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Impact of Government Expenditure in Education, Health Sectors and Financial Inclusion on Human Development in Indonesia

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Abstract

The aim of this paper in to assess the impact of financial inclusion and government expenditure in education and health sectors in order to increase human development index. Government expenditure has important role to achieve and increase economic growth and welfare. Government fiscal policy spending in education and health sectors are kind of significant government policy to increase human development. This study found that financial inclusion has important contribution to human development. Financial inclusion has positive effect to the human development index components along with government expenditures in education and health sector. As the consequences, in the future the government should prioritize its budget in education and health sector in order to increase human resources quality in Indonesia.

Keywords
financial inclusion; government expenditures; human development index

I. Introduction

The success of a nation's economic development needs to be accompanied of improvements in other aspects of development and not only marked by its economic growth performances. According to Statistics Indonesia / BPS (2011), high economic growth in economic development can be accompanied by increasing of income inequality distribution and as well as increasing poverty rate. After World War II the most popular indicator used by authorities in measuring economic development achievements is per capita income (Gross Domestic Products (GDP) per capita. The United Nations Development Programme, UNDP (1990) then proposed a new alternative performance namely the Human Development Index, measured by the so-called Human Development Index (HDI) indicator. Human development index is main focus of this study. Development is a systematic and continuous effort made to realize something that is aspired. Development is a change towards improvement. Changes towards improvement require the mobilization of all human resources and reason to realize what is aspired. In addition, development is also very dependent on the availability of natural resource wealth. The availability of natural resources is one of the keys to economic growth in an area. (Shah, M. et al. 2020)

Our research also considers people access to formal financial services institution, the so-called financial inclusion. We consider financial inclusion should be incorporated to human development analysis. The main reason of this framework of thinking, because financial access and its relation to human development has not been much adequately explored in previous studies. In fact, previous studies which discussed the role of the financial sector, showed that differences in the quality of financial services in country are

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the distinguishing factor in the economic progress level in the world. On the other hand, previous studies on the interactions of financial inclusion and government education and health sector spending on human development are still limited. This study is one of several efforts to bridge the gap.

1.1 Formulation of the problem

The Human Development Index (HDI) is formed of components related to health, education and decent standard of living (Suhariyanto, 2015). The human development index at the national level is affected dan related to the aggregation of the Human Development Index at regional level. We hypothes that the central government fiscal policies and fiscal transfers through expenditures in education and health sector could affect and enhance human development index.

To support those government expenditures, availability of adequate fund is a necessary requirement. This depend and sometimes is limited by the budget constraint of government to finance its expenditures of central government (ministry of finance in Jakarta) as well as at provinces and regencies level. This government funds needs to be supported by positive performances of domestic financial sector and conducive global macroeconomic conditions. In this context, financial inclusion and economic activities created as result of increase financial inclusion, could be considered as a solution in achieving better economy performance in the future.

II. Research Method

2.1 Framework for Thinking

The Human Development Index (HDI) explains how population benefitted of economic development performances in obtaining income, health and education. To increase the Human Development Index is basically to boost its HDI subcomponents, namely: (1) life expectancy at birth (which represents health condition), (2) period of school expectations and mean years of schooling (which represents education condition), and (3) purchasing power (which represents decent standard of living).

Previous studies on the Human Development Index (HDI) in Indonesia are conducted by Usmaliadanti (2011), Saraswati (2012), Kahang *et.al* (2016), Sumas (2012), Kusharjanto and Kim (2011) to name several studies related to the issue. Usmaliadanti (2011) research found positif effect of government expenditures in education to increase HDI. The result of her study is quite similar to Agustina's *et al.* (2016) and Kahang's *et al.* (2016) study. Saraswati (2012) examined the benefits of allocating education funds by the Government. Sumas (2012) found that the Government's fiscal policy through increased purchasing power could increase the human development index. At different angle of view, Kusharjanto and Kim (2011) study the relation between level of infrastructure (which is electricity) and human development index. Now we can discuss purpose of human development index.

According to BPS (2015), the purposes of human development index are :

1. an indicator in measuring the success of the central and regional government in their effort to build a better quality of life for their people;
2. can determine the rank and level of the development in an area / province;
3. HDI in Indonesia is one of determinants to determine the amount of the General Allocation Fund (DAU) of the central government to regional governments, Budiriyanto (2011), BPS (2011) and (BPS 2017).

Value of Human Development Index (HDI) range between 1 to 100. The higher HDI means better HDI condition of the country or region. Basically increase of Human Development Index is the result of increase and affexted by its subcomponent that constitute the HDI. Subcomponents of HDI are life expectancy at birth or Angka Harapan Hidup (AHH), expected years of schooling or Harapan Lama sekolah (HLS) and mean of years schooling (RLS) and last but not least is the purchasing power indicator (gross national income / GNI) per capita.

According to BPS (2019) and Situmorang (2016), HDI in Indonesia is calculated based on (i). the geometric average of the health index (reflected by AHH), (ii).the knowledge index or the so called education index (reflected by HLS and RLS) and (iii).the decent standard of living index (reflected by adjusted annual expenditure per capita). The calculation of the three sub-indices are carried out by BPS by standardizing the minimum and maximum values of each index component. These variables are then used to calculate the value of each HDI subcomponents. For the long life (health) index and the education index are calculated using the following formula:

$$\text{Index } X_i = (X_i - X_{min}) / (X_{max} - X_{min})$$

Where :

X_i = each index represent of long life or Angka Harapan Hidup (AHH), expected years of schooling (HLS) and mean years of schooling (RLS)

X_{imin} = minimum value of X_i.

X_{imaks} = maximum value of X_i.

Specifically for the education index (IPEND), because it consists of two (2) components, namely HLS and RLS, the formula will be :

$$IPEND = (HLS + RLS) / 2$$

Decent standard of living Index (ILAYAK) is obtained by comparing the natural logarithm (Ln) value with the adjusted current per capita population expenditure:

$$\text{Decent Standard of Living Index} = \frac{\text{Ln (expenditure) - Ln (expenditure)}}{\text{Ln (max expenditure) - Ln (expenditure min)}}$$

The value of composite HDI can be obtained by the sum of each HDI forming components:

$$IPM = [(\text{index } X_1 * \text{index } X_2 * \text{index } X_3) \wedge 1/3] * 100$$

Where :

X_1 = long life (health) index

X_2 = education index

X_3 = decent standard of living index

Table 1. Structure of The Human Development Index (HDI)

Dimension	Variables
Health	Life expectancy at birth (AHH) : - Maximum treshold : age 85 - Minimum treshold : age 20
Education	a. Expected years of schooling (HLS) -Maximum treshold : 18 years

	-Minimum treshold : 0 year b. Mean years of schooling (RLS / MYS) - Maksimum treshold: 15 years - Minimum treshold : 0 year
Decent living	Adjusted expenditure per capita : - Maximum treshold Rp 26.572.352 - Minimum treshold Rp 1.007.426
Human Development Index	Geometric average

Sources :Situmorang (2016), BPS (2015)

Next we discus financial inclusion issue. According to the Indonesia Financial Services Authority / OJK (2016), financial inclusion is the availability of access to various financial institutions, products and services in accordance with the needs and abilities of the community in order to improve public welfare. Financial inclusion can transform communities previously underserved and have no access to formal financial institutions to become served and have access to the formal financial sector. Financial inclusion can contribute to reducing inequality, reducing poverty and encouraging an increase in the Human Development Index (Bank Indonesia, 2014), Ummah (2016).

Indonesia has also adopted a national policy that promotes financial inclusion. We consider this kind of policy is very relevant because some parts of our people do not yet have access to the formal financial sector, which is still quite a significant portion. In fact, lack of access to formal financial institutions is one of main reason why some people prefer to borrow from informal financial institutions, including money lenders even though money lenders usually charge interest rates much higher for their borrowing customers.

Several studies have been conducted, among others studies in Africa, by Okoye *et.al* (2017) and Williams *et.al* (2017). The study of Okoye *et al*. (2017), found that financial inclusion in Nigeria through rural lending also contributes to reducing poverty. The study is in line with the research of Williams *et al*. (2017). He found that financial inclusion through the addition of bank offices and Authomated Teller Machines (ATMs) as well as increasing of government spending have positive effect on poverty reduction.

Research on financial inclusion and human development among others, in India have been carried out by several researchers, some of them are Laha and Kuri (2011), Laha (2015), Gupta *et al*. (2014), Giri and Serawat (2011). Gupta *et al*. (2014) and Giri and Serawat (2011) found a strong positive correlation between financial inclusion and human development. While Laha and Kuri (2011) and Laha (2015) observe that improving economic opportunities through banking inclusion in a society has an indirect positif impact on improving education and health levels. This condition in turn will enhance human development. Laha believes that financial inclusion will increase people's business opportunities.

In Indonesia, a number of studies on financial inclusion have been carried out including by Ummah (2015), Anwar and Amri (2017) and Fahmy *et al.* (2016). Ummah (2015) examines the relationship between financial inclusion and income distribution. Her research found that the level of financial inclusion is still low in Indonesia. Her research also shows the tendency of increasing income inequality leading to higher financial inclusion.

The impact of financial inclusion that improve income inequality is supported by previous research by Herrero and Turegano (2015). Meanwhile, the results of Anwar and Amri's study (2017) indicate the positive impact of financial inclusion on Gross Domestic Product (GDP).

Index of Financial Inclusion (IFI) or Indeks Inklusi Keuangan (IIK) is the level of financial inclusion. In this study we use Index of Financial Inclusion (IFI) proposed by Sarma, Sarma (2010), Sarma (2012), Sarma and Pais (2011). Sarma proposes to calculate of financial inclusion index which consists of 3 (three) dimensions, namely: (i). banking penetration, (ii). availability of banking services, and (iii). use of banking services.

Banking penetration (p)

Bank penetration is the ratio of the number of bank third party fund accounts in each province divided by the total adult population aged 15 years and over in the province. This indicator is the number of third party funds accounts per 1000 (one thousand) adult population.

Availability of banking services (a)

The availability of banking services reflects the reach of banking to the public. Availability of banking services is measured with 2 indicators, namely the number of branch offices and the number of automatic teller machines (ATMs) in the region. The indicators of the availability of banking services are the ratio of the number of bank branches to 1,000 (one thousand) adult population and the number of ATMs in a province to the number of 1,000 (one thousand) adult population.

Use of the banking system (u)

Use of the banking system reflects how deep of the use of banking services in the region. The indicator of the usefulness of banking services is the ratio of the number of outstanding loans and third party funds to the gross regional domestic product (GRDP) in the province.

Index of Financial Inclusion (IFI) is the composite of those three dimensions. Each dimension has an indicator which represent that dimension. Before calculating the index of financial inclusion, first we need to normalize the indicators.

Index of Financial Inclusion (IFI) can be obtained if each index has been calculated according to its dimensions from the three dimensions of financial inclusion in question, with the following formula:

$$d_i = w_i (A_i - m_i) / M_i - m_i \quad \text{..... (1)}$$

d_1 = Penetration of banking services (p)

d_2 = Availability of banking services (a)

d_3 = Use of banking services (u)

Where:

d_i = Normalized indicator for dimension i

w_i = Weight for dimension i, $0 \leq w_i \leq 1$

A_i = Current value of variables or indicators i

m_i = Minimum value (lower limit) of variables or indicators i

M_i = Maximum value (upper limit) of the variable or indicator i

2.2 Formulation of Human Development Model

We propose human development model consist of several structural and identiy equations

Structural Equations :

Angka Harapan Hidup/AHA (life expectancy at birth).. (year)

$AHH_{it} = a_0 + a_1SANI_{it} + a_2AIRL_{it} + U_{1it}$ …….....

(2)

Angka Harapan Lama Sekolah/HLS (expected years of schooling).. (year)

$HLS_{it} = b_0 + b_1BSP_{it} + b_2DBELI_t + U_{2it}$ .....

(3)

Rata-rata Lama Sekolah / RLS (mean years of schooling) … (year)

$RLS_{it} = c_0 + c_1BSP_{it} + c_2PDRBKAP_{it} + U_{31it}$

….....

(4)

Daya Beli / DBELI (purchasing power) .. (Rp Ribu)

$DBELI_{it} = d_0 + d_1KRTCAP_{it} + d_2IIK_{it} + U_{4it}$ .....

(5)

Sanitasi / SANI (percentage of households with decent sanitation in province i year t)

$SANI_{it} = e_0 + e_1BSK_{it} + e_2BSPU_{it} + U_{5it}$ …....

(6)

Air Layak /AIRL (percentage of households with decent source of water in province i year t)

$AIRL_{it} = f_0 + f_1BSK_{it} + f_2PMTB_{it} + U_{6it}$

.....

(7)

Identity Equations :

Indeks Hidup Panjang / IPANJ (long life index)

$IHPANJ_{it} = (AHH_{it}-20) / (85-20)$

.....

(8)

Indeks Pendidikan / IPEND (education index)

$IPEND_{it} = [(RLS_{it}/15) + (HLS_{it}/18)] / 2$ .....

(9)

Indeks Hidup Layak / ILAYAK (decent living index)

$ILAYAK_{it} = (Log (DBELI) – 6.91) / 3.28$

…….....

(10)

Indeks Pembangunan Manusia (IPM) or Human Development Index (HDI)

$IPM_{it} = [(IHPANJ_{it} * IPEND_{it} * ILAYAK_{it})^(1/3)] * 100$

.....…..

(11)

Where:

BSP_{it} = Government expenditures in education sector in province i year t

BSK_{it} = Government expenditures in health sector in province i year t

$BSPU_{it}$ = Government expenditures in public work sector in province i year t

$PMTB_{it}$ = Gross capital formation in province i year t

$PDRBKAP_i$ = Gross regional product bruto per capita in province i year t
$KRTCAP_{it}$ = Regional household consumpiton per capita in province i year t
IIK_{it} = Index of Financial Inclusion (IFI) in province i year t (index : 0 – 100)
Expected signs of estimated parameters : a_1 a_2, b_1, b_2,c_1, c_2, d_1, d_2, e_1, e_2, f_1, $f_2 > 0$

2.3 Data

This study use time series data in 2014-2017 and cross sections of 21 provinces, total data consists of 84 obsevations. We use secondary data from the Statistics Indonesia (BPS), the Ministry of Finance, the Financial Services Authority (OJK), Bank Indonesia (BI), the Ministry of Agriculture, and the Ministry of Health. Selection of provinces as a sample is based on considerations: (1) not including provinces with extreme HDI figures (the highest and the lowest) such as DKI Jakarta and Papua, (2) not including the pemekaran (expansion) provinces, and (3) not including provinces where realization of financial balance data have technical problems. The technical problem was encountered when there were some provincial data, which was incomplete or because there were regencies whose budget realization were reported in other provinces. This happened in the provinces of Southeast Sulawesi, Bali and the Yogyakarta (DIY).

2.3 Identification dan Model Estimation

a. Model identification

Our model identification is determined on the basis of the order condition as a necessary requirement and the rank condition as a sufficient condition. According to Koutsoyiannis (1977) and Gujarati and Porter (2009) formulation of the identification of the structural equations model based on the order condition is determined by guideline as follow :

$(K - M) > (G - 1)$ ……. (12)

where,

K = Total variables in the model, consists of endogenous variables and predetermined variables.

M = Number of endogenous and exogenous variables included in one particular equation in the model, and

G = Total equations in the model, which is similar to the number of endogenous variables in the model.

If an equation in the model shows the following conditions $(K – M) > (G – 1)$ = then the equation is declared overidentified. If $(K – M) = (G – 1)$ = then the equation is said to be exactly identified (exactly identified), and if $(K – M) < (G – 1)$ = then the equation is said to be unidentified.

In order to obtain the results of estimated parameters, the identification results for each structural equation must be exactly identified or overidentified.

Our human development model in this study, consists of 10 equations (G=10), further detail the model consists of 6 structural equations and 4 identity equations. Based on structure of our model, there are 8 predetermined variables, therefore total variables in the model is 18 (K=18). The maximum number of variables in the equation is 3 variables (M=3), so the results of the identification of the Human Development Model is (18-3) > (10-1). Based on the order condition criteria, identification of our human development model is over identified. In this case, model estimation can be done by applying 2SLS

(Two Stage Least Squares) estimation and 3SLS (Three Stage Least Squares) estimation (Koutsoyianis, 1977). We use 2SLS, with argument that the application of 2SLS produces consistent, simpler and easier estimates, while the 3SLS methods need more information and are more sensitive to measurement errors and model specification errors.

b. Model Validation

According to Pindyck and Rubinfield (1998) to find out if a particular model valid to be used in policy simulation, it is needed to validate the model whether the model can represent the real world. In this study, we use Theil's Inequality Coefficient (U) as statistical criteria for validating the estimated value of the model. Thiel's U, provides a measure of how well a time series of estimated values compares to a corresponding time series of observed values.

U is the ratio of Root Mean Square Error (RMSE) to the average sum of the squares of the estimated values and the average of the squares of the observed values of a model or variable. If the value of U is close to zero, then the estimation of the model or variable is more valid (better). The value of Theil's coefficient (U) is between $0 < U < 1$. If $U = 0$ then the model estimation is perfect, if $U = 1$ then the model estimate is naive. Basically, the smaller the UTheil's value, the better the model estimation. The U statistical formula is as follows:

$$U\ Theil = \frac{\sqrt{\frac{1}{n}}\ \sum_{t=1}^{T}(Y_t^s - Y_t^a)^2}{\sqrt{\frac{1}{n}}\ \sum_{t=1}^{n}(Y_t^s)^2 + \sqrt{\frac{1}{n}}\ \sum_{t=1}^{n}(Y_t^a)^2} \qquad \text{..... (13)}$$

Where :

Y_t^s = base line value of observed variable

Y_t^a = actual value of obeserved variable

n = number of observations

c. Model Simulation

Model simulation is intended to evaluate policies in that period and, at the same time, can be used as input for future policy implementation. In conducting the simulation, there are several main (performance) or concerned indicators used in this study to assess the effectiveness of the simulation scenario. The performance includes, firstly the output of the construction sector (QKONS), secondly, the purchasing power (DBELI), thirdly the human development index (IPM) and fourtly, the financial inclusion index (IIK). These are the four indicators we chose, because these indicators are combination of outputs and outcomes of government policy.

In this study, there are 6 (six) policy simulation scenarios analyzed, namely:

1. Education sector spending (BSP) increased by 5 percent.
2. Health sector spending (BSK) increased by 10 percent.
3. Public works sector spending (BSPU) increased by 10 percent.
4. The affirmative education sector spending policy (BSP) is Rp. 1 trillion.
5. Affirmative health sector spending policy (BSK) of Rp 1 trillion.
6. The affirmative public works sector (BSPU) spending policy of Rp. 1 trillion.

For simulation No.1 to No.3, it is executed in each of the 21 provinces and for simulation No.4 to No.6, it is executed in each provinces that have HDI is lower than the national HDI.

Table 2. Concern Indicators

No.	Variable	Lable	Unit Metric	Expected Change (▲%)
1.	QKONS	Value of Construction Sector Output	Rp millio	+
2.	DBELI	Purchasing Power	Rp thousand	+
3.	IPM	Human Development Index	0 - 100	+
4.	IIK	Index of Financial Inclusion	0 - 1	+

III. Result and Discussion

The human development index 20014-2017

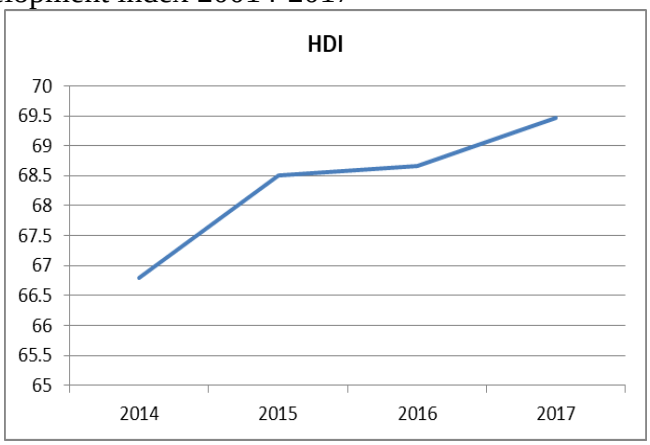

Figure 1. *Human Development Indices (HDI) 2014-2017*

Average value of the human development index in Indonesia based on the sample provinces tends to increase during 2014 - 2017 from 66.7 in 2014 to 69.5 in 2017. Even though it is increasing, there are still several provinces whose HDI are less than 70 which mean human development in Indonesia is only in the medium category. A province is considered has high value of Human Development Index (HDI) if its HDI is over 70. Human development in Indonesia are still facing many challenges to be resolved and it seem that have not yet run optimally.

3.1 Result of Human Development Model in Indonesia

Table 3. Regression Results

Variables	Parameters	Probability	Notes
1. Angka Harapan Hidup (AHH_{it})			Life expectancy at birth (year)
Intercept	63.9658		
$SANI_{it}$	0.0027	0.4789	Households with decent of sanitation in province i year t (%)
$AIRL_{it}$	0.0738 [c]	0.1624	Households with decent of water sources in province i year t (%)
R-square	0.0223		

2. Harapan lama sekolah (HLS_{it})			Expected years of schooling (year)
Intercept	10.6020		
BSP_{it}	7.902 E-8 [a]	0.0101	Education sector expenditures in province i year t (Rp mil)
$DBELI_{it}$	0.0004 [a]	0.0002	GNI per capita in province i year t (Rp thousand)
R-square	0.8864		
3. Rata-rata lama sekolah (RLS_{it})			Mean years of schooling (year)
Intercept	8.6973		
BSP_{it}	3.608E-8[a]	0.0155	Education sector expenditures in province i year t (Rp mil)
$PDRBKAP_{it}$	0.0030 [a]	0,.0001	Per capita PDRB in province i year t (Rp thousand)
R-square	0.9859		
4. Daya beli ($DBELI_{it}$)			Gross National Income per capita in province i year t
Intercep	6,057,35		
$PDRBKAP_{it}$	43.6610 [a]	0.0066	PDRB per capita provinsi i tahun t (Rp thousand)
IIK_{it}	1964.6 [a]	0.0016	Index of Financial inclusion province i year t (0<IIK<1)
R-square	0.9446		
5.$SANI_{it}$			Percentage of Households with adequate sanitation in province i year t
Intercept	52.0001		
BSK_{it}	1.782E-6[a]	0.0041	Health sector expenditures province i year t (Rp mil)
$BSPU_{it}$	3.301E-8	0.4822	Public sector expenditures province i year t (Rp mil)
R-square	0.1432		
6.$AIRL_{it}$			Percentage of Households with adequate water sources in province i year t (%)
Intercept	64,.9244		
BSK_{it}	8.594E-7[a]	0.0073	Health sector expenditures in province i year t (Rp mil)
$QKONS_{it}$	0.00003	0.2319	Output of construction sector in province i year t (Rp mil)
R-square	0.1937		

Notes: [a] Significant α = 5%; [b] Significant α = 10%; [c] Significant α = 20%

In human development model, the sign of estimated parameters are in accordance with expected signs. The estimation result of life expectancy (AHH) shows that both sanitation (SANI) and access to clean (decent) water sources (AIRL) have a positive relationship towards the improvement of AHH conditions. The AHH equation is in line with the literature that life expectancy is closely related to the availability of decent source of water and sanitation infrastructure.

Based on the estimation, it is found that the percentage of households with adequate water sources (AIRL) affects life expectancy. The condition of households with proper/decent (clean) water facilities also affects life expectancy. For example, in east nusa tenggara (Nusa Tenggara Timur), 63 percent of households have adequate/decent sanitation and life expectancy is around 66 year. This figure is lower than Central Java, where the share of households with adequate sanitation has reached 73 percent in 2017 and life expectancy is around 74 year.

Meanwhile, in relation with expected years of schooling (HLS), this study found that goverment spending on education sector (BSP) and purchasing power (DBELI) have a positive and significant direction toward expected years of schooling (HLS). This indicates, the higher BSP allocation and higher purchasing power of the community, it will increase the expected years of schooling. On the other hand, the estimated results of the mean years of schooling (RLS) indicates that education sector spending and gross regional domestic product per capita (PDRB CAP) have a positive and significant relationship to mean years of schooling (RLS). Therefore, to increased the mean of years schooling, it is necessary to boost the allocation of education spending and increase in GDP per capita. Empirically, this is reinforced by the fact that more prosperous regions are accompanied by a higher per capita GRDP level, have relatively higher mean of years schooling.

Related to purchasing power, this study found that an increase in the level of welfare (GRDP per capita) and index of financial inclusion (proxied by the availability of affordable formal financial services) can increase purchasing power. Therefore, an effort to increase purchasing power should be supported by deepening the financial sector. In this case, the more people served by the formal financial system, the better the conditions are of the regional / provincial economy.

As for the sanitation equation (SANI) and access to clean water (AIRL), this study found that health sector spending (BSK) has a positive and significant relationship towards both. This means that the higher allocation government expenditure of health spending, and higher the health infrastructure, will improve sanitation conditions and public access to clean water. This shows the important role of local government spending in improving the quality of life of the community especially those related to health aspects.

Before carrying out a series of simulations, we need to validate the model built. The threshold value of the coefficient U adapted in this study is 0.3. If the majority of equations in the model have a U coefficient value below this magnitude, then the model is relatively good to be used in analyzing the simulation scenario. From the results of the validation test as contained in Appendix, it is known that all variables in the research model have a U coefficient value below 0.3. Therefore, we can conclude that our model has met the criteria to be used in analyzing the impact of various scenarios that will be applied in this study.

Table 4. Brief Result of Simulation Scenarios

		SIM 1	**SIM 2**	**SIM 3**	**SIM 4**	**SIM 5**	**SIM 6**
Variables	**Base Value**	▲%	▲%	▲%	▲%	▲%	▲%
DBELI (Purchasing Power)	9267	0.12	0.07	0.12	0.28	0.23	0.12
QKONS (Construction Output)	29.552.695	0,36	0,09	0,17	0,53	0,21	0,25
IIK (Index of Financ Inclusion)	0,73	0,77	0,15	0,22	1,07	0,36	0,34
IPM (Human Dev Index/HDI)	68,52	0,09	0,03	0,03	0,15	0,09	0,06

Simulation Scenarios :
SIM 1 Education sector expenditures (BSP) increased by 5 %
SIM 2 Health sector expenditures (BSK) increased by 10 %
SIM 3 Public works expenditures (BSPU) increased by 10 %
SIM 4 Affirmation education sector expenditures (BSP) increased
trillion
SIM 5 Affirmation health sector expenditures (BSK) increased Rp
SIM 6 Affirmation public sector expenditures (BSPU) increased Rp 1 trillion

List of Provinces that need affirmation because its HDI is less than national average : 68.34
Jambi, Sumatera Selatan, Lampung, Kalbar, Kalteng, Sulteng, NTT, NTB dan Maluku

We could consider simulation 4 is the best simulation among all simulation scenarios. Based on simulation 4, the affirmation of government policy of an additional Rp. 1 trillion expenditures in education sector to provinces with human development index lower than national average has the best outcome (scenario). In this scenario, construction output and purchasing power respectively increased 0.28% and 0.53%. Then index of financial inclusion and human development respectively increased 1.07% and 0.15%.

The scenario simulation 4 produces maximum impact among all other scenarios. In scenario No.4, output of construction sector (QKons), purchasing power (DBELI), the human development index (HDI), index of financial inclusion (IFI) increased at most compare to five other scenarios. Another simulation scenario that produce the second best would be the simulation 1 although the impact it seems not as high as simulation 4.

In conclusion to increase Human Development Index, we propose the government could execute an affirmative and proactive policy to provide better opportunity for the people, especially for the disadvantaged or marginal groups so they can improve their quality of life.

IV. Conclusion

1. Government fiscal policy through spending in the education and health sectors has positive impacts on increasing the components of the HDI.
2. Increased public access to formal financial institutions through financial inclusion has positive impact on the human development index, mainly through the increase of purchasing power.

Recommendation

Going forward, efforts should be made to improve the quality of human resources, which is characterized by the continue increase in the annual human development index. This can be done through the increase in the allocation of government spending in education and health sector more progressively. This theme is in line with government main program to improve the quality of Indonesian human resources in order to achieve increase in the quality of high level of human resources. That condition would be a prerequisite for Indonesia to be a developed country. Basically, this is the theme of the previous 74th Independence Day of the Republic of Indonesia.

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