{it}$$

describes the interaction of government spending in the health sector with the dummy variable of government spending in education, while $d.educ_{it} * health_{it}$ describes the interaction of government spending in the field of education with a dummy variable of government spending in the health sector.

The dependent variable in equations 1, 2 and 3 is the human development index obtained from the calculation of three indices, namely the health index, education index and income index (BPS, 2019). The independent variables in the three equations are government spending on education and health. Government spending on education and health is a public investment in improving the quality of human development. Improvement of human capital is the main driving force in economic growth (Ranis, et al., 2000; Andreosso and Callaghan, 2000). Improving the quality of human capital is a comprehensive development carried out to increase productivity capabilities through improving education, health and employment opportunities (UNDP, 2001; Bloom and Canning, 2003). Local governments as policy makers in the regions intervene in improving the quality of human capital, namely through government spending in the fields of education and health. The modeling in this study assumes that education and health are very influential on economic growth.

This study uses the Human Development Index (HDI) data sourced from the Central Statistics Agency (BPS), while data on local government expenditures in education and health are obtained from the Directorate General of Fiscal Balance (DJPK). The data population in this study covers 491 districts/cities in Indonesia with year intervals from 2010 to 2019.

The estimation technique carried out in this study using the Fully Modified OLS Panel (FMOLS) is due to determine the long-term relationship between the dependent variable and the independent variable and is able to estimate coefficients consistently by eliminating endogeneity and correlation that occurs in error terms (Ramirez, 2016; Kao and Chiang, 2001). The use of the OLS method is not used because according to Kaasschieter (2014) and Nickell (1981) it will fail to calculate the potential endogeneity that occurs in the explanatory variable and will cause dynamic panel bias problems. The use of the OLS method will also have an impact on the regressor correlation with the error term which will have an impact on consistency (Hsiao, 1986).

The stages for the FMOLS Panel estimation technique with a balanced panel are as follows:

1. Stationary testing with the unit root test identifies the stationary condition of the variable using four tests, namely Levin, Lin & Chu, IPS, ADF-Fisher and PP-Fisher. If there is a significant unit root test, there is a tendency for a long-term relationship between variables to occur (Phillips and Hansen, 1990).

2. Cointegration testing uses the Johansen Fisher Panel Cointegration to test the long-term relationship. If the cointegration test is significant, the FMOLS panel method can be used as an estimation technique (Phillips and Hansen, 1990; Origineye, et al.,

2018).
3. Analysis using FMOLS Panel

RESULT AND DISCUSSION

Unit root tests on panel data are derived from unit root tests of time series data. The unit root test on panel data has the aim of increasing the power of test by increasing the number of samples in cross-sectional and time-series. The results of the unit root test using the Levin, Lin and Chu, IPS, ADF-Fisher and PP-Fisher methods in Table 1 show that the three variables are not stationary at the level. However, the three research variables turned out to be significant at the stationary first difference. Therefore, according to Philips and Hansen (1990) and Origineye (2018), it is necessary to conduct a cointegration test to determine the long-term relationship between the three research variables.

The cointegration test results in Table 2 using the Johansen Fisher Panel Cointegration method show that the first difference is stationary variable. The use of the Johansen Fisher Panel Cointegration to provide evidence of the existence of a long-term relationship to government spending on education and health and HDI. Cointegration test results show that there is no cointegration between research variables. Statistically, Fisher Statistics shows that there is a rejection of the null hypothesis at the 5 percent level. The absence of cointegration between research variables indicates that the research variables have a long-term relationship, so a form of analysis method is needed that is able to capture long-term and short-term effects.

The estimation results using the Panel Fully Modified OLS method in Table 3

Table 1.
Panel Unit Root Test

Variable	Method	First Difference
Educ	Levin, Lin & Chu	-92.5828*
	IPS	-39.8926*
	ADF - Fisher	6569.90*
	PP - Fisher	8528.63*
Health	Levin, Lin & Chu	-80.5185*
	IPS	-38.4656*
	ADF - Fisher	5787.25*
	PP - Fisher	6230.48*
IPM	Levin, Lin & Chu	-12.0565*
	IPS	-22.1937*
	ADF - Fisher	992.196*
	PP - Fisher	1037.43*

*significant 5%

Tabel 2.
Johansen Fisher Panel Cointegration

Unrestricted Cointegration Rank Test (Trace and Maximum Eigenvalue)		
Hypothesized No. of CE(s)	Fisher Stat. (from trace test)	Fisher Stat. (from max-eigen test)
None	4120.*	3655.*
At most 1	1502.*	1338.*
At most 2	1325.*	1325.*

*significant 5 %

288

Tabel 3.
Estimation

Variable	Coeff.	t-statistic	Prob
Variable Dependent: IPM Obs: 4910			
d.health	139.6953	3.702472	0.0002*
d.educ	41.38925	2.897886	0.0038*
d.health*educ	-22.29221	-3.657747	0.0003*
d.educ*health	4.201373	1.279745	0.2007
R-squared	-16.90946		
Adjusted R-squared	-16.92583		
S.E. of regression	22.07857		
Long-run variance	151.1994		

*Significant 5%

show that there are differences in the quality of human development in regencies/cities in Indonesia due to differences in the amount of government spending in the fields of education and health. A large impact on improving the quality of human development is found in districts/cities that have government spending in the health sector above 10 percent of the total APBD of 139.69 percent. A different impact actually occurs in districts/cities that have spent 20 percent of the government budget on education from the total APBD, only being able to contribute 41.38 percent to the improvement of human capital in the regions.

The interaction between government spending in the health sector and the proportion of government spending on education in accordance with the law is only able to increase the HDI by 4,22 percent. The interaction of government spending on education with the proportion of government spending on health in accordance with the law has increased the quality of human capital by 22,29 percent. The proportion of government spending in the fields of education and health in accordance with the Act is significant in increasing human development in the long term. The high Adjusted R-squared value is due to the interactive effect between the variables of government spending on health and education.

CONCLUSIONS

Government spending plays an important role in the success of human capital improvement programs. Government spending on education and health has a long-term relationship to the development of human development. It can be seen from the results of this study that government spending on education and health that has met the standards of the legislation is able to boost the quality of human development for the better. This is a reference for every local government to try to budget spending, especially education and health in accordance with applicable laws and regulations. The use of the Fully Modified OLS (FMOLS) analysis method with panel data. The results of this study indicate that the interaction of government spending on education and health has a long-term impact on improving the quality of human development. Government spending on education and health is known to have a positive effect on improving human capital.

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