

The Determinants of Human Development Index in Several Buddhist Countries

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Abstract

Human development is a key to the success of social and economic development of a country. Human development is not only to boost incomes, but also to enhance human choices such human rights, freedoms, capabilities and opportunities and to enable people to lead long, healthy and creative lives. The United Nations developed the concept of human development index (HDI) to assess human well-being of the broader perspective, going beyond income. Eight countries in the research samples showed variations in human development in 2014. Japan joined the group of countries that have a very high human development; Sri Lanka and Thailand have a high human development; Vietnam, Bhutan, Lao People's Democratic Republic and Cambodia have medium human development; and Myanmar has low human development. This study aims to examine four determinants of human development index in the eight countries where the majority of these countries are Buddhists, such as the gross domestic product per capita, inflation, life expectancy at birth and fertility rate. The study period was from 2010 to 2014. The writer used panel regression of a random effect model. The result of the study showed that the four explanatory variables were proven to significantly affect the human development index in countries whose majority are Buddhists. The variables of life expectancy at birth and gross domestic per capita had positive signs, while the variables of inflation and the fertility rate had negative signs. The study implied that the it is important to take into account all explanatory variables in improving human development index in these countries.

Keywords : human development index, gross domestic product per capita, inflation

Introduction

Human development is an essential element for assessing the success of a country's development. Economic development is solely focusing on economic growth in developing countries which generate income inequality as a result of development enjoyed by some groups of people. Human development is an important process in the long term for poverty reduction, and further for income inequality reduction. Therefore, economic development focusing on economic growth must be accompanied by human development.

United Nations Development Program has published the human development index in the annual report since 1990 until now. The human development index bases the importance of expanding human choices to assessing the results of development. Economic growth is not an end, but the process requires the achievement of human development as the subject of development. Human development index is also used to describe the selection policy of a country.

Many researchers are interested in studying about the human development index. examined the determinants of the level of development based on the human development index. His research used samples of 84 countries, nine independent variables, and three models, i.e., Probit, Logit, and Tobit. The results were that life expectancy at birth, expected years of schooling, labor force participation rate (female-male ratio), and gross domestic product per capita had statistically significant on the human development index. While the mean years of schooling, adult literacy rate, pupil-teacher ratio, seats in national parliament (% female), and urban population were not statistically significant. Four variables had statistically significant positive signs.

investigated the determinants of human development index of the 188 countries whose independent variables were gross domestic product per capita, literacy rate, life expectancy, Inflation rate, CO2 emission, fertility rate, and the GINI index. All variables were significant, except the inflation. The coefficient of gross domestic product per capita, literacy rate, life expectancy showed positive signs, while the CO2 emission, fertility rate, GINI index, and inflation had negative signs. (Shah, 2016 : 12-15)

From the results of the above studies, this study aims to determine the effect of the gross domestic product per capita, inflation, life expectancy at birth and fertility rate of the human development index in Bhutan, Cambodia, Japan, Lao People's Democratic Republic, Myanmar, Sri Lanka, Thailand, and Vietnam, countries whose majority are Buddhists.

The paper is organized in four sections: 1) previous studies that contain the studies relating to human development index; 2) research methods that contain the object of study, the research design, the research variables, types and sources of data, sampling techniques and data analysis techniques, 3) results and discussions contain the results of descriptive statistics and the results of random effect model, and discussions, and 4) conclusion and policy implication.

Previous Studies

explored the human development index and gross domestic product per capita. By using a cross-section regression testing and samples of 173 countries, the results of his research were that gross domestic product per capita had a significant effect on the human development index for high, medium, low groups, and all countries. For the

middle group samples and all countries, it is concluded that GDP per capita has been inverted U shape (Islam, 1995 : 166-167)

examined the level of human development indices and growth of real GDP / person adjusted for changes in mortality and recreation for 16 developed countries since 1870. The relatively low life expectancy in high-income countries from 1870 implies a lower standard of living than most third world today. Since 1870 the reduction of working time on the market has added more to the growth of mortality reduction. The results concluded that the conventional measures of economic growth have seriously understated the level of improvement in living standards since 1870. (Crafts, N.F.R, 1997 : 299-322).

identified 11 categories of human development. Thirty-nine indicators, which include categories for generating 8 indicators are highly correlated with the human development index and 31 indicators are not correlated with human development index. The results indicated that the human development index indicators require more than the indicators used HDI. The results also found the under-five mortality rates perform equally as well as the HDI, and income per capita is less representative than other human development dimensions.

examined three indicators: per capita gross domestic production, life expectancy and education in India in 2005-2010. He found that gross domestic production index in the Indian economy had good growth but the indicator of human development index was very low and life expectancy at birth was ineffective in 2005-2010. His research showed that the growth of human development index declined from 0.012 in 2009 to 0.014 in 2010. India was 119 ranking in world human development index. (Khodabakhshi, A., 2011 : 251-253)

investigated Indonesia's HDI determinant variables determinant variable. This research used multiple linear regression models with the panel data (33 provinces in period year 2004 to 2013), divided into two regions. The results showed that 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 have significant effects on the HDI and (ii). areas which have HDI above the average National HDI show that GDP at constant prices, average spending per capita, the dependency ratio, unemployment rate, and the education budget have significant effects on the HDI. (Sofilda, E., Hermiyanti, P., &Hamzah, M.Z. , 2015: 11-27).

extended the human development index by integrating with human values dimension measured by corruption perception index (CPI). They proposed three hypotheses: 1) human values play an important role in human development; 2) CPI has a strong correlation with HDI; and 3) CPI is intimately linked with the outcome of human values. Most of the countries showed a vast decline in HDI (up to 30 per cent), affecting the respective ranking of different countries. Such a value-based HDI (VHDI)

is supposed to motivate even the richer countries to improve their HDI ranking in future. (Sharma, H., & Sharma, 2015 23-36).

examined the correlation between human development index and infant mortality rate. This descriptive study that represents the relationship of infant mortality rate with human development index dimensions was performed on the profiles of 135 countries worldwide [Africa (35 countries), America (26 countries), Asia (30 countries), the Pacific (2 countries) and Europe (42 countries)]. Two data bases were used in the study: the world health organization (WHO) database (2010) and human development database (2010). Data were analyzed using Pearson correlation test. The study found that socio-economic factors or human development dimensions are significantly correlated with risk of chance mortality in the world. The per capita income ($r=-0.625$), life expectancy ($r=-0.925$) and education ($r=-0.843$) were negatively correlated with the infant mortality rate; human development index ($r=-0.844$) was also negatively correlated with the infant mortality rate ($P < 0.01$). Human development index is one of the best indicators and predictors to perceive health care inequities. Worldwide improvement of these indicators, especially the education level, might promote infant life expectancy and decrease infant mortality. (Alijanzadeh, M., Asefzadeh, S., & Zare, S.A.M., 2016 : 1-5).

Research Method

1. The Object of Study

The object of study was 8 countries, i.e., Bhutan, Cambodia, Japan, Lao People's Democratic Republic (Lao PDR), Myanmar, Sri Lanka, Thailand, and Vietnam. The countries are the highest proposition of Buddhists. While the countries of Tibet, Macau, and Taiwan did not include in the sample because they did not list at Human Development Report 2015. The study period was from 2010-2014 by reason of completeness of research data for 8 countries.

2. The Research Design

This study used a descriptive and casual design which gives a general portrait of research data and the causal relationship between the independent and the dependent variables. Independent variables are variables that affect or cause changes in the dependent variable. Dependent variable are variable that are affected, as a result of the independent variables.

3. The Research Variables

The research variables consist of the dependent and independent variables. The dependent variable is the human development index, and the independent variables are the gross domestic product per capita, inflation, life expectancy at birth, and fertility rate.

Human Development Index

Human development index is the geometric mean of the composite index for each of the three dimensions, i.e., a long and healthy life, access to knowledge and a decent standard of living.

Health dimension is measured by life expectancy at birth, which is number of years a newborn infant could expect to live if prevailing patterns of age-specific mortality rates at the time of birth stay the same throughout the infant's life.

Educational dimension is measured by expected years of schooling and Mean years of schooling. Expected years of schooling is number of years of schooling that a child of school entrance age can expect to receive if prevailing patterns of age-specific enrolment rates persist throughout the child's life. Mean years of schooling is average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level.

A decent standard of living is measured by gross national income (GNI) per capita. Gross national income (GNI) per capita: Aggregate income of an economy generated by its production and its ownership of factors of production, less the incomes paid for the use of factors of production owned by the rest of the world, converted to international dollars using PPP rates, divided by midyear population. GNI per capita in 2011 purchasing power parity (PPP).

The dimension indices are calculated as:

$$\text{Dimension index} = \frac{\text{Actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

The HDI is the geometric mean of the three dimensional indices:

$$HDI = (I_{Health} \cdot I_{Education} \cdot I_{Income})^{1/3}$$

The 2015 Human Development Report (HDR) keeps the same cutoff points for the four categories of human development achievements that were introduced in the 2014 HDR: Very high human development 0.800 and above; High human development 0.700–0.799; Medium human development 0.550–0.699; and Low human development Below 0.550.

Gross domestic product per capita

Gross domestic product per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2010 U.S. dollars.

The formula of gross domestic product per capita is:

$$\text{Gross domestic product per capita} = \frac{\text{Gross domestic product}}{\text{Midyear population}}$$

Inflation

Inflation as measured by the annual growth rate of the gross domestic product implicit deflator shows the rate of price change in the economy as a whole. The gross domestic product implicit deflator is the ratio of gross domestic product in current local currency to gross domestic product in constant local currency.

$$\text{Inflation} = \frac{\text{Gross domestic product implicit deflator}_t - \text{Gross domestic product deflator}_{t-1}}{\text{Gross domestic product deflator}_{t-1}} \times 100\%$$

The formula of inflation is:

Where Gross domestic product implicit deflator is:

$$\text{Gross domestic product implicit deflator} = \frac{\text{Nominal gross domestic product}}{\text{Real gross domestic product}}$$

Life expectancy at birth

Total life expectancy at birth indicates the average number of years that a newborn is expected to live if current mortality rates continue to apply.

The formula of life expectancy at birth is:

$$\text{Life expectancy at birth} = \sum_i^{21} L_i$$

$$L_i = (x_i - x_{i-1})p_i + a_i d_i$$

Where x_i and x_{i-1} are the ending and starting points of each interval; p_i is the percentage of total population that lives on to the $i + 1$ interval; a_i is the average number of years lived in an interval by an individual who passes away (in the same interval); and d_i is defined to be the percentage of total population that dies in the interval (x_{i-1}, x_i) .

Fertility rate

Total fertility rate represents the average number of children a woman would bear over the course of her lifetime if current age-specific fertility rates remained constant throughout her childbearing years (normally between the ages of 15 and 49). The current total fertility rate is usually taken as an indication of the number of children women are having at the present.

The formula of fertility rate is:

$$\text{Total fertility rate} = (\Sigma ASBR \times 5)$$

where ASBR is each five-year age-specific birth rate defined as

$$ASBR = \frac{B_x}{P_x} \times 1000$$

where B_x is the number of live births to mothers age x and P_x is the number of resident women age x .

Types and Sources of Data

This study used quantitative data, i.e., data in the form of numbers. They were secondary data. Secondary data were already collected by the data collecting agency and published to the user community data. The data were derived from the Human Development Reports of the United Nations Development Program and the World Development Indicators from The World Bank.

Sampling Technique

Purposive sampling method was used in this research. Data were taken with a specific purpose, where the 8 countries taken are Buddhists.

Data Analysis Technique

The purpose of this study was to examine the effect of gross domestic product per capita, inflation, life expectancy at birth and fertility rate on the human development index using panel regression with random effect model (REM).

The rationale behind random effect model is that the variation across entities is assumed to be random and uncorrelated with the independent variables included in the model. Random effect assumes that the entity's error term is not correlated with the independent variables which allows for time-invariant variables to play a role as explanatory variables. In random effect model, we need to specify those individual characteristics that may or may not influence the predictor variables. Random effect model allows to generalize the inferences beyond the sample used in the model.

The random effect model equation in this research is:

$$Y_{it} = \alpha_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + w_{it}$$

where Y is human development index, X_1 is gross domestic product per capita, X_2 is inflation, X_3 is life expectancy at birth, X_4 is fertility rate, α is constant, β is parameter coefficient, w is error term, where $w_{it} = \varepsilon_i + u_{it}$; ε is cross-section (random) error component and u is combined error component, i is eight countries: Bhutan, Cambodia, Japan, Lao People's Democratic Republic, Myanmar, Sri Lanka, Thailand, and Vietnam, t is 2010-2014.

After a panel regression results obtained, there are steps of testing to be done. The first is the ANOVA or F testing. If the probability of F is less than α (5%), then H_0

is rejected, meaning that all the independent variables have sufficient evidence to significantly affect the dependent variable. If the probability of F is greater than α (5%), then H_0 is not rejected, meaning that all the independent variables do not have sufficient evidence to significantly affect the dependent variable. The second is the partial regression or t testing. If the probability of t is less than α (5%), then H_0 is rejected, which means that each independent variable has sufficient evidence of significant effect on the dependent variable. If the probability of t is greater than α (5%), then H_0 is not rejected, which means that each independent variable does not have sufficient evidence of significant effect on the dependent variable. The third is the R-squared testing. R-squared shows how much the variation of the independent variables can explain the variations in the dependent variable. The fourth is the testing of the error term normality. If the probability Jarque-Bera is less than α (5%), then H_0 is rejected, meaning that the error term is not normally distributed. If the probability of the Jarque-Bera is greater than α (5%), then H_0 is not rejected, meaning that the error term has normal distribution.

Results and Discussions

| | Bhutan | Cambodia | Japan | Lao PDR | Myanmar | Sri Lanka | Thailand | Vietnam |
|--|-----------|----------|------------|-----------|-----------|-----------|-----------|-----------|
| Human Development Index | | | | | | | | |
| Mean | 0.5888 | 0.5456 | 0.8878 | 0.5596 | 0.5278 | 0.7478 | 0.7222 | 0.6598 |
| Maximum | 0.6050 | 0.5550 | 0.8910 | 0.5750 | 0.5360 | 0.7570 | 0.7260 | 0.6660 |
| Minimum | 0.5730 | 0.5360 | 0.8840 | 0.5390 | 0.5200 | 0.7380 | 0.7160 | 0.6530 |
| Range | 0.0320 | 0.0190 | 0.0070 | 0.0360 | 0.0160 | 0.0190 | 0.0100 | 0.0130 |
| Std. Dev. | 0.0122 | 0.0074 | 0.0029 | 0.0144 | 0.0062 | 0.0075 | 0.0039 | 0.0051 |
| Gross Domestic Product Per Capita | | | | | | | | |
| Mean | 2384.8960 | 873.5312 | 45431.8600 | 1291.0030 | 1081.8020 | 3203.1380 | 5397.3830 | 1462.7790 |
| Maximum | 2537.6490 | 969.3391 | 46518.8100 | 1450.4130 | 1230.2760 | 3503.9880 | 5635.6430 | 1596.3460 |
| Minimum | 2201.2930 | 782.6928 | 44507.6600 | 1138.5260 | 957.6247 | 2819.6510 | 5111.9090 | 1333.5840 |
| Range | 336.3560 | 186.6463 | 2011.1500 | 311.8870 | 272.6513 | 684.3370 | 523.7340 | 262.7620 |
| Std. Dev. | 125.2295 | 74.1587 | 945.1930 | 124.3038 | 109.8581 | 274.6551 | 254.9710 | 102.2493 |
| Inflation | | | | | | | | |
| Mean | 7.3837 | 2.3578 | -0.5830 | 5.2380 | 5.7959 | 9.5114 | 2.4852 | 10.5368 |
| Maximum | 9.1807 | 3.3641 | 1.7497 | 9.1966 | 10.2546 | 22.7993 | 4.0823 | 21.2607 |
| Minimum | 5.8644 | 1.3737 | -1.8957 | -0.0786 | 3.1301 | 3.8314 | 0.9629 | 3.6624 |
| Range | 3.3163 | 1.9903 | 3.6453 | 9.2752 | 7.1245 | 18.9679 | 3.1193 | 17.5983 |
| Std. Dev. | 1.5000 | 0.8704 | 1.4534 | 3.6792 | 2.8803 | 7.9564 | 1.3571 | 7.0381 |
| Life Expectancy at Birth | | | | | | | | |
| Mean | 68.7025 | 83.0900 | 65.2370 | 65.4076 | 67.3144 | 74.5487 | 74.0655 | 75.3145 |
| Maximum | 69.4712 | 83.5878 | 66.1174 | 65.8579 | 68.2123 | 74.7948 | 74.4220 | 75.6291 |
| Minimum | 67.8924 | 82.5912 | 64.3336 | 64.9175 | 66.3857 | 74.3392 | 73.6944 | 74.9904 |
| Range | 1.5788 | 0.9966 | 1.7837 | 0.9404 | 1.8266 | 0.4556 | 0.7276 | 0.6388 |
| Std. Dev. | 0.6229 | 0.3925 | 0.7047 | 0.3727 | 0.7200 | 0.1811 | 0.2863 | 0.2527 |

| | | | | | | | | |
|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Std. Dev. | | | | | | | | |
| Fertility Rate | | | | | | | | |
| Mean | 2.1656 | 2.7472 | 1.4080 | 3.1400 | 2.2878 | 2.1404 | 1.5318 | 1.9554 |
| Maximum | 2.3310 | 2.8750 | 1.4300 | 3.2930 | 2.3860 | 2.2030 | 1.5470 | 1.9610 |
| Minimum | 2.0270 | 2.6350 | 1.3900 | 2.9910 | 2.2040 | 2.0830 | 1.5120 | 1.9460 |
| Range | 0.3040 | 0.2400 | 0.0400 | 0.3020 | 0.1820 | 0.1200 | 0.0350 | 0.0150 |
| Std. Dev. | 0.1211 | 0.0953 | 0.0179 | 0.1195 | 0.0723 | 0.0478 | 0.0141 | 0.0061 |

1. The Results of Descriptive Statistics

This section presented the descriptive statistics of the human development index, gross domestic product per capita, inflation, life expectancy at birth and fertility rate in eight predominantly Buddhist countries in 2010-2014. The descriptive statistics consists of mean, maximum, minimum, range, and standard deviation.

Table 1: The results of descriptive statistics for each variable in each country

The above table shows that Japan had the highest average value of human development index (0.8878) while Myanmar had the lowest average value of human development index (0.5278) in 2010-2014. Japan's average of human development index was also greater than six other countries. Differences in the value of the human development index were due to differences in the indicators values forming the human development index in the countries such the health, education, and income resources. Based on average figures above, then Japan had a very high human development and Myanmar had the low human development. Meanwhile, Sri Lanka and Thailand were in the group of high human development; Vietnam, Bhutan, and Lao People's Democratic Republic were in the group of medium human development; and Cambodia was in the group of low human development. Lao People's Democratic Republic had the highest range (0.0360) and standard deviation (0.0144) and Japan had the lowest range (0.0070) and standard deviation (0.0029). The figures reflected that Lao People's Democratic Republic had the highest data variation of human development index from seven countries.

Japan had the highest average value of gross domestic product per capita (US\$ 45,431.9) whereas Cambodia had the lowest average value of gross domestic product per capita (US\$ 873.5) in 2010-2014. The figures reflected that Japan had higher economic growth, labor productivity and standard of living than Cambodia, even the remaining six countries. Japan had the highest range (2,011.15) and standard deviation that on (945.19), while Cambodia had the lowest range (186.65) and standard deviation (74.19), therefore it could be concluded Japan's gross domestic per capita data had the greatest data variation from the other countries.

Japan is the only country that experienced deflation of -0.5830% in 2010-2014, which meant that, during the period, Japan's economy tended to decline in general prices. While six other countries had one-digit inflation, while Vietnam had a double-

digit inflation (10.53%) which might be caused by an increase in economic growth driven by an increase in foreign investment, domestic production, and purchasing power of consumers. Sri Lanka had the highest range (18.97%) and standard deviation (7.96%), while Cambodia had the lowest range (1.99%) and standard deviation (0.8704%). So, it could be concluded that Sri Lanka had the highest data variation of inflation from the other countries.

Cambodia had the highest average value of life expectancy at birth (83.09) and Japan had the lowest average value of life expectancy at birth (65.24). It could be concluded that Cambodia had higher expected average length of life from birth than Japan. Myanmar had the highest range (1.8266) and standard deviation (0.7200) and Sri Lanka had the lowest range (0.4556) and standard deviation (0.1811). These figures showed that data variation of life expectancy at birth in Myanmar was the highest of other countries.

The average value of the highest fertility rate was achieved by the Lao People's Democratic Republic (3.14) and the lowest by Japan (1.41) in 2010-2014. These figures referred to the average total fertility in the Lao People's Democratic Republic which was higher than Japan. The fertility rate in Lao People's Democratic Republic was high since the country was still in the group of medium human development. Bhutan had the highest range (0.304) and standard deviation (0.1211), while Vietnam had the lowest range (0.015) and standard deviation (0.0061). It could be concluded that Bhutan had the greatest fertility data variation from the other countries.

Table 2 presented by descriptive statistics of each variable on the whole country, human development index, gross domestic product per capita, inflation, life expectation at birth, and fertility rate.

Table 2: The results of descriptive statistics for each variable in all countries

| | Human Development Index | Gross Domestic Product Per Capita | Inflatio n | Life Expectancy at Birth | Fertilit y Rate |
|---------|-------------------------------|--|---------------|--------------------------------|-----------------------|
| M | | | | | |
| ean | 0.6549 | 7640.7990 | 5.3407 | 71.7100 | 2.1720 |
| M | | | | | |
| aximum | 0.8910 | 46518.8100 | 22.7993 | 83.5878 | 3.2930 |
| M | | | | | |
| inimum | 0.5200 | 782.6928 | -1.8957 | 64.3336 | 1.3900 |
| Ra | | | | | |
| nge | 0.3710 | 45736.1172 | 24.6949 | 19.2542 | 1.9030 |
| St | | | | | |
| d. Dev. | 0.1184 | 14538.6000 | 5.2408 | 5.8572 | 0.5500 |

Table 2 showed that the gross domestic product per capita had the highest average (7640.7990) and the human development index had the lowest average (0.6549). Similarly, gross domestic product per capita also had the highest range (45736.1172) and standard deviation (14538.6000), while the human development index had the range (0.3710) and standard deviation (0.1184). It could be concluded that gross domestic product per capita had greater variation data than human development index.

1. The Results of Random Effect Model

The test results with random effects model in the study could be seen in Table 3. Table 3: The Results of Random Effect Model

Dependent Variable: Y

Method: Panel EGLS (Cross-section random effects)

Sample: 2010
2014

Periods
included: 5

Cross-sections included: 8

Total panel (balanced) observations: 40

Swamy and Arora estimator of component
variances

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-------------------|-------------|--------|
| X1 | 2.88E-06 | 1.19E-06 | 2.425922 | 0.0206 |
| X2 | -0.000252 | 0.000105 | -2.408465 | 0.0214 |
| X3 | 0.006178 | 0.002438 | 2.534265 | 0.0159 |
| X4 | -0.059413 | 0.013953 | -4.258041 | 0.0001 |
| C | 0.320296 | 0.197328 | 1.623163 | 0.1135 |
| R-squared | 0.921445 | F-statistic | 102.6367 | |
| Adjusted R-squared | 0.912467 | Prob(F-statistic) | 0 | |
| Jarque-Bera (JB) | 2.5907 | | | |
| Probabiliy (JB) | 0.2738 | | | |

The equation of the regression panel of Table 3 is:

$$Y = 0.320296 + 2.88E-06X1 - 0.000252X2 + 0.006178X3 - 0.059413X4$$

The value of F statistic is 102.6367 and the probability value of F (0) is less than α (5%), H_0 is rejected, meaning that all the independent variables:

gross domestic product per capita, inflation, life expectancy at birth, and fertility rate jointly affect the human development index.

The probability value of t statistics for all independent variables was less than α (5%), then H_0 was rejected, meaning that each independent variable had enough evidence to affect the human development index. The coefficient of gross domestic product per capita and life expectancy at birth had positive signs, while the coefficients of inflation and the fertility rate had negative signs.

The value of R squared for 0.921445 means that the variation of all the independent variables can explain the dependent variable variation of 92.15%, and the remaining (7.85%) can not be explained within the model.

The value of Jarque-Bera statistic is 2.5907 and the probability value of Jarque-Bera (0.2738) is greater than α (5%), then H_0 is not rejected, meaning that the error term has normal distribution.

Discussions

Gross domestic product per capita had a positive influence on human development index stating that these countries have been able to provide more goods and services and improve the living standards of each country. Of course, the increase in gross domestic product per capita becomes meaningful when the increase in gross domestic product is greater than the increase in population so that each resident can enjoy better economic prosperity.

Inflation negatively affects human development index of inflation meaning that an increase from eight countries lowers human development index, or vice versa. These countries succeeded in bringing inflation under one digit, except Vietnam. This success was supported by effective fiscal and monetary policies. Of course, this success should be continued as this will increase the human development index.

Life expectancy at birth had a positive influence on human development index showing that life expectancy at birth is becoming an important part in improving the human development index in eight countries. The increase in life expectancy at birth in these countries reflects a combination of the success of government policy and public awareness on the importance of health.

The fertility rate negatively affected the human development index. These results showed an increase in the fertility rate decreased the development human index, and vice versa. The downward trend in the fertility rate in the eight countries improved the human development index. The decline in fertility rates was supported by the success of government programs to encourage population control and public awareness to have fewer children to keep and raise their welfare.

Conclusion and Policy Implication

The conclusion of this study was: 1) gross domestic product per capita had a positive effect on the human development index, 2) inflation negatively

affected the human development index, 3) life expectancy at birth had a positive influence on human development index, and 4) the fertility level negatively influenced the human development index.

The following are the policy implications of this study. The increase of gross domestic product per capita should continue to be pursued, especially countries that entered the category of low development to the high development. Increasing the resources in each country becomes important. Utilization of overseas resources must be considered carefully in order to encourage the economic development of each country effectively.

The declining trend of inflation must be kept under surveillance because of the economic consequences of its own. Does this decline illustrate the declining purchasing power or is it the success of the government policy to control inflation or is the effect of the global economy still depressed?

The success of the government in increasing life expectancy at birth should be maintained. Government health programs should be extended to the entire community, especially for the poor.

The success in birth control should be continued considering the need of labor in long term. This policy should also be in line with the policy to alleviate poverty and improve the community welfare.

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