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HUMAN DEVELOPMENT AND HAPPINESS: A CROSS-NATIONS PATH ANALYSIS

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ABSTRACT

This paper aimed to analysis correlation between human development, global competitiveness and happiness as well as the impact of human development, both direct and indirect, on happiness, with global competitiveness as moderator variable. Cross-section data on human development, global competitiveness and happiness indices were collected from 123 countries and employed in a path analysis model. The results show that the correlation between human development and happiness was positive and very strong. The countries that had high happiness index were the countries with high human development index. The correlation between human development and global competitiveness was positive and very strong. The correlation between global competitiveness and happiness was also positive and strong. The direct impact of human development on happiness was positive and significant. The indirect impact of human development on happiness, again, was positive and significant. It is suggested that human development sustainably be promoted in order to make nations competitive globally and then make the people happy.

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INTRODUCTION

Economic growth is no longer considered as single important factor in measuring development progress. After human development had become a focus of development, now happiness is an important indicator of social progress. According to Hornby, (1985), happiness is a mental or emotional state of well-being defined by positive or pleasant emotions ranging from contentment to intense joy. The Merriam Webster online dictionary defines happiness as a state of well-being or contentment, a pleasurable or satisfying experience. Happy mental states may also reflect judgments by a person about their overall well-being (Anand, 2016). Happiness is a fuzzy concept and can mean many different things to many people. Related concepts are well-being, quality of life and flourishing. At least one author defines happiness as contentment (Graham, 2014). Some commentators focus on the difference between the hedonistic tradition of seeking pleasant and avoiding unpleasant experiences, and the eudaimonic tradition of living life in a full and deeply satisfying way (Deci, and Ryan, 2006). Algoe, and Haidt, (2009) say that happiness may be the label for a family of related emotional states, such as joy, amusement,

satisfaction, gratification, euphoria, and triumph. United Nations Development Programme updated the World Happiness Report 2016 which is a landmark survey of the state of global happiness (Helliwell *et al*, 2016). The report was released on March 20th on UN Happiness Day. The first World Happiness Report was published in April 2012, in support of the High Level Meeting at the United Nations on happiness and well-being, chaired by the Prime Minister of Bhutan. The report outlined the state of world happiness, causes of happiness and misery, and policy implications highlighted by case studies. In September 2013 the second World Happiness Report offered the first annual follow-up and reports are now issued every year. It has been argued that happiness measures could be used not as a replacement for more traditional measures, but as a supplement (Weiner, 2007). Several scales have been used to measure happiness, such as: the SHS (Subjective Happiness Scale) is a four-item scale, measuring global subjective happiness (Lyubomirsky and Lepper, 1999). The PANAS (Positive and Negative Affect Schedule) is used to detect the relation between personality traits and positive or negative affects at this moment, today, the past few days, the past week, the past few weeks, the past year, and generally (on average). The SWLS (Satisfaction with Life Scale) is a global cognitive assessment of life satisfaction developed by Diener, *et al*. (1985). There have also been some studies that happiness related religion (among others: Routledge, 2012; Baetz and Toews, 2009; Ellison and George,

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1994). There are a number of mechanisms through which religion may make a person happier, including social contact and support that result from religious pursuits, the mental activity that comes with optimism and volunteering, learned coping strategies that enhance one's ability to deal with stress, and psychological factors such as reason for being. It may also be that religious people engage in behaviors related to good health, such as less substance abuse, since the use of psychotropic substances is sometimes considered abuse (Baetzand Toews, 2009; Ellison and George, 1994; Strawbridge *et al.*, 2001; Burris, 1999). The *Handbook of Religion and Health* describes a survey that examined happiness in Americans who have given up religion, in which it was found that there was little relationship between religious disaffiliation and unhappiness (Koenig *et al.*, 2001). A survey also cited in this handbook, indicates that people with no religious affiliation appear to be at greater risk for depressive symptoms than those affiliated with a religion. A review of studies by 147 independent investigators found, "the correlation between religiousness and depressive symptoms was -0.096, indicating that greater religiousness is mildly associated with fewer symptoms (Smith *et al.*, 2003).

Another factor that seems related to happiness is human development, which is a concept within a field of international development. The human development approach, developed by the economist Mahbub Ul-Haq (2003), is anchored in 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 development was first laid out by Zaki Badie, 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 people enjoy; to lead a 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, 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

(2015a). 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 (United Nation Development Program, 2015b).

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, (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, and Lodge, 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 *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 (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. 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 and 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 *et al.*, 2006; Stajano, 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 (2015). Since 2004, the *Global Competitiveness Report* ranks countries based on the Global Competitiveness Index (GCR, 2014-2015), developed by Xavier and Artadi, (2004). The *Global Competitiveness Index* integrates the macroeconomic and the micro aspects of competitiveness into a single index. This paper is aimed to analyse firstly the correlation between human development, global competitiveness and happiness. Secondly, the impacts, direct and indirect, of human development on happiness, were using path analysis model.

Methods of Analysis

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

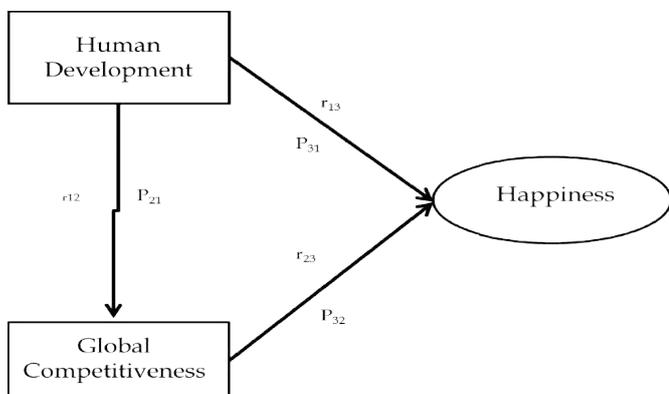


Figure 1. Path Model to Analysis the Impact of Human Development on Happiness

Four hypotheses to be tested were: firstly, human development had direct impact on the happiness; secondly, human development had direct impact on global competitiveness and thirdly, global competitiveness had direct impact on happiness. Finally, human development had indirect impact on the happiness, through global competitiveness. Path coefficients were calculated by solving these path equations; given that the coefficients of correlation have been calculated. P_{31} was direct impact of human development on happiness, P_{21} was direct impact of human development on global competitiveness; P_{32} was direct impact of global competitiveness on happiness, and indirectly through P_{21} and P_{32} were the impacts of human development on happiness.

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>

Happiness was measured by happiness index, human development was measured by the human development index and competitiveness was measured by global competitiveness index. Data on the happiness index from 156 countries was downloaded from UNDP (2016) World Happiness Report, Chapter 2: The Distribution of World Happiness written by John F. Helliwell, Haifang Huang and Shun Huang. Data are available at http://worldhappiness.report/wp-content/uploads/sites/2/2016/03/HR-V1Ch2_web.pdf. 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>. Data on global competitiveness index from 138 countries were downloaded from <http://reports.weforum.org/global-competitiveness-index/>. 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 DISCUSSIONS

Data Descriptions

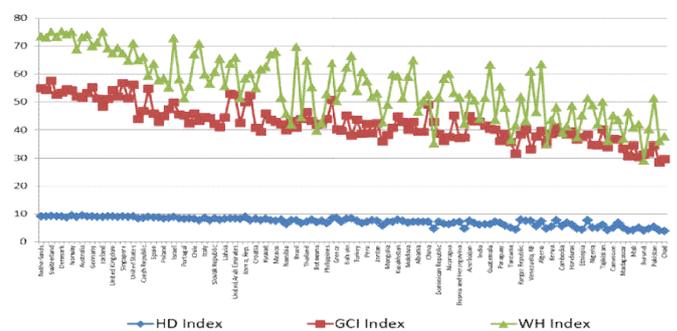


Figure 2. Human Development, Global Competitiveness and Happiness

Figure 2: depicts the dynamic of human development index, global competitiveness index and happiness index from 123 countries being studied. The lowest index of happiness was in Burundi (29.05) and the highest index of happiness was in Denmark. Ten countries with highest index of happiness were: Denmark, Switzerland, Iceland, Norway, Finland, Canada, Netherlands, New Zealand, Australia and Sweden. Ten countries with lowest index of happiness were: Cambodia, Chad, Uganda, Madagascar, Tanzania, Liberia, Guinea, Rwanda, Benin, and Burundi. Average index of happiness in terms of statistical mean was 55.4 (Paraguay), median was 55.23 (Cyprus, Latvia, Croatia, Romania, Jamaica, and Paraguay), and mode was 58.35 (Poland, Ethiopia, Lithuania, Korea Republic, Peru, Moldova, and Bolivia). The highest human development index was in Australia (94.00) and the lowest human development index was in Chad (39.00). Ten countries with highest index of human development were: Norway, Australia, Switzerland, Netherlands, Denmark, Germany, Ireland, United States, Sweden, and New Zealand. Ten countries with 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 index of global competitiveness were: Switzerland, Singapore, United States, Germany, Netherlands, Japan, Finland, Sweden, United Kingdom, and Norway. Ten countries with lowest index of global competitiveness were: Liberia, Madagascar, Venezuela RB, Haiti, Malawi, Burundi, Sierra Leone, Mauritania, Chad, and Guinea. The average index of global competitiveness in term of statistical mean was 4.27 (Georgia, Jordan, Hungary, Macedonia, Colombia, Rwanda, Mexico), median was 4.22 (Slovak Republic, Georgia, Cyprus, Peru, Jordan) and mode was 4.39 (Turkey, Panama, Philippines, South Africa, Malta).

Linearity Test

Figure 3 presents Scatter Diagram between Human Development and Happiness that shows a positive trend. It means that human development had positive correlation on happiness. The higher the human development index of a country will be the higher the index of happiness of the country. Regression coefficient resulted by regression analysis was positive, 0.62. The regression coefficient was statistically significant as t-calculated (15.55) was higher than t-table (1.98) n=123, at 95% significant level, and P-value (0.00) were far less than 0.05.

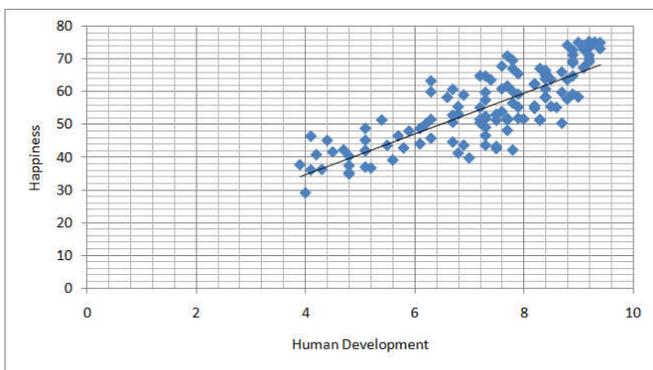


Figure 3. Scatter Diagram between Human Development and Happiness

Figure 4 presents Scatter Diagram between Human Development and the Global competitiveness that shows a positive trend.

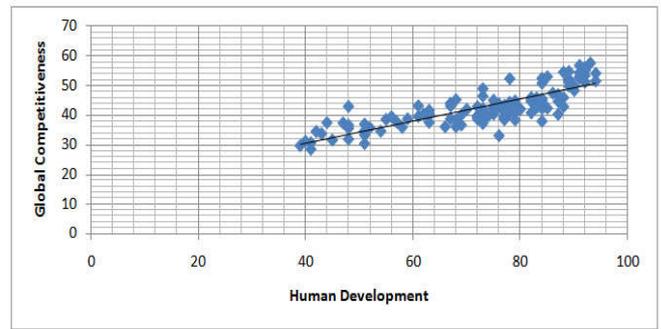


Figure 4. Scatter Diagram between Human Development and Global Competitiveness

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, and it 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.

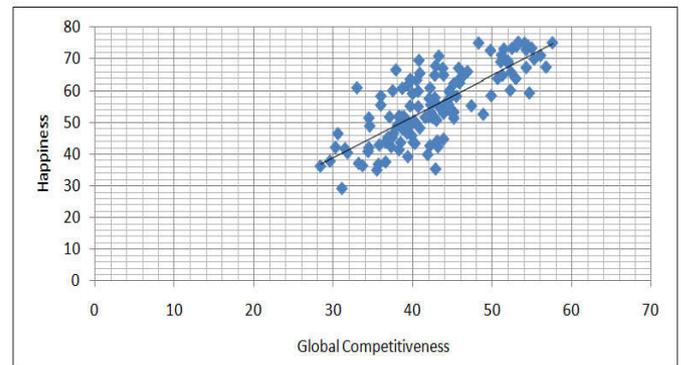


Figure 5. Scatter Diagram between Global Competitiveness and Happiness

Figure 5 presents Scatter Diagram between the Global competitiveness and Happiness that shows a positive trend. It means that global competitiveness had positive correlation on happiness. The higher the global competitiveness index of a country, the higher the index happiness was. Regression coefficient resulted by regression analysis was positive, 1.29. The regression coefficient was statistically significant as t-calculated (13.00) was higher than t-table (1.98) n=123, at 95%95% significant level, and P-value (0.00) were far less than 0.05.

Correlation and Path Coefficients

Table 2: presents the results of regression analysis for correlation analysis among variables being studied.

Table 2. Correlation and Path Coefficients

<i>Regression Statistics : HD-H</i>		<i>Regression Statistics : HD-GC</i>		<i>Regression Statistics: GC-H</i>	
Multiple R	0.82	Multiple R	0.83	Multiple R	0.76
R Square	0.67	R Square	0.68	R Square	0.58
Adjusted R Square	0.66	Adjusted R Square	0.68	Adjusted R Square	0.58
Standard Error	6.56	Standard Error	3.78	Standard Error	7.34
Observations	123	Observations	123	Observations	123
P ₃₁ =0.61		P ₂₁ =0.83		P ₂₃ =0.26	

The coefficient correlation between human development and the happiness was positive and very strong, $r_{13} = 0.83$. The coefficient correlation between human development and global competitiveness was also positive and very strong, $r_{12} = 0.83$. Meanwhile, the coefficient correlation between global competitiveness and happiness was positive and strong, $r_{23} = 0.76$. 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 0.61 meaning there was positive direct effect of human development on happiness. The increase of 1 per cent human development index would increase 0.61 per cent happiness index. Path coefficient in Path-2, P_{21} , was 0.83 meaning that there was positive and significant direct impact of human development on global competitiveness. The increase of 1 per cent human development index will increase 0.83 per cent global competitiveness index. Finally, path coefficient in Path-3, P_{32} , was 0.26 meaning that there was a positive direct impact of global competitiveness on happiness. The increase of 1 per cent human development index will increase 0.26 per cent the index of global competitiveness.

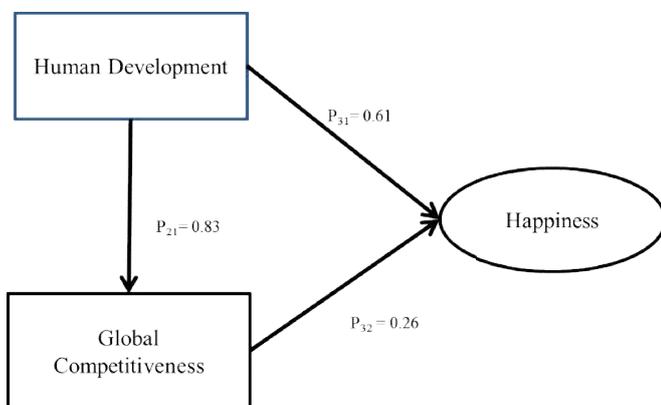


Figure 6. Path Analysis and Path Coefficients

Figure 6: provides path model for analysing direct and indirect impact of human development on happiness. In Path-1, direct impact of human development on happiness was positive and significant, with $P_{31} = 0.61$. The higher the increase of the index of human development will increase the index of happiness. One per cent increase in economic growth would increase 0.61 per cent in happiness index. In Path-2, direct impact of human development on global competitiveness was positive and significant, with $P_{21} = 0.83$.

An increase of the index of human development would increase the index of global competitiveness. One per cent increase in human development would increase 0.83 per cent in global competitiveness index. In Path-3, direct impact of global competitiveness on happiness was also positive and significant, with $P_{32} = 0.26$. The higher the increase of global competitiveness, the higher the index of happiness would be. One per cent increase in global competitiveness index would increase 0.26 per cent in happiness index. Finally, indirect impact analysis shows that through Path-2 and Path-3 the impact of human development on happiness was positive and significant, as the path coefficient of indirect impact was $P_{32} \times P_{21} = (0.83) \times (0.26) = 0.22 > 0.05$. The higher the increase of the human development, the higher the index of happiness would be. One per cent increase in economic growth would increase 0.22 per cent in happiness index.

Conclusions

From results and discussion, it could be concluded that, firstly in Path-1, human development measured by human development index had a positive and significant direct impact on happiness, measured by happiness index. Secondly, in Path-2, human development had a positive and significant direct impact on global competitiveness, measured by global competitiveness index. Thirdly, in Path-3, global competitiveness had positive and significant direct impact on happiness. Finally, through Path-2 and Path-3, human development had positive and significant indirect impact on happiness. The implication from this finding was that human development and global competitiveness were important variables in determining happiness. Implementing development programs based on the concept of human development would keep national competitiveness and then make the people happy.

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