Abstract

The economists develop the Human Development Index that quantifies health, education and wealth since the Gross Domestic Product represents only the economic growth of the country. This paper attempted to analyze the relationship exists between the GDP per capita and HDI in the Philippines using the Pearson-r Correlation Coefficient and Linear Regression was utilized to understand at what degree and extent the HDI has influenced the GDP. The results showed that there was a very high positive correlation between the GDP and HDI in the Philippines at 1% level of significance. The HDI has a significant effect on the country’s GDP.

Keywords: Gross Domestic Product (GDP), Human Development Index (HDI), Correlation, Regression

1.0 Introduction

The economic progress of one’s country can be measured in many ways, however the most widely accepted measure is the Gross Domestic Product (GDP). GDP is the total value of goods and services generated by the people of a nation during a period of time excluding the value of income earned in foreign countries. From the definition itself, GDP focuses only on the economic quantity. It fails to include to reckon the economic quality of a certain country. In relation to this notion, there are alternative economic indicators that are established. One of which is the Human Development Index (HDI). 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 (Human Development Reports, United Nations Development Program).

A very few studies have been conducted pertaining GDP and HDI. It was found out that there was a positively weak correlation between economic growth and HDI for ASIAN 5 (five countries of South Asia) (Shoma and Sarika Tondon Swaha , 2010, as cited in...
Gorica and Gumini, 2013). The GDP in India had a good growth but the HDI was very low (as cited in Akbar, 2011).

For all the above reasons, it was necessary to analyze the relationship between the GDP and HDI of the Philippines. The main objectives of this study are to determine if there is a significant association between the GDP and HDI of the Philippines and to construct the prediction model to understand at what degree and extent the HDI has influenced the GDP.

2.0 Theoretical Framework

The model shows that the Economic Growth as represented by the Gross Domestic Product of one’s country is dependent on the Human Development. This implies that there is a high economic growth if the human development is also high and there is a low economic growth if the human development is also low.

3.0 Methodology

The data for GDP were retrieved from Philippine Statistics Authority and data for HDI were retrieved from United Nations Development Program during 2008-2013. In this study, Pearson-r correlation was used to measure the relationship between HDI and GDP and the significance of the correlation coefficient was tested by means of t-statistic. Moreover, simple linear regression was employed to establish the prediction model for the identified variables. A 1% level of significance was used for the purpose of this study.

4.0 Results and Discussions

The Pearson-r correlation coefficient $\rho=0.984$ revealed that there was a very high positive correlation between GDP and HDI in the Philippines. The t-statistic was used to test the validity and
reliability of the correlation coefficient. Since the P-value (p=0.002) is less than $\alpha = 0.01$, this shows that the correlation coefficient is significant at the confidence level of 99%. This further implies that the GDP will tend to statistically increase as the HDI increases and the GDP will tend to statistically decrease as the HDI decreases. However, the trend of HDI growth in Albania has been decreasing while trend in GDP growth has been rising, as cited in Gorica and Gumini (2013). Thus, the findings of this study contradict to the above statement.

The coefficient of determination R square indicates that approximately 96.9% variations in the GDP are explained by the HDI in Philippines during 2008-2013. Thus, the GDP largely depends on the HDI. As reflected in Table 2, the prediction model was found to be significant at 1% level of significance. This means that the model fits the data and considered as a good model. On the other hand, only 87.7% of GDP in Malaysia was explained by HDI, as mentioned in Nur Athirah Binti Mohamad Poshaniza and Doris Padmini Selvaratnam, 2015. Thus, the HDI in the Philippines has more influence in the GDP than the HDI.

Table 1. Hypothesis testing on the significance of Pearson-r correlation coefficient for the Philippines’ GDP and HDI (2008-2013).

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Pearson – r Correlation Coefficient</th>
<th>Interpretation</th>
<th>P – value (t – statistic)</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_0$: There is no significant relationship between the country’s GDP and HDI.</td>
<td>0.984**</td>
<td>very high positive correlation</td>
<td>0.002</td>
<td>Reject Ho</td>
</tr>
<tr>
<td>$H_a$: There is a significant relationship between the country’s GDP and HDI.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Hypothesis testing on the significance of the prediction model for the Philippines’ GDP (2008-2013).

<table>
<thead>
<tr>
<th></th>
<th>P – value (ANOVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$R^2$</td>
<td>0.969</td>
</tr>
<tr>
<td></td>
<td>0.002</td>
</tr>
</tbody>
</table>
Table 3. Hypothesis testing on the significance of coefficients.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients (B)</th>
<th>P – value (t – statistic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-47914633.32</td>
<td>0.003</td>
</tr>
<tr>
<td>HDI</td>
<td>77038472.48</td>
<td>0.002</td>
</tr>
</tbody>
</table>

in Malaysia.

Table 3 portrays that the coefficient of C (constant) shows that keeping the HDI constant, when the HDI is zero, on the average the GDP is approximately -47914633.32. This is statistically significant at the 1% level because the p-value of the t-statistic is less than 1%. This denotes that if the government will not take into considerations the human development indicators, then the average GDP is at -47914633.32 per capita because the natural and existing factors bring the level of GDP to this level which is impractical. On the contrary, an increase in HDI by one unit leads to an increase in the GDP by approximately 77038472.48. This signifies that if the government make the greatest strides in improving human development that covers wealth, health and education of its constituents which can be summed up to one unit of HDI, then the economic market value will tend to rise by 77038472.48.

5.0 Conclusion

Results showed that the GDP and HDI are linearly correlated. This entails that an increase in the social welfare of the people implies an increase in economic market values and a decrease in the social welfare of the people implies a decrease in economic market values. Moreover, improvement of the HDI should be given importance since it has a significant effect on the GDP. The economic growth of one’s country cannot be preserved unless the improvements in the human development come first. Thus, the policy makers might not simply focus on maximizing the country’s market value, but on increasing its welfare to achieve a sustainable and desirable future. Critical role on the development of the factors affecting the HDI should be considered to obtain a significant increase on GDP in the Philippines.
6.0 References Cited


