The Analysis of Human Resources Development in Central Java Province 2009-2013

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Abstract

This study aims to analyze: (1) the influence of governmentexpenditureon education to HDI in Central Javafrom 2009 to 2013; (2)the influence of government expenditure on health to HDI in Central Java from 2009 to 2013; (3) theinfluence of population density to HDI inCentral Java from 2009 to 2013. Secondary data, from the Central Statistics Agency and Financial Bureau Secretaries of Central Java province in 2009-2013 were used. This study implemented panel data with Fixed Effect Model (FEM)method of Generalized Least Square (GLS). The results show that the governmment expenditure on education and health has positive and significant effect to HDI in Central Java. However, population density doesn't significantlyaffect the HDI in Central Java.

Keywords: Government Education Expenditure, Government HealthExpenditure, Human Resource Development, Population Density.

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INTRODUCTION

The potential of economics development of a country is heavily influenced by quantity and quality of resources from the physical resources and human resources (Todaro, 2006: 54). Economics development always becomes main attention to improve the standard of public welfare in a country, especially in developed country (Mahadiki and Santoso, 2013). Salim (2011:1) emphasized that the current development does not really prioritize on human development. Furthermore Iheoma (2012: 1) states that fundamental focus of economics development is Human Resources Development (HRD). This human resources development is in proxy from values of Human Development Index (HDI). Unites Nations Development Program (UNDP) tries to compare status of economical social development through HDI. HDI in Indonesia is in the amount of 0.68 which includes into medium human development category (UNDP, 2014). According to BPS (2014), Indonesia was ranked 108th of 187 countries in the world.

Law number 23, 2014 and law number 33, 2004 state that regional autonomy and fiscal decentralization are new strategies for entering total reformation era in facing globalization and free trade (Keswara in Winarno, 2008:38). Therefore, every region is expected to optimize its potential to improve human resources who are qualified in order to compete and also contribute in improving the economy nationwide.

Central Java province has smallest gross domestic products contribution of 8.25% as well as second-bottom in the rate of regional domestic products of 5,81% (BPS, 2014). Based

on endogenous development, there is integration technological innovation in creating human capital as the main resources of productivity motorize mover of economic growth (Roomer 1990:25). The efforts to improve the human capital can support the enhancement of productivity and economic growth.

Human capital is the indicator which contributes in improving human resources development in one region. Human resources development refers to the ability of human efficiency to process raw materials to be goods or services. The effective education and health care service system can exploit the efficiency ability in human resources development (Ihoema, 2012: 2).

As stated in graphic 1 below, the highest average of HDI is on 2009 – 2013 which was occupied by Surakarta city at 78.24, while the lowest was occupied by Brebes city at 68.74. The phenomena of HDI value in Central Java province was increased by 74.05, but it was decreased being ranked 4th in Java – Bali Island because displaced by Bali Island (BPS, 2014). Therefore the HDI rank in Central Java province in nationwide was 16th. The development of HDI value in Central Java Province has increased but the rate has not increased as expected. Based on the Medium Term Development Plan (MTDP) on 2008-2013, the achievement of HDI in Central Java Province has not reached the target yet that has been set (Bappeda, 2009).

In addition, based on Graph 1, the enhancement of HDI value does not rule out the possibility of widening the gap between districts and cities. It is reflected on Surakarta HDI value of 79.10 and Brebes of 69.85 (BPS, 2014).
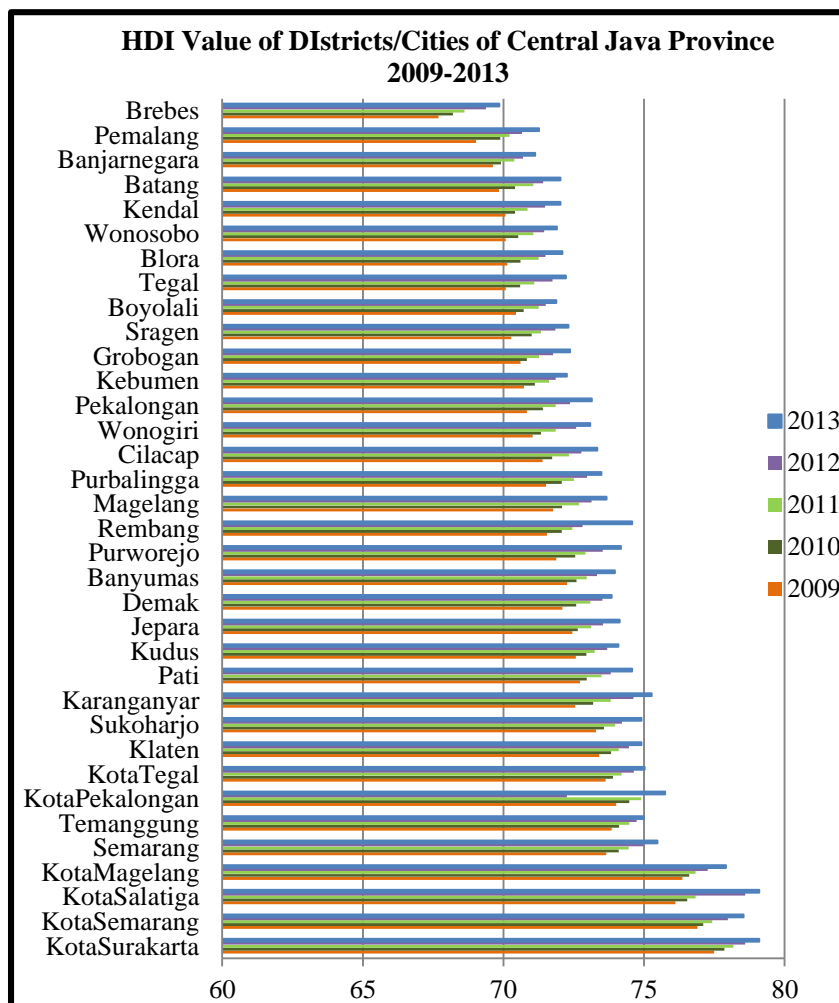
Source: Central Bureau of Statistics in 2014, processed data

Graphic 1. HDI value of Districts/Cities of Central Java Province

Public expenditures in developed countries have an active role in reducing regional disparities, creating infrastructure, economic growth, education, and research and development (Bhatia 2002 in Muritala 2011: 2) . The percentage of government expenditures in education of Central Java Province occupies the smallest percentage in Java – Bali and on 2009-2013. It was decreased by 1.8% (Directorate General of Fiscal Balance, 2009-2013). Education should absorb most of the public expenditures because it is public service which has spillover positive effect (Uche, 2013).

Health expenditures have a positive impact on human development because they can affect the productivity of labor to be higher so that it can affect economic growth (Razmi, 2012: 11). In 2009-2013 there was an increase in the allocation of health expenditures by 9.8% in Bali Province and Jakarta by 3.5%. While the percentage was significantly decreased. The greatest was in Java-Bali. It occurred in Central Java province by 3% (Directorate General of Fiscal Balance, 2009-2013).

This fluctuation in the proportion of government education and health expenditures reflect the consistency of the government in exploring income sources in improving public services distribution.

Tabel 1. Rata-rata Pengeluaran Pemerintah bidang pendidikan& kesehatan di Kabupaten/ Kota Provinsi Jawa Tengah

Kabupaten/Kota	Pengeluaran Bid.Pendidikan (Rp)	Rank	Pengeluaran Bid.Kesehatan (Rp)	Rank
Cilacap	653.005.341.600	5	145.540.021.750	4
Banyumas	758.726.813.775	1	187.237.287.648	1
Purbalingga	458.096.516.200	21	106.324.664.600	19
Banjarnegara	508.553.523.000	16	98.119.980.800	24
Kebumen	648.803.022.881	6	121.878.065.160	12
Purworejo	513.434.451.730	15	105.395.139.760	20
Wonosobo	381.365.312.128	28	81.351.736.738	30
Magelang	616.127.806.107	8	106.606.985.918	18
Boyolali	567.771.705.800	10	128.692.788.620	8
Klaten	751.877.838.870	2	75.124.786.640	34
Sukoharjo	473.317.976.440	19	97.788.551.895	15
Wonogiri	632.814.338.228	7	103.086.832.860	22
Karanganyar	480.519.589.664	18	96.425.494.086	16
Sragen	556.794.263.600	11	117.341.228.600	13
Grobogan	545.576.424.691	13	110.590.934.255	14
Blora	508.537.019.246	17	99.814.257.290	23
Rembang	374.005.251.105	29	105.322.255.200	21
Pati	595.886.865.490	9	166.661.658.360	2
Kudus	402.443.314.000	26	139.754.303.000	5
Jepara	455.479.609.600	22	123.177.529.000	11
Demak	435.073.092.538	23	88.874.892.160	28
Semarang	384.711.439.000	27	125.579.957.400	10
Temanggung	341.753.889.252	31	75.646.016.110	33
Kendal	467.510.754.340	20	110.580.777.509	15
Batang	356.604.125.964	30	85.671.340.271	29
Pekalongan	417.563.591.874	24	133.323.777.494	7
Pemalang	549.995.784.880	12	110.263.937.500	16
Tegal	542.063.271.150	14	126.547.530.042	9
Brebes	681.840.540.600	4	135.580.059.200	6
Kota Magelang	171.895.860.800	33	79.459.069.200	32
Kota Surakarta	410.599.623.336	25	92.469.087.300	27
Kota Salatiga	171.023.231.400	35	80.649.082.000	31
Kota Semarang	690.583.325.120	3	158.568.562.340	3
Kota Pekalongan	171.275.723.148	34	56.445.885.055	35
Kota Tegal	174.509.879.400	32	108.268.953.800	17

Sumber : Biro Keuangan Provinsi Jawa Tengah tahun 2009-2013, data diolah.

Public services depend on innovation to develop the better ways to fulfill needs, solve problems, and use resources and technology (Mulgan, 2003: 4). The fiscal

decentralization and regional autonomy are the instrument in realizing the priorities development achievements, especially priorities relate to the development of human resources in each region.

Accordingly, the phenomenon of high gaps on government education and health expenditures among the district/cities of Central Java province are shown in the following Table 1. The different allocation of government education and health expenditures reflect the government's efforts to explore potential source of local revenue such as from source of tax revenue and retribution in the region. Besides, the different priorities in each area that do not necessarily focus on the areas of education and health.

Increasing population density and urbanization encourage specialization and human investment so can fast accumulate new knowledge that can increase per capita income along with population growth. Becker (2007: 148). Keskinen (2008: 107) state that quality of population density depends on socio-economic, infrastructure, politics which have great impact on development.

According to BPS (2013) population density in Central Java province in 2013 is 1014 per inhabitants/km2. It is potential which is supported by government's efforts of realization expenditure allocation utilization on education and health in Central Java Province.

Based on the background above, the research questions are:

1) How does government education expenditure influence HDI in Central Java province in 2009 to 2013;

2) How does government health expenditure influence HDI in Central Java Province in 2009-2013; and

3) How does population density influence HDI in Central Java province in 2009-2013.

RESEARCH METHODS

This study uses panel data which is the combination of data cross section of 35 districts/cities and time series in 2009-2013 which are from the Central Statistics Agency (BPS) and the Region Secretary Financial Bureau of Central Java Province. While the variables and operational definitions of variables are as follows:

Human Development Index (HDI) is an indicator of all of human development achievements which are founded on three dimensions; health, education and decent living with the unit (scale 1-100).

Government education expenditures are the government budget allocation which is arranged in APBD in education sector in certain time (Rupiah).

Government health expenditures are the government's budget allocation arranged in APBD in health sector in certain time (Rupiah).

Population density government budget allocation is arranged in APBD the health sector in certain time (per km2).

Data Analysis Method

According to Gujarati (2012: 237), panel data is a combination of individual data (cross section) and time series data. Based on advantages of panel data, it has implications which should not be necessarily tested by classics assumption like multi-colinearity, heterocedasticity, autocorrelation, and normality in the panel data. (Verbeek, 2000: Gujarati, 2003; Wibisino, 2005; Aulia 2004: 27 in Ajija, 2011). According Widarjono (2009: 231), to estimate the regression model with panel data uses three approaches, they are

common effect, fixed effect and random effect.

Common effect is estimating panel data technique that does not address to the dimension between individuals and between time. Fixed effect is estimating panel data technique that uses dummy variable to see any intercept differences. Random effect is a technique of estimating the disturbance variable that consists of combination disturbance variable between time series and cross section individually.

Based on the theoretical framework of this research, the dependent variable of this research is HDI. While the independent variable is government education expenditures (LogPNGLPEN), government health expenditure (LogPNGLKES), and population density (KP). Then the equation of this study is as follows:

$$HDI_{it} = \beta_0 + \beta_1 LogPNGLPEND_{it} + \beta_2 LogPNGLKES_{it} + \beta_3 KP_{it} + \mu_{it} \dots\dots\dots\dots\dots(1)$$

Explanation:

HDI= human development index (scale 1-100)

LogPNGLPEND= government education expenditures (USD)

LogPNGLKES= government health expenditures (Rp)

KP = population density (per km2)

B = regression coefficients;

i = district / city i (i = 1,2,3, ... 35);

t = year-to-t (2009-2013);

μ_{it} = residual value outside models.

After estimating three models panel data estimation, the next step is determine the best model among the common effect, fixed effect and random effect with two stages; they are Chow test and Hausman test.

RESULTS AND DISCUSSION

Regression Result Analysis

In this study, there are three models of panel data estimation models, they are common effect, fixed effect model and random effect model. The results of three panel data estimation models in table 2. After estimating three models which are selected then doing two phases of statistics phases. Based on chow test results, F of cross section at 287.899814 with p-value at F cross-section of 0.0000, significant at $\alpha = 5\%$. Thus, the decision of best model to use is FEM. Hausman test result is random cross-section of 11.951433 with p-value of 0.0076, significant at $\alpha = 5\%$. Thus, the decision of best model to use is the FEM.

Determining the best models beside based on statistical testing of chow test, hausman test is also based on non-statistical considerations on one of the considerations of Judge observation (Gujarati 2012: 255). Cross-section units of this study are 35 districts/cities of Central Java Province. In other words, the cross-sectional units taking of this study have not drawn randomly, then the appropriate panel data model to use is FEM. After determining the best model regression function then measuring the accuracy of regression function of of its goodness of fit.

The value of adjusted R^2 of FEM on Table 2 is 0.991839. It means that 99% of HDI variables in Central Java Province are explained by the variation of the variable models of government education expenditure (logPNGLPEND), government health expenditure (logPNGLKES), and population density (KP). While the rest 1% is explained by other variables outside the model.

Table 2. Panel Data Estimation Results

Variabel	Model Estimasi		
	Common Effect	Fixed Effect	Random Effect
Konstanta	30.03982	7.838975	8.207586
Std.Error	3.409370	1.513966	1.809373
p-value	0.0000	0.0000	0.0000
LOGPNGLPEN	-0.121270	1.118658	1.064535
Std.Error	0.226287	1.106914	0.137837
p-value	0.5927*	0.0000	0.0000
LOGPNGLKES	1.762218	1.362280	1.374769
Std.Error	0.226287	0.117266	0.145763
p-value	0.0000	0.0000	0.0000
KP	1.762218	0.000284	0.000675
Std.Error	2.95E-05	0.000182	9.96E-05
p-value	0.0000	0.1205*	0.0000
R²	0.812570	0.993575	0.879157
Adjusted R²	0.809282	0.991839	0.877037
Standar error	1.534181	0.228431	0.235217
F-Statistik	247.1135	572.5624	414.6856
Prob(F-Statistik)	0.000000	0.000000	0.000000
Durbin-Watson stat	0.193496	2.145025	1.568998

Source: E-Views 6.0 output result

Note: *) not significant at α = 5%.

The F statistical test is a statistical test to find out the effect of simultaneous independent variable on the dependent variable. According to the table 2 in the fixed effect model, it is obtained that Fstatistic of 572.5624 and Ftable (numerator df 2; denumerator 172) by 3.05, so Fstatistic > Ftable (572.5624 > 3.05) with a p-value 0.00000. Thus, the effect of government education expenditures, government health expenditures, and population density simultaneously affect the HDI in Central Java province in 2009-2013. T statistical test is a statistical test to find out the partial effects of the dependent variable. Based on statistical test government education expenditure, it has tcount > ttable (10.46313> 1,653) with a p-value of 0.0000, then government health expenditures have positive and significant impacts towards HDI in Central Java Province. Government health expenditures have tcount > ttable (11.61701 > 1,653) with a p-value of 0.0000, so government health expenditures positively affects and it is significant towards HDI in Central Java province. While population density has tcount > ttable (1.562264 < 1.653) with p-value at 0.1205, the population density does not significantly affects HDI in Central Java Province.

Based on the results of estimation, this study uses the best model; FEM with Generalized Least Square method (GLS). The equations in the FEM model are as follows:

HDI$_{it}$= β$_0$ - β$_1$ logPNGLPEND$_{it}$ + β$_2$ logPNGLKESit +β$_3$KP$_{it}$ + u$_{it}$

HDI$_{it}$= 7.838975 + 1.118658 logPNGLPEND$_{it}$ + 1.362280logPNGLKES$_{it}$ +0.000284 KP$_{it}$ + u$_{it}$

Std error (1.513966)   (0.106914)   (0.116074) (0.000182)

Prob   (0.0000) (0.0000)   (0.0000) (0.1205)

The constant value of 7.838975 shows that if government education and health expenditures and population density are assumed to be constant or zero, then the HDI value will increase by 7.83.

The estimation results of FEM can show the uniqueness of the heterogeneity value of intercept in the districts/cities in Central Java Province. Individual effects are gained from constant values of districts/cities and added with the constant values of FEM. Based on **Table 3**, the coefficient is impactful if the independent variable is zero or constant towards human resource development is Brebes district, Pemalang District, and District Banjarnegara. While coefficient values which affect if the independent variable is zero or constant to the human resource development is Salatiga, Magelang city, and Semarang city. Difference coefficient may be caused by local government's in the improvement of human resource development in Central Java Province.

Table 3. Districts/Cities Individual Effects

District/City	Constanta	Coefficient	District/City	Constanta	Coefficient
Salatiga City	5,006	12,845	Magelang District	-0,344	7,494
Magelang City	4,182	12,021	Wonogiri District	-0,868	6,970
Semarang City	3,038	10,877	Pekalongan District	-0,926	6,912
Surakarta City	2,959	10,797	Banyumas District	-0,995	6,843
Pekalongan City	2,691	10,438	Wonosobo District	-1,025	6,813
Temanggung	2,599	10,438	Cilacap District	-1,091	6,747
Semarang District	1,759	9,598	Batang District	-1,107	6,731
Karanganyar District	1,332	9,171	Grobogan District	-1,411	6,427
Sukoharjo District	1,164	9,000	Blora District	-1,420	6,418
Klaten	1,146	8,465	Sragen District	-1,630	6,208
Demak	0,626	8,465	Kebumen District	-1,702	6,135
City.Tegal	0,979	8,188	Kendal District	-1,758	6,080
Purworejo District	0,297	8,136	Boyolali District	-2,012	5,826
Jepara District	0,264	8,103	Tegal District	-2,102	5,736
Rembang District	0,182	8,021	Banjarnegara District	-2,287	5,551
Kudus District	0,142	7,837	Pemalang District	-2,780	5,058
Pati District	-0,001	7,837	Brebes District	-4,702	3,136
Purbalingga District	-0,204	7,634			

Source: E-View 6.0 output result

Discussion

The coefficient of government education expenditure regression of 1.118658 shows the amount of positive influence on HDI in districts/cities of Central Java Province. It means that if government education is increased by 1%, HDI will rise by 1.11 with ceteris paribus assumption. The result of this study is in line with Sasana's research (2012: 11) which explains that the local government has a positive and significant relationship towards HDI in the districts/cities of Central Java Province.

Based on the phenomenon of government education expenditure shows that not all of local authorities improve the allocation of education annually. Whereas Uche (2013: 63) states that the government should be consistent in increasing the budget allocation, because it is very important for the national economy. Additionally, Guisan (2009: 122) emphasizes that improving the quality of education should be based on the level of the population in each region,so the population is offset by an increase in the quality of education. Availability of adequate educational infrastructure that can provide ease of public access to get the right to improve the standard of living through education. In addition, the indicators of educational attainment of each work unit area is expected to be in sync with the level of need in the districts/cities of Central Java Province.

The regression coefficient of government health expenditures of 1.362280 shows how big the positive influence is towards HDI significantly in the districts/cities of Central Java Province. It means that if the government health expenditures increased by 1%, the HDI will rise by 1.36 assuming ceteris paribus. The health expenditures have positive and significant effects on HDI in Indonesia

Government efforts related to equity of health expenditures are expected to reduce inequality in human resource development in Central Java Province. Programs which aim to increase quality access of health services is public health insurance and regional health insurance can provide ease of health nursing costs for poor and disadvantaged people. Health insurance programs are expected on targets and equitable by doing direct shooting towards the targets who are proper to get health insurance in districts /cities in Central Java Province.

The regression coefficient of population density of 0.000284 with p-value of 0,1205 means that population density has not fully influenced the value of the HDI in the districts/cities of Central Java Province. According to Keskinen (2008: 117), population density will bring great challenges on environmental degradation issues, food insecurity and improvement of local discrepancy. High population usually relies on natural resources that impact on the environmental condition and development in that region.

Targets equalization and programs based on distribution of population are very important in reducing the inequality of human resource development. Government's efforts in the grand design for controlling the quantity of population are needed the road map for equalization to be more comprehensive in the districts/cities in Central Java Province. It also highly depends on the system clean government towards corruption. If it could underlie the mindset of each local government in districts/cities in Central Java province so it can optimize population density and contribute to the development of human resources in dstricts/ cities of Central Java Province.

CONCLUSION

Government education expenditures have positive impacts and significant of 1.118658 toward HDI in districts/cities in Central Java Province. It is assumed that if government education expenditures increase by 1%, HDI value will rise by 1.11 in districts/cities in Central Java Province. Government health expenditures have positive impacts and significant of 1.36228 toward HDI in districts/cities in Central Java Province. It is assumed that if government expenditures in health sector increase by 1%, HDI value will rise by 1.36 in districts/cities in Central Java Province. Then, population density does not significantly affect towards HDI in districts/cities in Central Java Province.

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