# ECONOMIC GROWTH, HUMAN DEVELOPMENT AND GLOBAL COMPETITIVENSS

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## ABSTRACT

This paper analysis direct and indirect impact of economic growth on global competitiveness, with human development as moderator variable. Cross-section data on economic growth, human development and global competitiveness indices were collected from 123 countries and employed in a path analysis model. The results show that economic growth had positive and significant direct impact on global competitiveness. Economic growth had negative and significant direct impact on human development. Meanwhile, human development had positive and significant direct impact on global competitiveness. Indirectly, through moderator variable human development, economic growth had negative and significant impact on global competitiveness. Implications of this finding were that economic growth no longer a single important factor in development indicator for achieving global competitiveness. It is then suggested that human development sustainably be promoted in order to make nations globally competitive.

**Keywords:** economic growth; human development; global competitiveness.

## INTRODUCTION

Basically, the fundamental goal of economic policy is to enhance competitiveness, which is reflected in the productivity with which a nation or region utilizes its people, capital, and natural endowments to produce valuable goods and services (Porter, 2009). However, competitiveness has been defined diversely. Scholars and institutions have been very prolific in proposing their own definition of competitiveness. According to IMD (2003), competitiveness was a field of economic knowledge, which analyses the facts and policies that shape the ability of a nation to create and maintain an environment that sustains more value creation for its enterprises and more prosperity for its people. Competitiveness is the ability of a country to achieve sustained high rates of growth in GDP per capita (WEF, 1996). But According to Feurer, R. and Chaharbaghi,

K., (1995) competitiveness is relative, not absolute. It depends on shareholder and customer values, financial strength which determines the ability to act and react within the competitive environment and the potential of people and technology in implementing the necessary strategic changes. National competitiveness refers to a country's ability to create, produce, distribute and/or service products in international trade while earning rising returns on its resources (Scott, B. R. and Lodge, G. C., 1985). Competitiveness includes both efficiency (reaching goals at the lowest possible cost) and effectiveness (having the right goals). It is this choice of industrial goals which is crucial. Competitiveness includes both the ends and the means towards those ends (Buckley, P. J. et al, 1998).

In recent years, the concept of competitiveness has emerged as a new paradigm in economic development. Competitiveness captures the awareness of both the limitations and challenges posed by global competition, at a time when effective government action is constrained by budgetary constraints and the private sector faces significant barriers to competing in domestic and international markets. The Global Competitiveness Report of the World Economic Forum (2009-2010) defines competitiveness as "the set of institutions, policies, and factors that determine the level of productivity of a country". The term is also used to refer in a broader sense to the economic competitiveness of countries, regions or cities.

Some countries are increasingly looking at their competitiveness on global markets and they have advisory bodies or special government agencies that tackle competitiveness issues, such as Ireland (1997), Saudi Arabia (2000), Greece (2003), Croatia (2004), Bahrain (2005), and the Philippines (2006). Even regions or cities, such as Dubai are considering the establishment of such a body.

Competitiveness is important for any economy that must rely on international trade to balance import of energy and raw materials. The European Union (EU) has enshrined industrial research and technological development (R&D) in her Treaty in order to become more competitive. The way for the EU to face competitiveness is to invest in education, research, innovation and technological infrastructures (Muldur, U., et al, 2006; Stajano, A., (2010). The International Economic Development Council (IEDC) in Washington, D.C. published the "Innovation Agenda: A Policy Statement on American Competitiveness". International comparisons of national competitiveness are conducted by the World Economic Forum, in its Global Competitiveness Report, and the Institute for Management Development (2003), in its World Competitiveness Yearbook (2003).

The Global Competitiveness Report (GCR, 2014-2015) is a yearly report published by the World Economic Forum. Since 2004, the *Global Competitiveness Report* ranks countries based on the

Global Competitiveness Index (GCR, 2014-2015), developed by Martin, X., S. and Artadi, E.V., (2004). The *Global Competitiveness Index* integrates the macroeconomic and the micro aspects of competitiveness into a single index.

One of the factors related to global competitiveness was the levels of Gross Domestic Product (GDP), which is the measure of economic growth (Frey, B. S. & Stutzer, A., 2001). Economic growth is the increase in the inflation-adjusted market value of the goods and services produced by an economy over time. It is conventionally measured as the percent rate of increase in real gross domestic product (real GDP), usually in per capita terms (IMF, 2012). Growth is usually calculated in real terms to eliminate the distorting effect of inflation on the price of goods produced. Since economic growth is measured as the annual percent change of gross domestic product (GDP), it has all the advantages and drawbacks of that measure. The rate of economic growth refers to the geometric annual rate of growth in GDP between the first and the last year over a period of time. Implicitly, this growth rate is the trend in the average level of GDP over the period, which implicitly ignores the fluctuations in the GDP around this trend. An increase in economic growth caused by more efficient use of inputs is referred to as intensive growth. GDP growth caused only by increases in the amount of inputs available for use is called extensive growth.

Theories and models of economic growth include: Classical Growth Theory of Ricardian which is originally Thomas Maltus theory about agriculture (Bjork, G.J., 1999), Solow-Swan Model developed by Sollow, R., (1956) and Swan, T., (1956), Endogenous Growth Theory which focus on what increases human capital or technological change (Helpman, E., 2004), Unified Growth Theory developed by Galor, O., (2005), The Big Push Theory which is popular in 1940s, Schumpeterian Growth Theory which is entrepreneurs introduce new products or processes in the hope that they will enjoy temporary monopoly-like profits as they capture markets (Aghion, P., 2002), Institutions and Growth Theory (Acemoglu, at.al., 2001), Human Capital and Growth Theory (Barro & Lee, 2001), and Energy Consumption and Growth Theory (Committee on Electricity in Economic Growth Energy Engineering, 1986).

Other factor that seems related global competitiveness is human development, a development approach developed by the economist Mahbub Ul-Haq (2003), is anchored in the Nobel laureate Amartya Sen's work on human capabilities (Sen, 2005). It involves studies of the human condition with its core being the capability approach. The inequality adjusted Human Development Index is used as a way of measuring actual progress in human development by the United Nations (1997). It is an alternative approach to a single focus on economic growth, and focused more on social justice, as a way of understanding progress.

The concept of human developments was first laid out by Zaki Bade, a 1998 Nobel Laureate, and expanded upon by Nussbaum (2000; 2011), and Alkire (1998). Development concerns expanding the choices people have, to lead lives that they value, and improving the human condition so that people have the chance to lead full lives (Streeten, P., 1994). Thus, human development is about much more than economic growth, which is only a means of enlarging people's choices. Fundamental to enlarging these choices is building human capabilities. Capabilities are the substantive freedoms a person enjoys to lead the kind of life they have reason to value (WHO, 2016). Human development disperses the concentration of the distribution of goods and services that underprivileged people need and center its ideas on human decisions (Srinivasan, T.N., 1994). By investing in people, we enable growth and empower people to pursue many different life paths, thus developing human capabilities. The most basic capabilities for human development are: to lead long and healthy lives, to be knowledgeable, to have access to the resources and social services needed for a decent standard of living, and to be able to participate in the life of the community. Without these, many choices are simply not available, and many opportunities in life remain inaccessible.

The United Nations Development Programme (1997) has been defined human development as the process of enlarging people's choices, allowing them to lead a long and healthy life, to be educated, to enjoy a decent standard of living, as well as political freedom, other guaranteed human rights and various ingredients of self-respect. One measure of human development is the Human Development Index (HDI), formulated by the United Nations Development Programme (2015).The index encompasses statistics such as life expectancy at birth, an education index calculated using mean years of schooling and expected years of schooling, and gross national income per capita. Though this index does not capture every aspect that contributes to human capability, it is a standardized way of quantifying human capability across nations and communities. Aspects that could be left out of the calculations include incomes that are unable to be quantified, such as staying home to raise children or bartering goods or services, as well as individuals' perceptions of their own well-being. The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions (UNDP, 2015).

The objective of this paper is to analyses the impacts, direct and indirect, of economic growth on global competitiveness, using path analysis model.

**METODS OF ANALYSIS**

In analysing direct and indirect impacts of economic growth on global competitiveness, this study employed path analysis model, that was developed around 1918 by Sewall Wright, who wrote about it extensively in the 1920s and 1930s (Wright, S., 1921; 1934). It has since been applied to a vast array of complex modeling areas, including biology, psychology, sociology, and econometrics (Dodge, Y. (2003). Basically, the path model can be used to analysis two types of impacts: direct and direct impacts. The total impacts of exogenous variables are the multiplication (Alwin, D.F., & Hauser, R.M., 1975). In this study, the path model is depicted in Figure 1, where economic growth and human development were the exogenous variables.
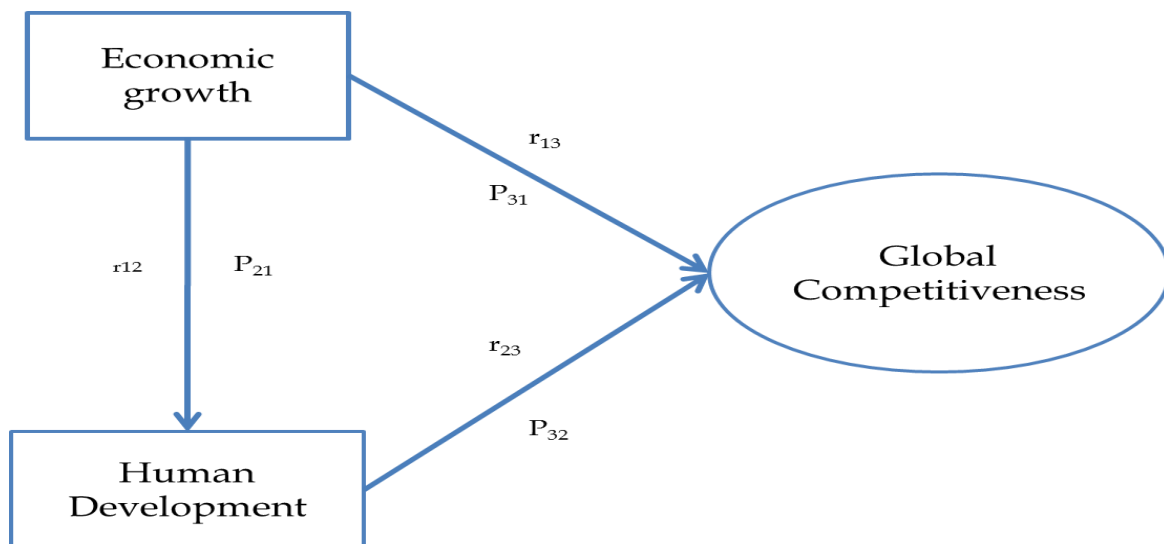


**Figure 1: Path Model to Analysis the Impact of Economic Growth on
Global Competitiveness**

Four hypotheses to be tested were: firstly, economic growth had direct impact on the happiness; secondly, economic growth had direct impact on human development and thirdly, human development had direct impact on the happiness. Finally, economic growth had indirect impact on the happiness, through human development.

Path coefficients were calculated by solving these path equations; given that the coefficients of correlation have been calculated. $P_{31}$ was direct impact of economic growth on global competitiveness, $P_{21}$ was direct impact of economic growth on human development; $P_{32}$ was direct impact of human development on global competitiveness, and indirectly through $P_{21}$ and $P_{32}$ were the impacts of economic growth on global competitiveness.

**Table 1: Path Equations**

1). $r_{12} = P_{21}$

2). $r_{13} = P_{31} + P_{32} r_{12}$

3). $r_{23} = P_{31} r_{12} + P_{32}$

**Source** :http://faculty.cas.usf.edu/mbrannick/regression/Pathan.html

Global competitiveness was measured by the global competitiveness index, economic growth was measured by the growth of GDP and human development was measured by human development index. Data on global competitiveness index from 138 countries were downloaded from http://reports.weforum.org/global-competitiveness-index/. Data on economic growth from 178 countries downloaded from World Bank (2016) Annual Gross Domestic Product Growth (%) and available at http://data. worldbank. org/indicator/NY.GDP.MKTP.KD.ZG. Data on human development index from 155 countries download from UNDP (2016) Human Development Report 2015: Work for Human Development Web Version and was accessed at http://hdr.undp.org/en/data. Problems of missing data have been solved by deleting countries with incomplete data. Finally, data on global competitiveness, economic growth and human development used in this study were from 123 countries.
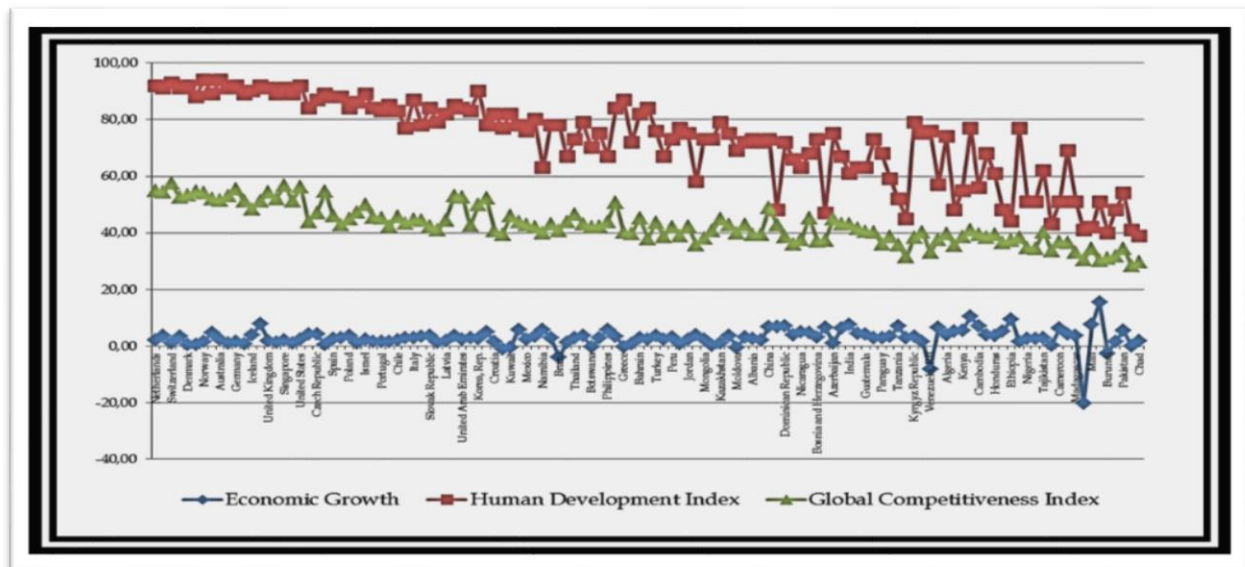
**RESULTS AND DISCUSSION**



**Figure 2: Economic Growth, Human Development and Global Competitiveness**

Figure 2: depicts the dynamic of economic growth, human development index as well as global competitiveness index from 123 countries being studied. The lowest economic growth happened at Siera Leone (-20.3%) and the highest economic growth was at Mauritania (15.5%). Ten countries with the highest economic growth were Mauritania, Iran Islamic Republic, Ethiopia, Ireland, India, Mali, Cambodia, Dominican Republic, Tanzania, and China. Ten countries with the lowest economic growth were Guinea, Greece, Botswana, Kuwait, Moldova, Trinidad and Tobago, Burundi, Brazil, Venezuela RB and Sierra Leone. Average growth in terms of statistical mean was 2.91% (Bahrain), median 2.9% (Bahrain), and mode 3.0% (Thailand). The highest human development index was in Australia (94.00) and the lowest human development index was in Chad (39.00). The ten countries with the highest human development index were Norway, Australia, Switzerland, Netherlands, Denmark, Germany, Ireland, United States, Sweden and New Zealand. The ten countries with the lowest human development index were Haiti, Senegal, Malawi, Ethiopia, Liberia, Mali, Sierra Leone, Guinea, Burundi, and Chad. Average index of human development in terms of statistical mean was 72.99 (Jamaica, Colombia, Tunisia, Dominican Republic, and Belize), median was 76.00 (Mexico, Georgia, Turkey, Jordan, Macedonia, Azerbaijan, and Ukraine), and mode was 73.00 (The Netherland, Sweden, New Zealand, and Australia). Finally, the highest global competitiveness index was 5.76 (Switzerland) and the lowest global competitiveness index was 2.84 (Guinea). Ten countries with highest global competitiveness index were Switzerland, Singapore, United States, Germany, Netherlands, Japan, Finland, Sweden, United Kingdom, and Norway. Ten countries with lowest global competitiveness index were Liberia, Madagascar, Venezuela RB, Haiti, Malawi, Burundi, Sierra Leone, Mauritania, Chad, and Guinea.

Table 2: presents the countries at various levels of economic growth related to global competitiveness index. Both were ranked into three levels: low, medium and high. According to the levels of global competitiveness, 41 countries classified as the low global competitiveness index countries, 41 countries classified as the medium global competitiveness index countries, and 41 countries classified as the high global competitiveness index countries. The same number of countries was also classified as low, medium and high economic growth countries.

From 41 countries with low global competitiveness index, 11 countries also had low economic growth, namely: Tunisia, Chad, Haiti, Lebanon, Serbia, Liberia, Guinea, Trinidad and Tobago, Burundi, Venezuela RB, and Sierra Leone. Meanwhile, 11 countries had medium economic growth, namely: Kyrgyz Republic, Zambia, Bosnia and Herzegovina, Malawi, Paraguay, Nigeria, Zimbabwe, Albania, El Salvador, Argentina, and Mongolia. Finally, 19 countries had high economic growth, namely: Mauritania, Ethiopia, Mali, Cambodia, Dominican Republic, Tanzania, Bangladesh, Senegal, Cameroon, Kenya, Pakistan, Uganda, Benin, Nicaragua, Egypt Arab Republic, Bolivia, Gabon, Ghana, and Madagascar.

From 41 countries with medium global competitiveness index, 12 countries had low economic growth, namely: Latvia, Croatia, Cyprus, Ukraine, Uruguay, South Africa, Jamaica, Ecuador, Greece, Botswana, Moldova, and Brazil. Meanwhile, 15 countries had medium economic growth, namely: Honduras, Slovak Republic, Mauritius, Montenegro, Peru, Colombia, Armenia, Bulgaria, Tajikistan, Hungary, Slovenia, Costa Rica, Georgia, Mexico, and Jordan. Another 14 countries had the highest, namely: Iran Islamic Republic, India, Rwanda, Vietnam, Panama, Philippines, Namibia, Morocco, Guatemala, Malta, Algeria, Turkey, Macedonia, and Romania.

**Table 2: Countries at Various Levels of Economic Growth and the Happiness**

| | Global Competitiveness: Low | Global Competitiveness: Medium | Global Competitiveness: High |
|---|---|---|---|
| Economic growth: High | Mauritania, Ethiopia, Mali, Cambodia, Dominican Republic, Tanzania, Bangladesh, Senegal, Cameroon, Kenya, Pakistan, Uganda, Benin, Nicaragua, Egypt Arab Republic, Bolivia, Gabon, Ghana, Madagascar (19) | Iran Islamic Republic, India, Rwanda, Vietnam, Panama, Philippines, Namibia, Morocco, Guatemala, Malta, Algeria, Turkey, Macedonia, Romania (14) | Ireland, China, Malaysia, Iceland, Sweden, Indonesia, Luxembourg (7) |
| Economic growth : Medium | Kyrgyz Republic, Zambia, Bosnia and Herzegovina, Malawi, Paraguay, Nigeria, Zimbabwe, Albania, El Salvador, Argentina, Mongolia. (11) | Honduras, Slovak Republic, Mauritius, Montenegro, Peru, Colombia, Armenia, Bulgaria, Tajikistan, Hungary, Slovenia, Costa Rica, Georgia, Mexico, Jordan (15) | Poland, Qatar, Saudi Arabia, New Zealand, Thailand, Bahrain, Italy, Korea Republic, Spain, Israel, United Arab Emirates, United States, Australia, Chile, Netherlands (15) |
| Economic growth : Low | Tunisia, Chad, Haiti, Lebanon, Serbia, Liberia, Guinea, Trinidad and Tobago, Burundi, Venezuela RB, Sierra Leone (11) | Latvia, Croatia, Cyprus, Ukraine, Uruguay, South Africa, Jamaica, Ecuador, Greece, Botswana, Moldova, Brazil (12) | Singapore, United Kingdom, Germany, Lithuania, Norway, Portugal, Belgium, France, Kazakhstan, Switzerland, Azerbaijan, Canada, Estonia, Austria, Jamaica, Denmark, Finland, Japan, Kuwait (19) |

From 41 countries with high global competitiveness index, 19 countries had low economic growth, namely: Singapore, United Kingdom, Germany, Lithuania, Norway, Portugal, Belgium, France, Kazakhstan, Switzerland, Azerbaijan, Canada, Estonia, Austria, Jamaica, Denmark, Finland, Japan, and Kuwait. Meanwhile, 15 countries had medium economic growth, namely: Poland, Qatar, Saudi Arabia, New Zealand, Thailand, Bahrain, Italy, Korea Republic, Spain, Israel, United Arab Emirates, United States, Australia, Chile, and Netherlands. Another 7 countries had high economic growth, namely: Ireland, China, Malaysia, Iceland, Sweden, Indonesia, and Luxembourg.
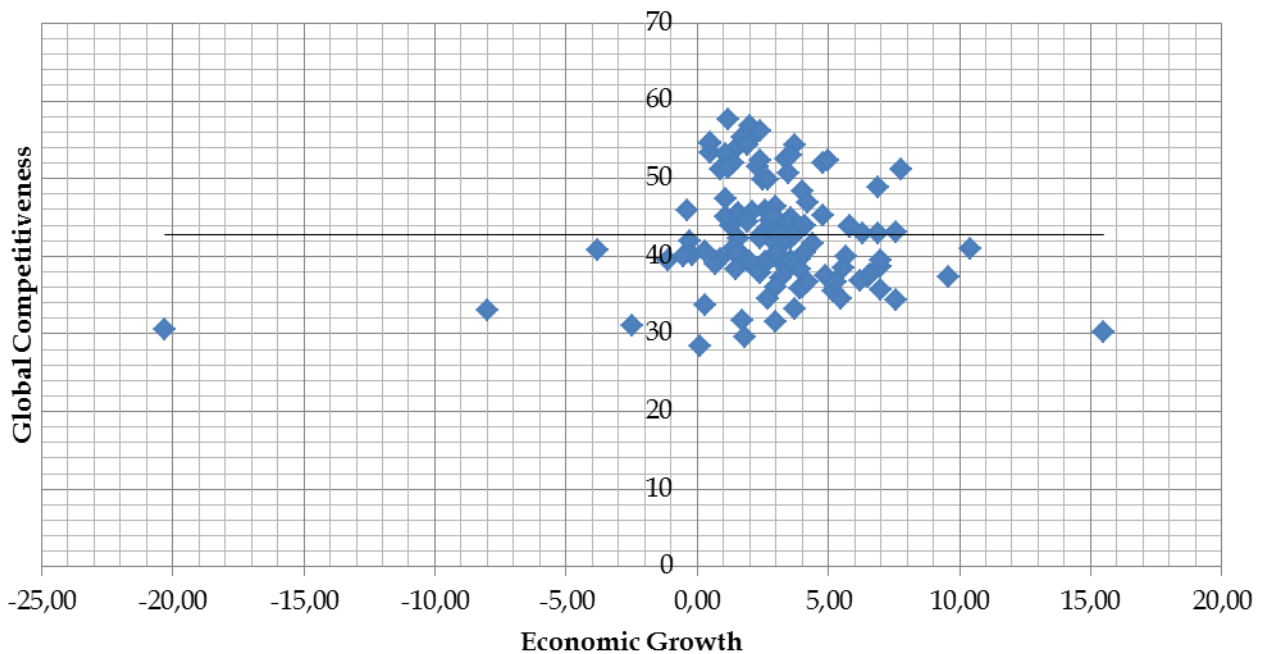
**Figure 3: Scatter Diagram Economic Growth and Global Competitiveness**

Figure 3: presents Scatter Diagram between Economic growth and Global competitiveness that shows a positive trend. It means that economic growth had positive correlation on global competitiveness. The higher the growth of economy of a country, the more competitive globally is the country. Regression coefficient resulted from regression analysis was positive, 0.0006. But, the regression coefficient was statistically not significant as t-calculated (0.0036) was less than t-table (1.98) n=123, at 95% significant level.

Table 3: provides list of country with levels of economic growth and human development. There were 41 countries with low economic growth, 41 countries with medium economic growth and 41 countries with high economic growth. Human development levels were also classified as low, medium and high human development levels with same number of countries, respectively: 41, 41, and 41 countries.

From 41 countries classified as low economic growth, 7 countries also had low development index, namely: Chad, Haiti, South Africa, Liberia, Guinea, Burundi and Sierra Leone. Meanwhile, 16 countries had medium human development index, namely: Tunisia, Croatia, Lebanon, Ukraine, Uruguay, Kazakhstan, Azerbaijan, Jamaica, Serbia, Ecuador, Botswana, Kuwait, Moldova, Trinidad and Tobago, Brazil, and Venezuela. Another 18 countries had high human development index, namely: Singapore, Latvia, United Kingdom, Germany, Cyprus,

Lithuania, Norway, Portugal, Belgium, France, Switzerland, Canada, Estonia, Austria, Denmark, Finland, Japan, and Greece.

**Table 3: Countries at Various Levels of Economic Growth and Human Development**

| | Human Development: Low | Human Development: Medium | Human Development: High |
|---|---|---|---|
| Economic growth: High | Mauritania, Ethiopia, India, Mali, Cambodia, Tanzania, Rwanda, Bangladesh, Senegal, Vietnam, Cameroon, Philippines, Namibia, Kenya, Pakistan, Uganda, Benin, Nicaragua, Indonesia, Morocco, Egypt Arab Republic, Gabon Guatemala, Bolivia, Ghana, Madagascar (26) | Iran Islamic Republic, Dominican Republic, China, Panama, Malaysia, Algeria, Turkey, Macedonia, Romania (9) | Ireland, Luxembourg, Czech Republic, Malta, Iceland, Sweden (6) |
| Economic growth : Medium | Honduras, Zambia, Malawi, Paraguay, Tajikistan, Nigeria, Zimbabwe, El Salvador (8) | Kyrgyz Republic, Mauritius, Montenegro, Peru, Bosnia and Herzegovina, Colombia, Armenia, Bulgaria, Thailand, Bahrain, Costa Rica, Georgia, Albania, Mexico, Jordan, Mongolia (16) | Poland, Qatar, Slovak Republic, Saudi Arabia, New Zealand, Hungary, Slovenia, Italy, Korea Republic, Spain, Israel, Argentina, United Arab Emirates, United States, Australia, Chile, Netherlands (17) |
| Economic growth : Low | Chad, Haiti, South Africa, Liberia, Guinea, Burundi, Sierra Leone (7) | Tunisia, Croatia, Lebanon Ukraine, Uruguay, Kazakhstan, Azerbaijan, Jamaica, Serbia, Ecuador, Botswana, Kuwait, Moldova, Trinidad and Tobago, Brazil, Venezuela RB (16) | Singapore, Latvia, United Kingdom, Germany, Cyprus, Lithuania, Norway, Portugal, Belgium, France, Switzerland, Canada, Estonia, Austria, Denmark, Finland, Japan, Greece (18 ) |

From 41 countries classified as medium economic growth, 8 countries had low human development index, namely: Honduras, Zambia, Tajikistan, Paraguay, Malawi, Zimbabwe, Nigeria, and El-Salvador. Meanwhile, 16 countries had medium human development index, namely: Kyrgyz Republic, Mauritius, Montenegro, Peru, Bosnia and Herzegovina, Colombia, Armenia, Bulgaria, Thailand, Bahrain, Costa Rica, Georgia, Albania, Mexico, Jordan, and Mongolia. Another 17 countries had high human development index, such as: Poland, Qatar, Slovak Republic, Saudi Arabia, New Zealand, Hungary, Slovenia, Italy, Korea Republic, Spain, Israel, Argentina, United Arab Emirates, United States, Australia, Chile, and Netherlands.

From 41 countries classified as high economic growth, 26 countries had low human development index, such as: Mauritania, Ethiopia, Mali, India, Tanzania, Cambodia, Rwanda, Bangladesh,

Senegal, Vietnam, Cameroon,   Philippines, Namibia, Kenya, Pakistan, Uganda, Benin, Nicaragua, Indonesia, Morocco, Egypt Arab Republic, Guatemala, Bolivia, Ghana, Gabon, and Madagascar. Meanwhile, 19 countries had medium human development index, namely: Iran Islamic Republic, Dominican Republic, China, Panama, Malaysia, Algeria, Turkey, Romania, and Macedonia. Another 6 countries had high human development index: Ireland, Luxembourg, Czech Republic, Malta, Iceland, and Sweden.
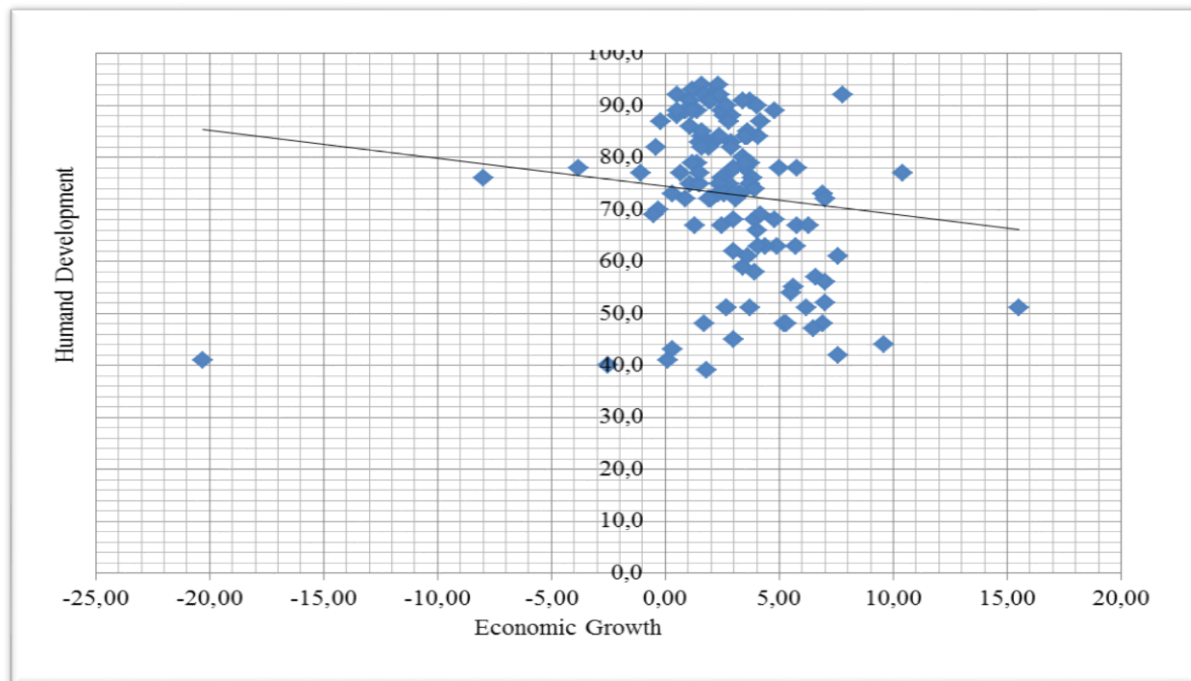


**Figure 4: Scatter Diagram Economic Growth and Human Development**

Figure 4: presents Scatter Diagram between Economic growth and Human Development that shows a negative trend. It means that economic growth had negative correlation on the human development. The higher the growth of economy of a country, the smaller the index of human development was. Regression analysis resulted a negative regression coefficient, -0.5359. But, the regression coefficient was statistically not significant as t-calculated (-1.38) was less than t-table (1.98) n=123, at 95% significant level, and P-value (0.17) was more than 0.05.

**Table 4: Countries at Various Levels of Human Development and Global Competitiveness**

| | Human Development: Low | Human Development: Medium | Human Development: High |
|---|---|---|---|
| **Global Competitiveness: High** | Indonesia (1) | Malaysia, China, Thailand, Kuwait, Bahrain, Azerbaijan, Kazakhstan (7) | Switzerland, Singapore, United States, Germany, Netherlands, Japan, Finland, Sweden, United Kingdom, Norway, Denmark, Canada, Qatar, New Zealand, United Arab Emirates,, Luxembourg, Belgium, Australia, France, Austria, Ireland, Saudi Arabia, Korea Republic, Israel, Iceland, Estonia, Czech Republic, Spain, Chile, Lithuania, Portugal, Poland, Italy (33) |
| **Global Competitiveness: Medium** | South Africa, Philippines, India, Vietnam, Rwanda, Morocco, Guatemala, Tajikistan, Namibia, Honduras (10) | Mauritius, Panama, Turkey, Costa Rica, Bulgaria, Romania, Mexico, Macedonia, Colombia, Jordan, Georgia, Peru, Montenegro, Botswana, Uruguay, Iran Islamic Republic, Brazil, Croatia, Ecuador, Ukraine, Armenia, Moldova, Jamaica, Algeria(24) | Latvia, Malta, Slovenia, Hungary, Cyprus, Slovak Republic, Greece (7) |
| **Global Competitiveness: Low** | Cambodia, El Salvador, Zambia, Kenya, Gabon, Bangladesh, Nicaragua, Ethiopia, Senegal, Cameroon, Uganda, Egypt Arab Republic, Bolivia, Paraguay, Ghana, Tanzania, Benin, Nigeria, Zimbabwe, Pakistan, Mali, Liberia, Madagascar, Haiti, Malawi, Burundi, Sierra Leone, Mauritania, Chad, Guinea (30) | Trinidad and Tobago, Albania, Tunisia, Serbia, Dominican Republic, Lebanon, Kyrgyz Republic, Mongolia, Bosnia and Herzegovina, Venezuela RB (10) | Argentina (1) |

Table 4: provides list of country with levels of human development and global competitiveness index. There were 41 countries with low human development index, 41 countries with medium human development index and 41 countries with high human development index. The global competitiveness levels were also classified as low, medium and high global competitiveness levels with same number of countries, respectively: 41, 41, and 41 countries.

From 42 countries classified as low human development index, 30 countries had low global competitiveness index, namely: Cambodia, El Salvador, Zambia, Kenya, Gabon, Bangladesh, Nicaragua, Ethiopia, Senegal, Cameroon, Uganda, Egypt Arab Republic, Bolivia, Paraguay, Ghana, Tanzania, Benin, Nigeria, Zimbabwe, Pakistan, Mali, Liberia, Madagascar, Haiti, Malawi, Burundi, Sierra Leone, Mauritania, Chad, and Guinea. Meanwhile, 10 countries had medium global competitiveness index, namely: Trinidad and Tobago, Albania, Tunisia, Serbia, Dominican Republic, Lebanon, Kyrgyz Republic, Mongolia, Bosnia and Herzegovina, and Venezuela RB. Only one country had high global competitiveness index: Argentina.

From 41 countries classified as medium human development, 10 countries had low global competitiveness index, namely: South Africa, Philippines, India, Vietnam, Rwanda, Morocco, Guatemala, Tajikistan, Namibia, and Honduras. Meanwhile, 24 countries had medium global competitiveness index, namely: Mauritius, Panama, Turkey, Costa Rica, Bulgaria, Romania, Mexico, Macedonia, Colombia, Jordan, Georgia, Peru, Montenegro, Botswana, Uruguay, Iran Islamic Republic, Brazil, Croatia, Ecuador, Ukraine, Armenia, Moldova, Jamaica, and Algeria. Another 7 countries had high global competitiveness index, such as: Latvia, Malta, Slovenia, Hungary, Cyprus, Slovak Republic, and Greece.

From 41 countries classified as high human development, only one country, Indonesia, had low global competitiveness index. Meanwhile, 7 countries had medium global competitiveness index, namely: Malaysia, China, Thailand, Kuwait, Bahrain, Azerbaijan, and Kazakhstan. Finally, another 33 countries had high global competitiveness index, namely: Switzerland, Singapore, United States, Germany, Netherlands, Japan, Finland, Sweden, United Kingdom, Norway, Denmark, Canada, Qatar, New Zealand, United Arab Emirates, Luxembourg, Belgium, Australia, France, Austria, Ireland, Saudi Arabia, Korea Republic, Israel, Iceland, Estonia, Czech Republic, Spain, Chile, Lithuania, Portugal, Poland, and Italy.
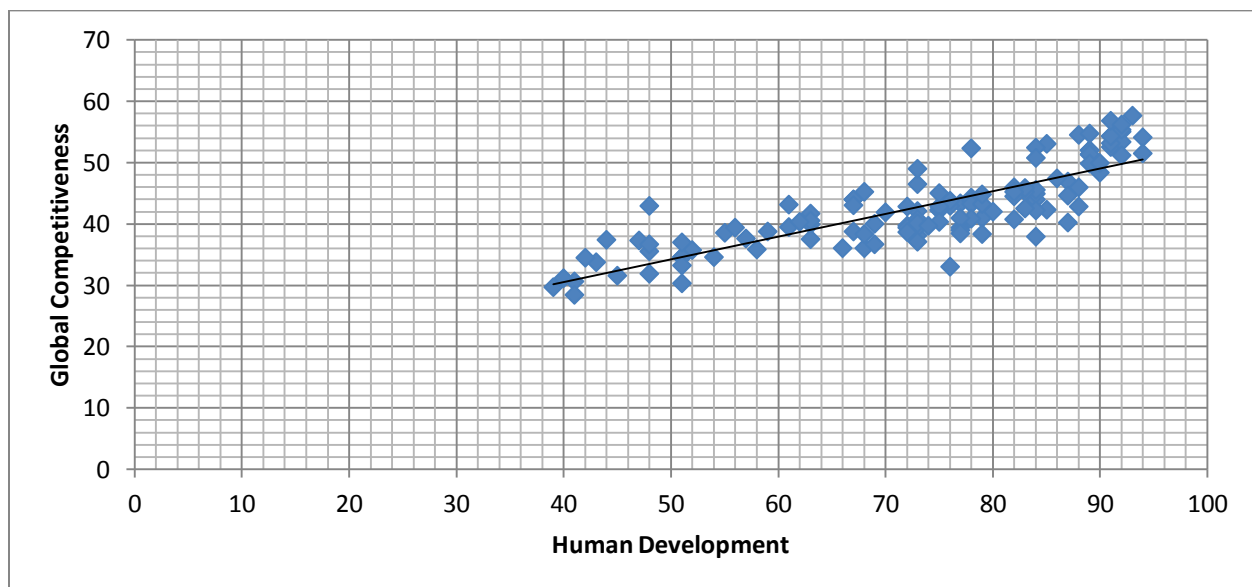


**Figure 5: Scatter Diagram Human Development and Global Competitiveness**

Figure 5: presents Scatter Diagram between Human Development and the global competitiveness that shows a positive trend. It means that human development had positive correlation on global competitiveness. The higher the human development index of a country, the higher the index of global competitiveness was. Regression coefficient resulted by regression analysis was positive,

0.3706. The regression coefficient was statistically significant as t-calculated (16.11) was higher than t-table (1.98) n=123, at 95% significant level, and P-value (0.00) were far less than 0.05.

**Table 5: Correlation Coefficient and Path Coefficient**

| Regression Statistics: EG-GC | | Regression Statistics: EG-HD | | Regression Statistics: HD-GC | |
|---|---|---|---|---|---|
| Multiple R | 0,0003 | Multiple R | -0,1244 | Multiple R | 0,8259 |
| R Square | 0,0000 | R Square | 0,0155 | R Square | 0,6821 |
| Adjusted R Square | 0,0083 | Adjusted R Square | 0,0073 | Adjusted R Square | 0,6794 |
| Standard Error | 6,7085 | Standard Error | 14,8348 | Standard Error | 3,7827 |
| Observations | 123 | Observations | 123 | Observations | 123 |
| $P_{31}= 0.1012$ | | $P_{21}= -0.1244$ | | $P_{23} = 0.8134$ | |

Table 5: presents the results of regression analysis, mainly for correlation analysis among variables being studied. The coefficient correlation between economic growth and the global competitiveness was positive but very weak, 0.0003. The coefficient correlation between economic growth and human development was also very weak and negative, -0.1244. Meanwhile, the coefficient correlation between human development and global competitiveness was very strong and positive, 0.8259.

Solving the path equation proposed in Method of Analysis above, path coefficients have been calculated, the results: path coefficient in Path-1, $P_{31,}$ was 0.10 meaning there was positive direct effect of economic growth on global competitiveness. The increase of 1 per cent economic growth would increase 0.10 per cent global competitiveness index. Path coefficient in Path-2, $P_{21,}$ was negative, -0.1244 meaning that there was negative direct impact of economic growth on human development. The increase of 1 per cent economic growth will decrease 0.12 per cent human development index. Finally, path coefficient in Path-3, $P_{32}$, was 0.8134 meaning that there was a positive direct impact of human development on global competitiveness. The increase of 1 per cent human development index will increase 0.81 per cent the index of global competitiveness.

Figure 6: provides path model for analysing direct and indirect impact of economic growth on global competitiveness. In Path-1, direct impact of economic growth on global competitiveness was positive and significant, with $P_{31}= 0.10$. The higher the increase of the growth of economy, the higher the global competitiveness index would be. One per cent increase in economic growth would increase 0.10 per cent in global competitiveness index. In Path-2, direct impact of economic growth on human development was negative and significant, with $P_{21}= -0.12$. An increase of the growth of economy would decrease the index of human development. One per cent increase in economic growth would decrease 0.12 per cent in human development index. In

Path-3, direct impact of human development on global competitiveness was negative and significant, with $P_{32}= 0.81$. The higher the increase of human development, the higher the index of global competitiveness would be. One per cent increase in human development index would increase 0.81 per cent in global competitiveness index. Finally, indirect impact analysis shows that trough Path-2 and Path-3 the impact of economic growth on global competitiveness was negative and significant, as the path coefficient of indirect impact was $P_{32}$ x $P_{21}= (0.81)$ x $-(0.12)$ = - 0.10 >0.05. The higher the increase of the growth of economy, the lower the index of global competitiveness would be. One per cent increase in economic growth would decrease 0.10 per cent in global competitiveness index.
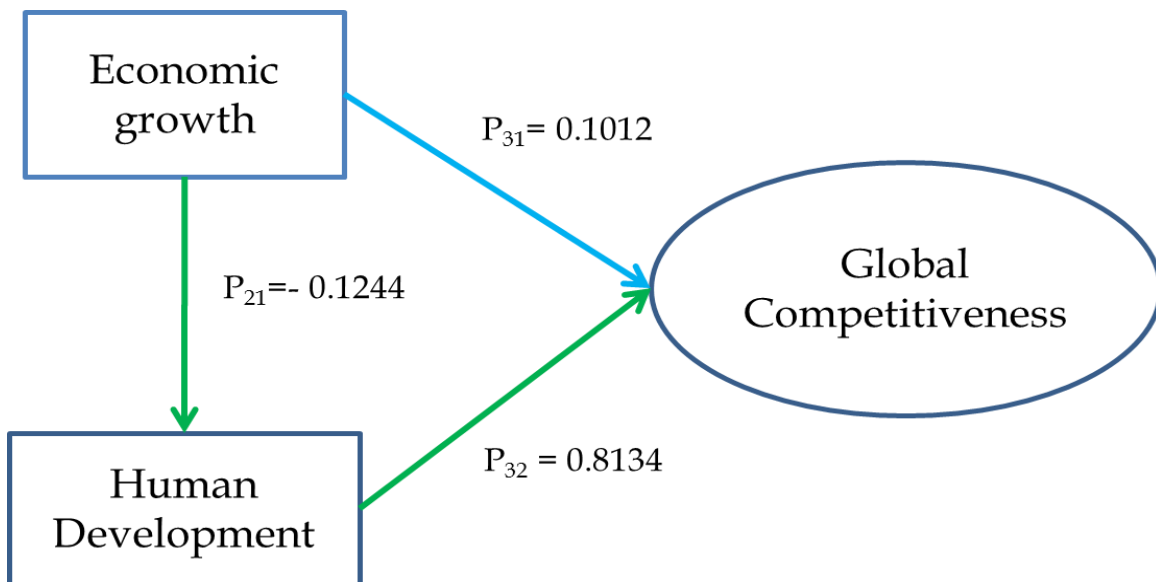


**Figure 6: Path Analysis and Path Coefficients**

**CONCLUSION**

From results and discussion, it could be concluded that, firstly in Path-1, economic growth measured by GDP growth had a positive and significant direct impact on global competitiveness, measured by global competitiveness index. Secondly, in Path-2, economic growth had a negative and significant direct impact on human development, measured by human development index. Thirdly, in Path-3, human development had positive and significant direct impact on global competitiveness. Finally, through Path-2 and Path-3, economic growth had negative and significant indirect impact on global competitiveness. The implication from this finding was that economic growth alone was no longer important variable in development, especially when development was focused on human and global competitiveness. Development programs that give special attention on human development should be then prioritized.

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