

# Determinant Variable Analysis of Human Development Index in Indonesia (Case For High And Low Index At Period 2004 – 2013)

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**Abstract:** Compared with countries in the Southeast Asian Region (ASEAN), Indonesia has a Human Development Index (HDI) which is still in medium level. Based on the report of the United Nations Development Programme (UNDP), Indonesia's HDI ranking in 2013 was ranked 108 out of 187 countries. One factor of low HDI in Indonesia is the imbalance of development that occurs between Western Indonesia and East Indonesia. This is as the result of a centralized government implementation before decentralization in 2001. Some areas in Eastern Indonesia have HDI far below of the average National HDI (Indonesian National score 0.73). Overall, only 17 provinces in Indonesia which has an above-average National HDI and the remaining 16 provinces, below the average of the National HDI and is mostly in Eastern region.

Theoretically, one of the factors driving the increase in HDI is the increase in percapita income. This improvement will increase the purchasing power of people and at the end will improve the quality of education and health. However, high growth sector in the region do not necessarily reflect equitable prosperity for all people of the region. Moreover, the rapid rate of economic growth by itself will not be followed by growth or improving the distribution of profits for the entire population (see: Tadaro, 2011). Actually, increased demand would stimulate investment which in turn will increase revenues and led to a second round of investment, and so on. But it can also happen that the concentration of economic activities is quite high only in certain areas and not in other areas. This will affect income inequality community.

Furthermore, high HDI will improve the quality of the economic development. HDI is a composition index based on three indicators, namely: health, educational attainment, and standard of living. One of several policies is fiscal policy reformation, which starts with the law number 22/1999 on Local Government, which is equipped by the Law No.25/1999 on Financial Balance between Central and Local Government. The both laws are updated with the law number 32/2004 on local government and law number 33/2004 on the financial balance between central and local Governments. A few studies those have been successful in verifying the potential contribution of fiscal decentralization to economic growth. One of the main objectives of fiscal decentralization is equality in the distribution of income. Centralistic system in the past (New Order Regime) made inequality in distribution of income, where West Indonesia region has a high average economic growth and HDI meanwhile East and Middle regions only have average low economic growth and HDI. Based on this, the expected establishment of the fiscal decentralization policy can reduce income inequality, so that people's welfare can be enjoyed equally by all people of Indonesia. On the other hand, income inequality is also very closely related to population growth that has exponential growth rate. Rapid population growth led to the inability of an area to support a certain amount of human life at a reasonable level. The increasing number of population will not cause an excess of labor. Excess workforce will create unemployment, which certainly will add to the burden of the area.

Based on the above conditions need to improve the role of government through some kind policies to promote human development. The Government should be able to increase the budget allocation for increasing the quality of education, health and standard of living. Therefore, the policy that issued to the public must be a good policy, eliminated poverty through pro-poor or to create jobs through pro job. This study aims to examine Indonesia's HDI determinant variables. The methodology used in this research is multiple linear regression models with the panel data (33 provinces in period year 2004 to 2013), with the divide into two regions. Results of this research shows that: (i). areas which have HDI below the average national HDI show that the average variable spending per capita, population, unemployment rate, budget allocation for education and health significant effect on the HDI and (ii). areas which have HDI above of the average National HDI show that GDP at constant prices,

average spending per capita, the dependency ratio, unemployment rate, and the education budget have a significant effect on the HDI.

**Keywords:** Human Development Index, GDP at constant prices, the average expenditure per capita, dependency ratio, unemployment rate, budget allocation.

### Introduction

Economic development process is a sequence of stages of economic growth which must pass the state in carrying out development. According to Adam Smith in Todaro (2011), there are two major aspects of economic growth: total output growth and population growth. In the total output growth, there are three main elements of the production system of a country: Natural Resources (NR), Human Resources (HR) and stock of existing capital goods. According to Adam Smith, NR provided the most fundamental means of production of a society. If someday all these natural resources have been used in full, the output growth will stop. Availability of capital is a production element that actively determines the level of output. Meanwhile, economic growth and human development have a strong relationship with each other. According to the United Nations Development Programme (UNDP, 2011) human development can be sustained if it is supported by economic development. Unidirectional, development policy will create an aspect that may influence each other so as to maximize the benefits for both.

One approach to determine the success of human development is the Human Development Index (HDI). HDI published by the UNDP since 1990, explain how residents can access development results in obtaining income, health, and education (Hamzah et al, 2012). Several previous studies (see among others: Constantini and Martini, 2006; Muhammad, 2010; and Yasmien, et al, 2011) have shown that there are significant effect of economic growths on HDI. Research conducted by Hamzah, et al (2012) also showed that economic growth, per capita income, the budget allocation for education and fiscal decentralization policy as a dummy variable have a significant influence on the HDI in Indonesia. Meanwhile Rana (2007) revealed that there is significant influence between the standard of living with poverty, but there is no significant influence with economic growth. Sasana (2006) states that fiscal decentralization has significant and positive effect on economic growth. Lugastro (2013) states that the ratio of Local Revenue and Special Allocation Funds for capital expenditures has a significant positive effect on the HDI, as well as economic growth variable has the most dominant influence on the HDI.

Based on the UNDP report, Indonesia's HDI ranking in 2013 was ranked 108 out of 187 countries. Meanwhile Indonesia's economic growth is high enough average above 6% during the period 2010 to 2012 (UNDP, 2012) and quite high compared to other ASEAN countries. Based on the above condition there is a positive relationship between economic growth and HDI. Meanwhile, according to UNDP (2009), economic growth with HDI has relation to one another human development can be sustained if it is supported by economic growth. The most effective way in sustainable human development is the achievement of economic growth improved, with equitable distribution of income. Several previous studies have shown that there are significant economic growth on HDI. Based on the results of empirical studies and data released by the UNDP seen fundamental problem that economic growth does not directly affect the HDI and some previous studies that looked at the effects of fiscal decentralization terhadap economic growth for Indonesia, as in Sofilda (2012) showed that income areas do not have a significant influence on economic growth and also research conducted by Hamzah (2004) also showed similar results. Fiscal decentralization policy should have been implemented in 2001 enabled to increase local revenues and develop all economic potentials that exist, so as to stimulate an increase in output and increase economic activity, which in turn will have an impact on increasing social welfare and improving the quality of human resources. Such problems can not be separated from the failure of the Government in the New Orde, which the centralized system causes imbalances occur, especially in the area of Western and Eastern part of Indonesia that impact on the quality of human resources where the average HDI in eastern Indonesia is much lower than the HDI western Indonesia. This can be seen by Figure 1.

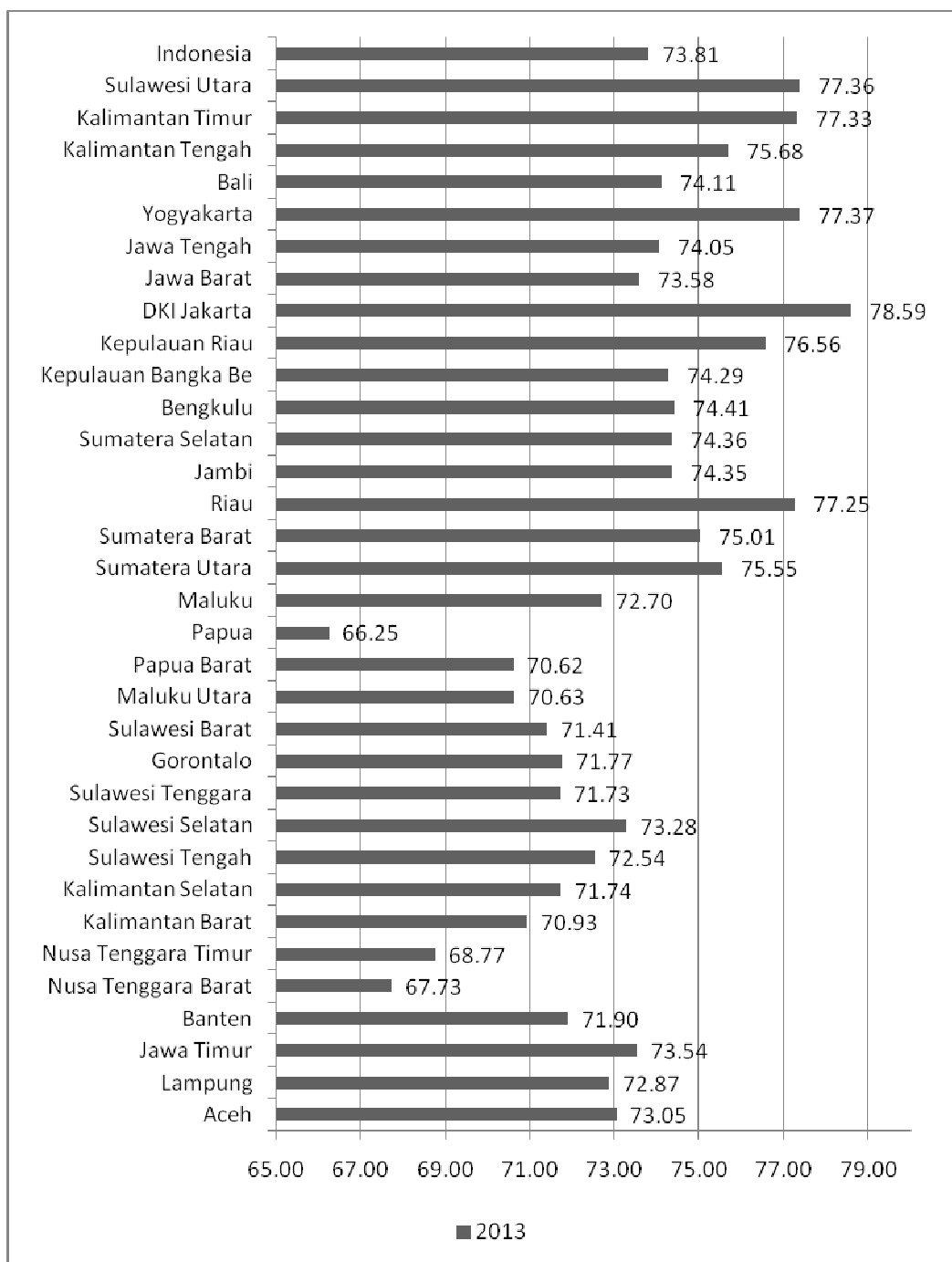


Figure 1 HDI per Provinces, 2013

Source: Statistics Indonesia

High growth in a region does not reflect equitable prosperity for the entire community of the region also increased. Furthermore, the rapid rate of economic growth is not by itself, followed by growth or improving the distribution of profits for the entire population (Tadaro, 2004). It is suspected the capitalist system in the advanced area. Increased demand will stimulate investment, which in turn will increase revenue and lead to a second round of investment, and so on. This is caused by the profit motive. Profit motive is what drives the development of a centralized building in areas that have high profit expectations, while other areas remain displaced. In addition to the investment, the concentration of high economic activity in a particular area will affect income inequality community. Based on this, the expected establishment of the fiscal decentralization policy which the central government gives local governments the authority to regulate and manage their own areas can reduce income inequality, so that people's welfare can be enjoyed equally by all people of Indonesia.

Based on the above conditions, this study aims to look at the variables GDP at constant prices, the average expenditure per capita, population, dependency ratio, unemployment rate, education allocations budget, health budget allocation, and housing and public facilities allocation budget in determining national HDI levels divided

into two regions based HDI above the average of the National HDI as many as 17 provinces and below the average of the National HDI as many as 16 provinces.

## Literature Review

### Basic Research

There are four approaches Theory Classic of Economic Development: first, the growth model of linear stages of growth models. This theory was introduced around the 1950s until the early 1960s that the development process as a series of successive stages of economic growth, which must be passed in each state that does development. Development as the direction of quantity and combination of savings, investment, and foreign donations in the right amount. Second, theories and patterns of structural growth. It uses modern economic theory and statistical analysis in order to reflect internal processes of structural growth that must be passed by developing countries to able create and sustain economic growth. Third, the international dependence revolution. It's radical and more politically oriented. Underdevelopment of developing countries as a result of the pattern of international and domestic power relations are not fair, economic aspects and institutional too tight so difficult to change, and as a result of the economy and society are contradictory. The main concern of this theory is the importance of formulating new policies to eliminate poverty in total, providing varied employment opportunities, and reduce inequality of income distribution. Fourth, the neoclassical, free-market counter revolution. In the 1980s until the early 1990s the most prominent is this theory. This theory prioritizes the beneficial role played by free markets, open economy, and privatization of state enterprises are inefficient and wasteful. Development failure is not due to internal and external factors, but government interference in the economy is too much.

In addition to the classical theory, there is a theory of structural growth. It focuses on the mechanisms that change the structure of their domestic economies from the emphasis on traditional subsistence farming to a more modern. There are two representative examples of structural change approach is "two-sector labor surplus" theoretical model W. Arthur Lewis and "patterns of development" which is an empirical analysis of Hollis B. Chenery and colleagues. The main focus of this model is the second employee transfer process and increased output and employment in the modern sector. Based on this, the factors of human existence is one indicator of support for economic growth. Theory on population growth known is the model of Malthus. Malthus declared threshold level anticipated population by Thomas Malthus (1766 - 1834) where population growth will stop automatically when life-sustaining resources (which binds according arithmetically) will not be sufficient to meet the needs of people whose number has increased exponentially.

There is criticism of Malthus models. Malthus population model is a simple and interesting theory about the relationship between population growth and economic development. Unfortunately, the model is based on a number of assumptions that turned out to be exceeded simplistic (oversimplifying issues) and also proposes the hypothesis has not been proven empirically. Model of Malthus's theory does not take into account the role and importance of the impacts of technological advances. The theory is based on a hypothesis regarding the relationships of macro (large-scale) between the rates of population growth with per capita income levels which actually can not be proved empirically. The theories are based on the economic variables that turned out to be wrong, that the level of per capita income as a major determinant of population growth, which is much more valid approach in order to answer questions about population and development efforts give priority to macro-economic aspects.

Population growth causes urbanization. Generally, developed countries based on income per capita, the greater the number of people living in urban areas. Although urbanization is closely related to economic growth, the fact is urbanization occurs in all countries. It does not matter whether the high-income countries or low and whether it is positive or negative growth. Urbanization is happening in all countries of the world with different levels. Todaro migration model is a theory that explains that the rural-urban migration is a process that is economically rational, in spite of the high unemployment in urban areas. The migrants do calculations (in present value) expected revenue from work in the city (or equivalent) and migrate if the expected income by working in the city, exceeding the average income in the countryside.

Harris Todaro models is a version of equilibrium by Todaro migration model, which predicts that the expected revenue is the result of a comparison between the rural and urban sectors when it takes into account the informal sector activity and unemployment. Rural-urban migration is not a process that takes into account the comparison between the level of wages in the cities and villages as disclosed in the competitive model, but takes into account the ratio between the expected income in rural and urban areas. Expected income in urban areas is so high because of the migration will continue to take place despite the high unemployment rate in the city.

Todaro migration model has four basic characteristics: first, migration driven rational economic considerations but also consider the psychological aspect. Second, the decision to migrate depends on the difference between the wages of rural and urban wages. Third, jobs in the city is inversely proportional to the level of Unemployment in rural areas. Fourth, the high urban unemployment rate is a result of unequal economic zones in rural and urban correct. Factors of urbanization and population growth caused an increase in demand. Basic

human needs is intended to promote the development of education and health. Education and health are two fundamental things of development goals. Human resources is a genuine capital inherent in human beings, not as its capital externally, so that education and health can be seen as a component of growth and development is important, because it involves the things inherent in human nature itself.

In the developing countries, the distribution of education and health as important as the distribution of income. For some people who are lucky, they will get health and educations were quite high, while the poor do not have access to these two things. The greater health capital may increase the return on investment in education. It's because the more healthy humans, the presence of participation in education will be higher, so it will increase investment in the field continues to grow due to the high participation in education. The greater the education capital may increase the return on investment in health. Because education is identical with an increase in membership, so the higher investment in education will caused workers will have more capabilities, thereby increasing the level of health that can increase investment in health.

Logically, high incomes can increase the level of education and health on the person. But, there is much evidence to prove that the increase in revenues is not accompanied by increasing levels of health or education, this is because a lot of extra income used for consumption other than food that is nutritious and education. Therefore, education and health should be the main focus of development. Health and education also has a close connection. The higher education of a mother, her child's health would be guaranteed. Due to the high level of education will caused a mother to get the latest information about the nutrition and health of her child.

After knowing the importance of the relationship between health, education, and income, the government is also responsible for the main from the government because revenue does not become the most important thing, but health and education are also very important, since not all people have access to both facilities. Level of education that will be earned by someone although much influenced by many factors, but an outline is almost the same as supply and demand in commodity markets and services. Education demand is a derived demand that the individual's desire to obtain a higher income by means of education as high as possible. In terms of demand for education, there are two principles that affect. First, expectations for students who get an education to have a job with a high income and benefit individually for the students and their families (private benefits of education). Second, the cost of education to be borne, either direct or indirect costs.

In terms of educational offerings that quantity of educational offerings are often influenced by political interests that have nothing relation to education. In the end, the level of education offers strongly influenced by the ability of the government to provide facilities for education because of the constraints of the government owned budget allocation for education. Four variables that affect the demand for education is a difference or differentiation of wages and / or income between urban and rural communities, probability or possibility of obtaining a job by means of education, the direct costs are borne by the individual or his family and indirect costs or opportunity costs of education. The essence of development is sustainable development that is not partial and instant. So, with the concept of Sustainable Development will try to give a new discourse on the importance of preserving the natural environment for the future, generations to come. Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Many believe that as per capita income increases, pollution and other forms of environmental degradation will first increase, and then decreased to form the letters U, this opinion known to Environmental Kuznets Curve. According to the above opinion, along with the increasing per capita income, people will increasingly have the awareness and willingness to pay for environmental protection. Many countries are implementing a policy of "Green Growth" which involves the use of low emission gas production activities in the country. It is causing environmental problems and urban slums which have characteristics: Families work long hours, income is uncertain, and difficult, trade-offs must be made between expenditures on nutrition, medical care, and education. A typical urban slum, among others: air pollution and children's safety is not guaranteed to play freely the streets and with the environment that is not conducive. Aside from family, environmental factors from the effects of industrialization according to the World Bank, pollution levels for even the worst quartile of high-income Cities are better than for the best quartile of low-income cities. Indeed, at higher incomes, it is Easier to afford expensive clean technologies. This resulted in the social cost to the community, to internalize it held taxation. In addition, hygiene and sanitation problem is also an issue that also need to be noticed.

According to Todaro, the policy on the concept of Sustainable Development can be carried out by several developing countries: (i). Pricing of resources. Pricing policy of the government, including subsidies, make increasingly scarce resources or encourage unsustainable production methods. Government programs are actually designed to reduce poorest population only a small impact on poverty and gini ratio increase. High-income families become the dominant beneficiaries of subsidies of energy, water, and agriculture that are damaging the environment. Although the improper removal of subsidies is a way that is not costly to protect the environment, this effort has a high political risk when the ruling elite will lose valuable government transfers; (ii). the participation of the public. Program to improve the environmental conditions are likely to be very

effective when executed together with the public network, ensure program design is consistent with the local and national objectives; (iii). Third, rights and ownership of resources clearer. Investment in sanitation and household water facilities and also an improvement on agricultural land often provide savings for the poor, where the loss of such investments may provide poor economic consequences for households. Therefore, the lack of security of tenure of rural or urban property may inhibit investment in environmental improvements. Legalization of ownership can improve the living conditions for the poor and boost investment in agriculture; (iv). a program to improve the economic alternatives for the poor. Government programs need to make credit and agricultural inputs that add to the value of land accessible to small farmers. By providing rural economic opportunities outside the home, the government may also create alternative employment opportunities are very poor so they do not need to work on marginal land; (v). improvement of the economic status of women. Improvement of educational opportunities for women and increase their economic alternative option would improve the opportunity cost of women's time and may cause a decrease in desired family size. Higher educations tend to increase women's access to information about nutrition and health of children; (vi). industrial emissions reduction policies. A number of policy options available to governments of developing countries with the aim to reduce pollution, including emissions tax, tradable emission permits, quotas, and standards. The first two policies in a more effective, because it tends to give rewards for producers of more efficient, and more easily enforced. Instead the government-run industry itself most unruly; and (vii). take a proactive stance on climate change and environmental destruction. Developing countries can implement and continuously improve the early warning system to anticipate environmental emergencies, encourage reforestation, restoring ecosystems natural barriers, improve the micro-insurance programs, and build storm protection, flood barrier, as well as the protection of roads and bridges.

Most of the consumption in developed countries commit waste. Wise consumption by developed countries would not only give a good example, but also ecologically is a must. Increasing public support on more stringent environmental regulations in developed countries will result in the development of emission reduction technologies that are cheaper and cleaner production processes. Nowadays, many clean technologies are still too expensive for the industry in developing nations. Therefore, it is unrealistic to expect low-income countries achieve the standards prevailing in high-income countries. By making emission reduction technologies that are cleaner and more affordable by developing countries can help limit a major source of global emissions.

### Previous Research

Hamzah et al (2012) the object of study in 26 provinces in Indonesia in 1993 - 2009. The test results obtained 6 of the 12 variables had a significant influence on the HDI is economic growth, per capita income, population growth, unemployment, education budgets, and a dummy variable over regional autonomy. Variable economic growth has a negative correlation to the HDI. Accordingly, although economic growth is increasing but not make HDI will also increase. Quality economic growth is not enough to improve the quality of life, yet fully perceived by the majority of the people but only by a handful of people in sectors and certain regions. Evianto (2010) testing using Williamson index fluctuated pattern of inequality. This is because some districts / cities dominate the acquisition of GDP. Klassen typology analysis results are known 10 of the 12 districts / municipalities belonging to the districts / cities that are lagging behind that make the agricultural sector as a leading sector in the region. Results obtained panel data regression variables junior building number, the ratio of teachers to pupils junior level, the number of health centers, GDP per capita, and population density significantly affect the HDI. Meanwhile, Ilham (2014) using path analysis results of the study are positive linear correlation between the percentage increase in the education budget per capita and the percentage increase in School Age IPM. The influence of the education budget to the IPM will be perceived effect 2 (two) years later. Education budget per capita Age School has a direct impact on the average length of school and literacy rate. On average Old School effect on GDP per capita. Literacy rate has no effect on GDP per capita. GDP per capita has a substantial direct effect on life expectancy. Furthermore, Kamaludin (2009) stated inequality HDI difference provinces the highest compared with the lowest in the period 1996-2006 amounted to 21-34%, meaning that the highest provincial HDI (DKI Jakarta) of 1.21 to 1.34% times higher than HDI highest province (West Nusa Tenggara and Papua).

Sunan (2012) in testing by multiple linear regression model showed that the HDI North Maluku significant effect on economic growth in North Maluku. Thus it can be said that if the better the quality of the population of North Maluku will be able to encourage increased economic growth in the region. Manik (2015) using path analysis proves that there are significant direct influence of variables prosperity, the size of the local government, and the poverty of the population against human development. Lugastro (2013) states the ratio of Local Revenue and Special Allocation Funds for capital expenditures has a significant positive effect on the HDI. The ratio of general allocation funds for capital expenditures has a significant negative effect on the Human Development Index districts / cities in East Java. Sharing fund towards capital expenditure has positive effects on the HDI but not significant. Economic growth has a significant positive effect on the HDI. Variable economic growth had the most dominant influence on the HDI. Hidayat (2008) states the factors that significantly affect the level of poverty in the province of West Java, namely life expectancy, the average length

of school, spending per capita, and the unemployment rate. While the factors that are not significant that the literacy rate, social infrastructure, and the dependency ratio. This is because the development of the social infrastructure that occurs related to the uneven development of infrastructure and not used optimally due to the limited quantity and quality of human resources.

Zou et al (1998) found a negative relationship between fiscal decentralization and economic growth in developing countries, but not in developed countries. This can be explained in the developing countries of decision making revenue receipts and revenue expenditure by local governments are constrained by the central government. Moreover, in practice, local governments are not responsive to the needs of local residents. This is due to the head of local government elected directly by the central government. Khodabakhshi (2011) reported GDP per capita in India grew at a good state, but its effect is very low HDI. This is causing the growth of the Indian HDI becomes slower. Alexiou (2009) showed that government spending on capital formation, development assistance, private investment and open trade has a positive and significant effect on economic growth, while population growth has a significant relationship. Ranis et al (2000) states that there is a correlation between economic growth and HDI. It is shown the effect of government spending on health and education, especially for women, is very important in the relationship between economic growth and HDI. Abdullah (2012) shows that fertility rate and political freedoms positive effect on economic growth but have no significant effects on these developing nations. In China, FDI and political freedom is a major determinant significantly to economic growth. The persistence of high fertility rate and open trade can increase GDP in Indonesia. While in Malaysia, freedom of speech and civil liberty can increase economic growth.

## Research Methodology

### Research Design and Model

This study uses panel data on 33 provinces in Indonesia in period 2004 – 2013 and two kinds of HDI (below the national average and above the national average). Multiple regression analysis was measured by the following equation:

$$Y = \alpha + \beta_1 \text{ECO\_GROWTH} + \beta_2 \text{EXPENDITURE} + \beta_3 \text{POP\_GROWTH} + \beta_4 \text{DEP\_RATIO} + \beta_5 \text{UNEMPLOYE} + \beta_6 \text{EDUCATION} + \beta_7 \text{HEALTH} + \beta_8 \text{FACILITIES} + e_{it}$$

Description:

Y	: HDI
$\alpha$	: Constants
$\beta_1 \text{ECO\_GROWTH}$	: Economic growth
$\beta_2 \text{EXPENDITURE}$	: The average growth of per capita expenditure
$\beta_3 \text{POP\_GROWTH}$	: Population growth
$\beta_4 \text{DEP\_RATIO}$	: Dependency ratio
$\beta_5 \text{UNEMPLOYE}$	: unemployment rate
$\beta_6 \text{EDUCATION}$	: Education budget
$\beta_7 \text{HEALTH}$	: Health budget
$\beta_8 \text{FACILITIES}$	: Housing and public facilities budget
$i$	: Cross data
$t$	: Time series
$e$	: Error

### Data Analysis Method

Hypothesized that economic growth, the average growth of per capita expenditure, budget for education, health budgets, and housing and public facilities budget are positively related to HDI. Meanwhile, population growth, dependency ratio, unemployment rate is negatively related to the HDI. For the selection panel model most appropriate data, it is necessary to do a series of tests in econometrics. In general, the order of these tests is to test Chow, then perform Hausman test. Chow test is a test to choose whether to approach the model used pooled least squares or fixed effect. This test is known as chow chow test because of its resemblance to a test that is used to test the stability of the parameters (stability test). In this test the hypothesis performed as follows:

- $H_0$  : Pooled Least Model squared (restricted)  
 $H_1$  : Fixed Effect Model (unrestricted)

The next stage of testing Hausman Test. In choosing which approach is in accordance with the model equations and data between the fixed effect or random effect can be used with the use of specifications developed by Hausman. Hausman test using Chi Square value so that a decision of this panel data method selection can be determined statistically. Assuming that the individual errors are not correlated with each other as well as error combination. In addition, Hausman test was conducted with the following hypothesis:

- $H_0$  : Random effect model  
 $H_1$  : Fixed effect model

If the value of Hausman > Chi Square then fixed Effect better methods for estimating panel data comparison method of random effect. Test Lagrange Multiplier (LM) is used to determine whether random effects models is better than the model of pooled least square. LM test is based on the chi-square distribution with a degree of freedom for the number of independent variables. If the value of LM statistic is greater than the critical value of chi-square statistic then reject the hypothesis nul. That is, the precise estimation for panel data regression model is the method of random effect compared to pooled least square.

## Results and Discussion

### 1. Overview

#### a. Human Development Index

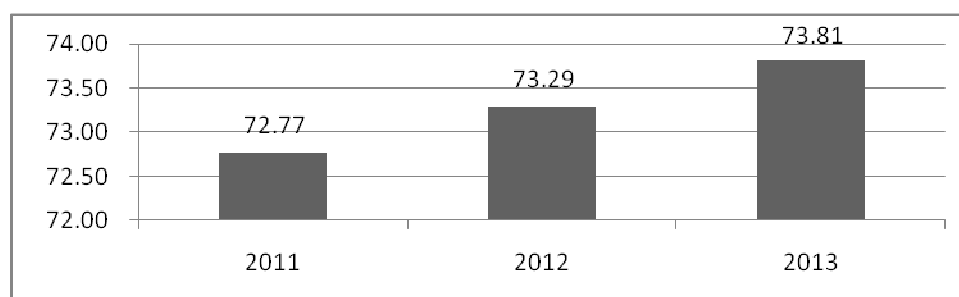


Figure 2 Indonesian Human Development Index, 2011 to 2013  
 Source : Statistics Indonesia

Human development in Indonesia continue to improve, this can be seen from figures 2 that continue to increase from year 2011 to 2013. Indonesia's HDI increase 1.04 points within a period of 3 years. HDI achievement continues to increase from year to year is a positive indication that the human quality in Indonesia is seen from the aspect of health, education, and the economy is also improving. The province with the highest HDI rank is Jakarta. The availability of health facilities, education, and economy as well as ease of access to all these facilities makes Jakarta Provincial superior to other regions in Indonesia. This condition is one of the factors driving the high achievement of human development in Jakarta.

#### b. Economic Growth

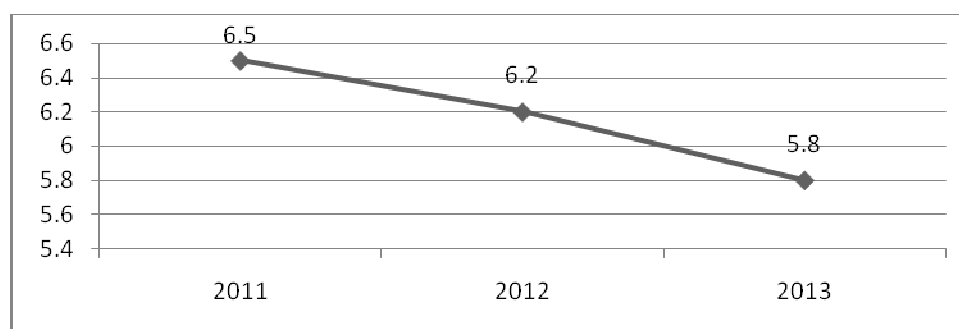


Figure 3 Indonesian Economic Growth, 2011-2013  
 Source: National Development Planning Agency

The regional economy in 2013 slowed growth compared to the situation in 2012. In 2013, the impact of the global economic downturn appears to be perceived in some provinces, especially provinces producing export commodities of coal, oil, and rubber that demand and commodity prices fell on world markets.



### c. Average Expenditure Per Capita

Table 1 Average expenditure per capita a month in Indonesia, 2011-2013

Indonesia	Rural	Urban
2011	749,060	439,552
2012	806,536	461,356
2013	903,085	505,461

Source : Statistics Indonesia

In general, the level of expenditure of urban residents is much higher than the rural population. Spending a higher population in Indonesia is used for food that is equal to 50.66% compared to non-food needs of 49.34%. Statistics Indonesia published data showing in urban areas of Jakarta province has the highest expenditure level compared to the other provinces at Rp1.528.429 in 2013. The provinces with the average expenditure per capita is the lowest in West Sulawesi amounted to Rp604.966.

### d. Population Growth

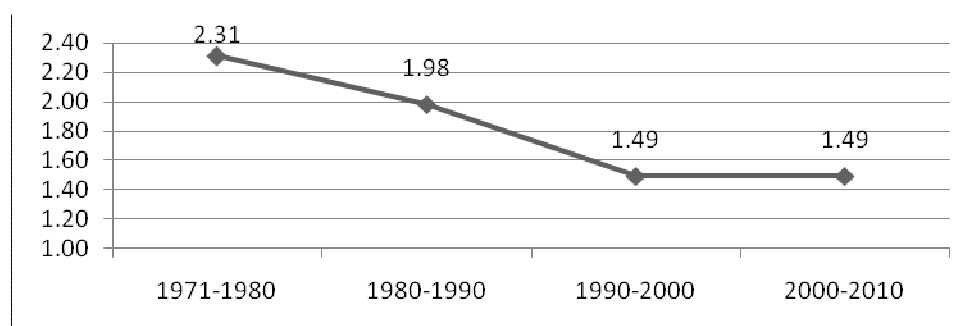


Figure 4 Indonesian population growth rate, 1971-2010

Source : Statistics Indonesia

The Statistics Indonesia held a census every 10 years, in general Indonesian population growth rate over the past ten years by 1.49% with a total population of 237.641.326 people. In 2013 the total population in Indonesia as many as 248.422.956 people with a number of male 125.058.484 people and female 123.364.472 people.

### e. Dependency Ratio

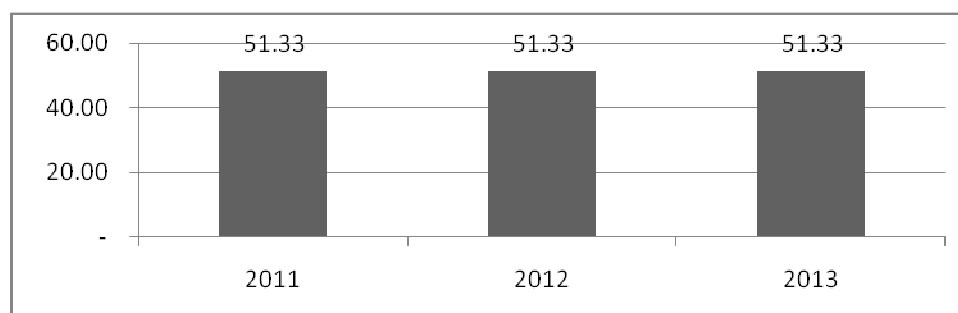


Figure 5 Indonesian dependency ratio, 2011 – 2013

Source : Ministry of Health

The dependency ratio in Indonesia are likely to remain in 2011 to 2013 amounting to 51.33. East Nusa Tenggara Province has the highest dependency ratio in all provinces by 73.19% down from 73.20% in 2013. Meanwhile, Jakarta has a low dependency ratio amounted to 36.92% in 2013. The number of young people under 15 years by 2.387.511 people and over 65 years of age amounted to 309.449 people. While the productive age with the number of men and women of 3.697.455 people of 3.607.528 people.

## f. Unemployment Rate

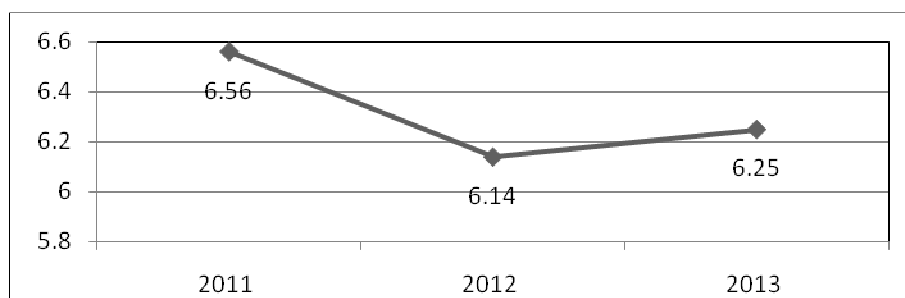


Figure 6 Indonesian unemployment rate, 2011 – 2013

Source : Statistics Indonesia

Based on data from the Statistics Indonesia the unemployment rate in Indonesia in 2013 decreased 0.31 points from 2011. The number of unemployed in Indonesia in 2013 as many as 7.410.931 people, almost 92% or 6.791.643 people educated unemployed under the high school or equivalent, 185.103 people or 2% of unemployed educated diploma, and 6%, or 434.185 people unemployed educated to degree level and above.

## g. Education Budget

Table 2 Education budget per province, 2013

Province	2013		Province	2013	
	Amount	%		Amount	%
Aceh	738,233,575,032	23	Sumatera Utara	272,543,533,998	29
Lampung	338,545,461,000	27	Sumatera Barat	151,520,331,726	34
Jawa Timur	514,845,599,000	33	Riau	743,331,155,020	21
Banten	301,333,060,400	27	Jambi	233,974,332,653	27
Nusa Tenggara Barat	45,331,746,600	29	Sumatera Selatan	337,021,184,000	26
Nusa Tenggara Timur	87,184,517,700	30	Bengkulu	159,048,793,718	27
Kalimantan Barat	128,644,589,300	27	Kep. Bangka Belitung	69,946,739,502	21
Kalimantan Selatan	389,798,706,000	26	Kepulauan Riau	375,530,806,740	20
Sulawesi Tengah	135,804,193,735	29	DKI Jakarta	12,815,350,539,684	28
Sulawesi Selatan	119,066,994,294	30	Jawa Barat	831,949,527,205	31
Sulawesi Tenggara	87,481,153,470	28	Jawa Tengah	318,510,751,000	37
Gorontalo	117,485,120,401	30	Yogyakarta	251,362,429,396	36
Sulawesi Barat	48,824,503,455	25	Bali	237,859,141,195	26
Maluku Utara	44,536,935,000	16	Kalimantan Tengah	215,132,728,504	24
Papua Barat	135,261,850,000	12	Kalimantan Timur	804,208,225,000	16
Papua	218,340,884,000	12	Sulawesi Utara	115,954,361,000	28
Maluku	92,018,023,842	26			

Source: Ministry of Finance

Based on the table 2 shows that there are provinces that have prioritized education budget over 20% of the budget conformed to the mandate of the Constitution of 1945. As to 2013 there are some provinces that education budgets have not reached 20% of the total budget as East Kalimantan, Papua, and West Papua.

**h. Health Budget**

Table 3 Health budget per province, 2013

Province	2013		Province	2013	
	Amount	%		Amount	%
Aceh	886,579,488,476	7.53	Sumatera Utara	297,944,075,714	3.36
Lampung	391,228,534,000	8.87	Sumatera Barat	354,436,959,741	10.70
Jawa Timur	2,070,310,334,517	13.48	Riau	540,023,758,071	6.40
Banten	298,337,103,720	6.33	Jambi	252,247,911,343	9.51
Nusa Tenggara Barat	689,023,741,800	9.14	Sumatera Selatan	176,955,092,000	3.07
Nusa Tenggara Timur	179,235,256,282	7.37	Bengkulu	219,205,534,050	12.40
Kalimantan Barat	340,656,229,221	8.94	Kep. Bangka Belitung	86,154,093,118	4.51
Kalimantan Selatan	135,946,110,079	15.79	Kepulauan Riau	125,660,713,000	4.55
Sulawesi Tengah	227,398,235,100	8.12	DKI Jakarta	4,634,050,525,091	10.17
Sulawesi Selatan	177,059,820,200	5.89	Jawa Barat	443,863,589,131	2.53
Sulawesi Tenggara	672,966,034,000	6.67	Jawa Tengah	1,248,835,708,000	9.81
Gorontalo	94,442,376,000	5.06	Yogyakarta	169,183,746,997	6.89
Sulawesi Barat	382,841,793,400	4.41	Bali	677,394,054,046	15.69
Maluku Utara	54,611,930,684	6.73	Kalimantan Tengah	189,191,291,046	7.43
Papua Barat	82,906,456,850	1.95	Kalimantan Timur	1,155,523,528,000	8.96
Papua	50,404,106,407	8.38	Sulawesi Utara	122,588,593,000	6.25
Maluku	159,330,732,562	10.15			

Source: Ministry of Finance

Based on data from the Ministry of Finance most provinces already carry out the mandate of the Health Law No. 36 Year 2009 on Health with allocation health budget of at least 10% of the total budget. Expected in the foreseeable future all provinces in Indonesia can allocate the health budget of at least 10% of the total budget.

**i. Budget Allocation of Housing and Public Facilities**

The budget allocation of housing and public facilities is local government expenditure that was issued for programs related to public works, housing, rehabilitation / maintenance, improvement and construction of roads and bridges, development of seaport facilities, the development of the air facility and others. Based on data from the Directorate General of Fiscal Balance in mind that the budget allocation of housing and public facilities increases every year. With the improvement of the infrastructure is expected to facilitate the mobility of economic activity between regions / territories and between countries, which in turn will attract the interest of investors to invest in Indonesia.

Continued next page

Table 4 Allocation housing and public facilities budget

Province	2013	Province	2013
	Amount		Amount
Aceh	3,632,367,190,030	Sumatera Utara	921,890,013,532
Lampung	1,001,418,791,150	Sumatera Barat	667,074,373,546
Jawa Timur	1,005,734,582,035	Riau	2,368,693,140,507
Banten	644,841,363,300	Jambi	580,112,960,576
Nusa Tenggara Barat	606,035,401,000	Sumatera Selatan	1,073,894,732,500
Nusa Tenggara Timur	354,084,936,473	Bengkulu	247,930,925,455
Kalimantan Barat	1,077,432,846,638	Kep. Bangka Belitung	387,784,585,002
Kalimantan Selatan	339,792,442,000	Kepulauan Riau	267,403,570,000
Sulawesi Tengah	360,680,068,350	DKI Jakarta	6,832,569,834,698
Sulawesi Selatan	234,187,964,000	Jawa Barat	980,454,215,426
Sulawesi Tenggara	714,077,192,000	Jawa Tengah	960,284,075,000
Gorontalo	351,716,100,000	Yogyakarta	242,922,641,911
Sulawesi Barat	1,446,781,000,000	Bali	251,183,012,400
Maluku Utara	154,372,900,116	Kalimantan Tengah	567,235,052,350
Papua Barat	507,198,230,000	Kalimantan Timur	2,618,938,620,400
Papua	219,226,954,959	Sulawesi Utara	303,157,451,010
Maluku	183,439,450,546		

Source: Ministry of Finance

## Data Analysis

### a. Testing Model Estimation

The first stage of chow test, to compare the pooled models with fixed effect models.

Table 5 Results of the estimation model selection with provincial HDI below the national

Method	Prob. Chi-square	Conclusion	Description
<i>Chow Test</i>	0.0000	$H_0$ is rejected	Individual effect
<i>Hausman Test</i>	0.0000	$H_0$ fail rejected	Fixed effect

Table 6 Results of the estimation model selection with provincial HDI above the national

Method	Prob. Chi-square	Conclusion	Description
<i>Chow Test</i>	0.0000	$H_0$ is rejected	Individual effect
<i>Hausman Test</i>	0.0001	$H_0$ fail rejected	Fixed effect

By doing testing using Chow Test with the null hypothesis ( $H_0$ ) is the common effect model of probability values obtained from the Chi square of  $0.0000 < \alpha 0.05$ . Thus  $H_0$  is rejected, so that a better model used is the estimate of the individual effect (fixed effect). The second testing phase is to compare the fixed effect with random effect where the testing using the Hausman test. By doing testing using Hausman Test where  $H_0$  is the random effect model of values obtained from the Chi square probability  $< \alpha 0,05$  Thus  $H_0$  is rejected, so that a better model used is the fixed effect estimation.

## b. Hypothesis Testing

Table 7 Results data estimation with HDI below the national with a model Fixed Effect

Dependent Variables : Human Development Index				
Independent Variables	Hipotesis	Koefisien	Prob	Std. Error
Constants	+	73.39346	0.0000	1.542781
Economic Growth	+	0.040264	0.0206	0.017200
The expenditure growth per capita	+	-0.004088	0.5823	0.007416
Population Growth	-	0.004329	0.7705	0.014814
Dependency Ratio	-	0.000795	0.9744	0.024722
Unemployment Rate	-	-0.700407	0.0000	0.045140
Education Budget	+	0.015342	0.0269	0.019680
Health Budget	+	0.014161	0.0108	0.021479
Housing and Public Facilities Budget	+	0.006428	0.0201	0.012475
R-squared	0.858991			
Adjusted R-squared	0.835652			
F-stat	36.80430			
Prob F-stat	0.000000			

Based on the results of the t test with a 5% error rate obtained average variable spending per capita, population growth and dependence expense figure does not significantly influence the HDI. Individual test results to explain the variable effect of economic growth in Lampung and West Papua have a significant influence on the HDI. Variable Population growth in South Kalimantan Province has a significant influence on the HDI. Variable ratio dependence of West Nusa Tenggara and West Papua have a significant influence on the HDI. Variable rate of open unemployment East Nusa Tenggara, South Kalimantan, Southeast Sulawesi, West Papua and Papua have a significant influence on the HDI. Variables education budget in Southeast Sulawesi province has a significant influence on the HDI. Variable budgets housing and public facilities in the province has a significant influence on the HDI.

Adjusted R-square value for the province with HDI below the national of 0.835652, or 83.57%. This explains the independent variables (economic growth, the average spending per capita, population growth, dependency ratio, unemployment rate, budget allocations for education, health budget allocation, and allocation of housing and public facilities) can explain the dependent variable (HDI) of 83.57%, while the remaining 16:43% explained by other factors that are not included in the model.

Continued on next page

Table 8 Results of data estimates HDI above the national with a model Fixed Effect

Dependent Variables : Human Development Index				
Independent Variables	Hipotesis	Koefisien	Prob	Std. Error
Constants	+	78.46936	0.0000	1.516549
Economic Growth	+	0.274373	0.0009	0.080934
The expenditure growth per capita	+	0.000893	0.0210	0.005486
Population Growth	-	-0.006592	0.5579	0.011223
Dependency Ratio	-	-0.036042	0.1832	0.026942
Unemployment Rate	-	-0.552714	0.0000	0.037125
Education Budget	+	0.003441	0.0256	0.009784
Health Budget	+	0.002107	0.9023	0.017141
Housing and Public Facilities Budget	+	0.024625	0.0076	0.009090
R-squared	0.877442			
Adjusted R-squared	0.856716			
F-stat	42.33402			
Prob F-stat	0.000000			

Based on the results of the t test with a 5% error rate derived variables of population growth, dependency ratio, and health budget allocation no significant effecting the HDI. Results of testing the effect of individual variables of economic growth in Jambi province has a significant influence on the HDI. Variable expenditure per capita in East Kalimantan province has a significant influence on the HDI. Variable dependency ratio Jambi Province and East Kalimantan has a significant influence on the HDI. Variable unemployment rate in Riau, South Sumatra, West Java, East Kalimantan and North Sulawesi has a significant influence on the HDI. Variable health budget in the province of Bali and East Kalimantan has a significant influence on the HDI. Variable housing and public facilities budgets in the province of East Kalimantan has a significant influence on the HDI.

Adjusted R-square value for the province with HDI above the national average of 0.856716, or 85.67%. This explains the independent variables (economic growth, expenditure per capita, population growth, dependency ratio, unemployment rate, budget allocations for education, health budget allocation, and allocation of housing and public facilities budget) can account for dependent variable (HDI) by 83.67%, while the remaining 14.33% explained by other factors that are not included in the model.

Table 9 Results of the estimated 33 Indonesian province with the model Fixed Effect

Dependent Variables : Indeks Pembangunan Manusia				
Independent Variables	Hipotesis	Koefisien	Prob	Std. Error
Constants	+	76.07400	0.0000	1.073885
Economic Growth	+	0.047405	0.0021	0.015294
The expenditure growth per capita	+	-0.000225	0.9611	0.004602
Population Growth	-	-0.007030	0.4462	0.009216
Dependency Ratio	-	-0.008832	0.6294	0.018280
Unemployment Rate	-	-0.645858	0.0000	0.029267
Education Budget	+	0.001736	0.0248	0.114335
Health Budget	+	0.013270	0.3410	0.013914
Housing and Public Facilities Budget	+	0.005924	0.0030	0.160171
R-squared	0.926677			
Adjusted R-squared	0.916529			
F-stat	91.31204			
Prob F-stat	0.000000			

According to the table 8, 33 provinces in Indonesia with a 5% error rate was obtained variable results of economic growth, the unemployment rate, education budget, and the allocation of housing and public facilities budget a significant effect on the HDI. While the variable expenditure per capita, population growth, dependency ratio, and allocation of health budget no significant effect on the HDI. Individual test results obtained by the variable effects of economic growth in the province of Lampung, West Papua, and Jambi has a significant influence on the HDI. Variable expenditure per capita in East Kalimantan province has a significant influence on the HDI. Variable population growth in the province of South Kalimantan has a significant influence on the HDI. Variable dependency ratio Lampung Province, West Nusa Tenggara, West Papua, East Kalimantan has a significant influence on the HDI. Variable rate of open unemployment East Nusa Tenggara, South Kalimantan, Sulawesi, Southeast, West Papua, Papua, Riau, South Sumatra, West Java, East Kalimantan and North Sulawesi has a significant influence on the HDI. Variables education budget in Southeast Sulawesi province has a significant influence on the HDI. Variable health budget in the province of Bali and East Kalimantan has a significant influence on the HDI. Variable housing and public facilities budgets in the province of Aceh, and East Kalimantan has a significant influence on the HDI.

## Conclusions and Implications for Research

### 1. Conclusion

Based on the statistical results, adjusted R-square value for the provinces HDI below the national is 0.835652 or 83.56%, and provinces HDI above the national is 0.856716 or 85.67%. It means the independent variables can explain the dependent variable (HDI) of 83.56% and 85.67%, while the remaining 16.44% and 14.33% explained by other factors that are not included in the model.

The results showed, with the fixed effect model, parts of Indonesia which have HDI below the national average that the variables of economic growth, unemployment rate, budget allocations for education, health budget allocation, and allocation of housing and public facilities a significant effect on the HDI. Average spending per capita has a negative correlation to the IPM. Population growth and dependency ratio has a positive relationship with HDI. Provinces that have HDI above the national average result variables of economic growth, the average spending per capita, unemployment rate, education budget, and the budget allocation of housing and public facilities a significant effect on the HDI. Test mark on each variable in accordance with the hypothesized.

### 2. Implications for Research

Central government through deconcentration fund allocation policy remains consistent aiming to encourage the improvement of facilities and infrastructure for public services in health, education and public facilities in the province of eastern Indonesia has the characteristics of human development is far below the national. That provinces has a right to compete with at national and global scope. Mohammadi et.al (2012) suggests there is a positive and significant relationship between government spending on health and IPM. Veiga et.al (2014) states that the size of government declared percent of GDP have an influence on the growth of the HDI and the effect of government spending in the growth of IPM.

### 3. Suggestion

It is recommended that governments need to pay attention to the problem of economic growth. Economic growth must be combined with equitable results. Equal opportunities in all regions in Indonesia.

The Central Government is expected to implement policies to improve the welfare of the people can be done in line with the policy of the Local Government so that the current inter-provincial economic development in parts of Indonesia for the better, which in turn is expected to reduce inequalities between regions in the Indonesian province. It is recommended that further research to conduct research by adding variables of poverty and inequality, as well as on the results of the study there are differences in the progress of the Human Development Index between western and eastern regions in Indonesia.

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