The Effect of Human Capital on Economic Growth in Islamic Economic Perspective: Evidence from Bandung Regency

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ABSTRACT
The purpose of this study was to analyze the effect of human capital on economic growth in Bandung Regency. This research uses a quantitative approach with multiple linear regression analysis. The data used are secondary data from BPS for the period 2010-2019. Human capital is represented by education by measuring the average length of schooling and health by measuring life expectancy, while economic growth uses per capita GRDP. The results of the analysis with a significance level of 5% indicate that education and health have a positive and significant influence on economic growth in Bandung Regency. It shows the valuable role of human capital as one of the central sources to encourage regional economic development. Economic growth, that main focus is on human development, is following Islamic economic growth principles. So that economic development must be oriented to improving human dignity as a whole.

Keyword: Human Capital

RESEARCH BACKGROUND
Economic growth is one of the most valuable indicators in analyzing economic development in any country or economic system (Dornbusch, Fischer, & Startz, 2011; Todaro & Smith, 2011). In as much as economic growth is assumed to bring expansive opportunities to improve people's welfare (Jorgenson, 2018; Naqvi, 2003). In line with that, economic growth will also show additional community income because of economic activities undertaken (Noor, 2011; Samuelson & Nordhaus, 2010). Therefore, in the context of development, a study of economic growth is most necessary.

The existence of economic growth is one of the indicators of the success of economic development (Maqbool-ur-Rahman, 2015; Nasrin & Khan, 2016). Bandung Regency, a part of West Java, is included in the category of having quite high economic growth compared to other regions. In 2019, the economic growth of Bandung Regency will reach 6.09 above the national average has 5.02 of growth (Badan Pusat Statistik Kabupaten Bandung, 2020).

Economic growth is influenced by several factors, including natural resources (Baotao, 2019; Hassan, Xia, Huang, Khan, & Iqbal, 2019; Isaiah Zayone, Henneberry, & Radmehr, 2020;
Jaimes & Gerlagh, 2020; Kim & Lin, 2017; Widianingsih, Suryantini, & Irham, 2016), human capital (Biyase & Kirsten, 2020; Castelló-Climent, 2019; Lubis, 2014; Oluwatobi, Olurinola, Alege, & Ogundipe, 2020), technology (Iqbal, Peng, Hafeez, & Khurshaid, 2020; Kowal & Paliwoda-Pękosz, 2017; Qiu, Xu, & Xu, 2018), and infrastructure (Ansar, Flyvbjerg, Budzier, & Lunn, 2016; Khan, Khan, Jiang, & Khan, 2020; Reid, 2017). Accordingly, endogenous growth theory states that in the long run, economic growth is largely determined by human capital and physical capital (Mankiw, 2013; Samuelson & Nordhaus, 2010). Therefore, human resources will contribute to economic growth.

The theory is also following economic growth in Islam which gives very serious attention to the development of human capital as well as the empowerment of natural resources to improve human dignity (Askari, Iqbal, & Mirakhor, 2015; Juliana, Marlina, Saadillah, & Mariam, 2018; Muttaqin, 2018). More than that, economic growth in an Islamic perspective must also include axiological aspects (values, morals, etc.) so that economic growth is not only oriented towards material well-being but also includes aspects of spirituality (Abidin, 2012; Al-Tariqi, 2004; Sadeq, 1991). Thus, human capital is one of the main determinants of economic development, because the higher the quality of human capital will have an impact on increasing productivity (Hussaini, 2020; Jorgenson, 2018; Wulan, 2014).

Although human capital has been identified as one of the main determinants of economic development, empirical analysis linking the human capital and economic growth has not yielded consistent results. Some studies have found a positive relationship between human capital and economic growth (Anwar, 2017; Biyase & Kirsten, 2020; Castelló-Climent, 2019; Hussaini, 2020; Oluwatobi et al., 2020; Sjafii, 2009); while others find the opposite, there is a negative relationship between human capital and economic growth (Caselli, Esquivel, & Lefort, 1996; Islam, 1995). These different results may be partly due to the specifications of the growth model, the definition of human capital, and the analysis period. This article will contribute and add to the existing literature by analyzing the influence of human capital on economic growth in Bandung Regency.

RESEARCH METHOD

This research is descriptive and associative inquiry. This study explains the effect of the independent variables, namely human capital, which is represented by education and health with the dependent variable of economic growth in Bandung Regency. The data used in this study is secondary data from the Central Bureau of Statistics of Bandung Regency from 2010 to 2019.

The concept that the author uses in this study is the economic growth of Bandung Regency (Y), which is GDP per capita in units of million rupiahs in constant 2010 prices from 2010 to 2019. Education (X₁) is the average length of schooling in 2010-2019 in units of people per year. Health (X₂) is the life expectancy rate in Bandung Regency from 2010-2019 in the form of an estimate of the average life span of the population with the assumption that there is no change in the pattern of mortality by age.
The hypothesis in this study is:

\[ H_1 = \text{There is an effect of education on economic growth.} \]

\[ H_2 = \text{There are health effects on economic growth.} \]

\[ H_3 = \text{There are effects of education and health simultaneously on economic growth.} \]

Data analysis in this study uses multiple linear regression models using the SPSS (Statistic Package for Social Sciences) program version 23.0. In this model, the effect of education and health on economic growth can be described in a function as follows:

\[ \bar{Y} = f(X_1, X_2) \]  \hspace{1cm} (1)

Where:

\[ \bar{Y} = \text{Economic Growth} \]

\[ X_1 = \text{Education} \]

\[ X_2 = \text{Health} \]

Furthermore, the above model is inserted into the multiple linear regression equation.

\[ \bar{Y} = \alpha + \beta_1(X_1) + \beta_2(X_2) + \epsilon \]  \hspace{1cm} (2)

Where:

\[ \bar{Y} = \text{Economic Growth} \]

\[ X_1 = \text{Education} \]

\[ X_2 = \text{Health} \]

\[ \alpha = \text{Constant} \]

\[ \beta_1, \beta_2 = \text{Independent Variable Regression Coefficient} \]

\[ \epsilon = \text{Residual Error} \]

**RESULTS AND DISCUSSION**

The Dynamics of Economic Growth, Level of Education and Health in Bandung Regency

Economic growth is one of the strategic macroeconomic indicators. It means that the success of development programs is judged based on high or low economic growth (Todaro & Smith, 2011). The role of economic development in Bandung Regency as a buffer for the capital city of West Java is very noteworthy. Therefore, it is significant to analyze the condition of Bandung Regency and the various main factors in economic development.

Based on statistical data obtained from the Central Statistics Agency, the economic development of Bandung Regency in the 2010-2019 period continues to increase. It can be seen from the statistic on Gross Regional Domestic Product per capita at constant prices in Bandung Regency. Figure 1 shows that the GRDP of Bandung Regency for ten years has
changed. In 2010 it was Rp. 15,110,739.62 per year. While it increased to Rp. 21,809,416.71 per year in 2019 or increase of 69.29%.

![Figure 1: Gross Regional Domestic Product per Capita at Constant Prices 2010-2019](image1)

The Human Development Index (HDI) is the primary indicator that becomes one of the references in analyzing the human development of an area. The level of human capital in a region can be examined by the level of education and health sector. These indicators can be investigated from the grade of facilities and infrastructure to support the educational and health aspect. Other measures that especially describe the quality of an area are the level of education and health that cognize from the average length of schooling and life expectancy.

![Figure 2: The Mean Years of Schooling in Bandung Regency in 2010-2019](image2)

The average length of school indicator states that an area with an average extent length of schooling is six (6) where most of the population of a region has a level of education equivalent to Elementary School (SD) while nine (9) is Middle School (SMP) and twelve (12) years is Senior High School (SMU)). The education indicators in Figure 2 above show that in the 2010-2019 period, education in Bandung Regency continued to increase. Even so, the data on the average length of schooling above indicates that most of the people of Bandung Regency are still junior high school (SMP) graduates.
Figure 3  
**Life Expectancy in Bandung Regency in 2010-2019**

Figure 3 is a health indicator depicted through life expectancy in Bandung Regency, illustrating an increase in health conditions from year to year. The highest increase occurred in the 2015-2019 period, from 73.07 to 73.40 or an increase of 0.33 points. The better health facilities and services in Bandung Regency influence this increase.

**Results and Interpretation**

After testing the classical assumptions, the data distribution is normal, multicollinearity, heteroscedasticity, and outliers do not occur, then these variables can be continued with the next analysis process.

**Table 1**  
**Test Results for Determining the Variable Coefficient**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-163,803</td>
<td>96,463</td>
<td>-1.698</td>
<td>0.133</td>
</tr>
<tr>
<td>Education (X1)</td>
<td>3,789</td>
<td>.906</td>
<td>.751</td>
<td>4.181</td>
</tr>
<tr>
<td>Health (X2)</td>
<td>1,945</td>
<td>1,416</td>
<td>.247</td>
<td>1.373</td>
</tr>
</tbody>
</table>

a. Dependent Variable: GRDP (Y)

(Source: Processed data, 2019)

Based on the SPSS output above, the regression equation in the study is as follows:

\[ y = -163,803 + 3,789(x_1) + 1,945(x_2) + \epsilon \]

From the equation above, it can explain that the constant value is -163.803, it means that if the education and health variables are zero, then economic growth in Bandung Regency for 2010-2019 has decreased by -163.803. The coefficient value for the education variable is 3,789. It means that if the education variable (X₁) increases by one unit and the other variables are constant, then the economic growth variable in Bandung Regency for the 2010-2019 period has increased by 3,789. And the coefficient value for the health variable is
1.945. It means that if the health variable \((X_2)\) increases by one unit and the other variables are constant, then the economic growth variable in Bandung Regency for the 2010-2019 period has increased by 1.945.

Table 2
The Results of The Determination Coefficient Test

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.985</td>
<td>.971</td>
<td>.963</td>
<td>.24007</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Health (X2), Education (X1)

b. Dependent Variable: GRDP (Y)

(Source: Processed Data, 2019)

Based on the SPSS output above, the adjusted \(R^2\) is 0.963 or 96.3%. So, it can be concluded that the influence of variable X on variable Y is 96.3%, while the remaining 3.7% is influenced by other factors not examined.

Table 3
Partial Test Results (t Test)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-163.803</td>
<td>96.463</td>
<td>-1.698</td>
</tr>
<tr>
<td></td>
<td>Education (X1)</td>
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<tr>
<td></td>
<td>Health (X2)</td>
<td>1.945</td>
<td>1.416</td>
<td>.247</td>
</tr>
</tbody>
</table>

a. Dependent Variable: GRDP (Y)

(Source: Processed Data, 2019)

Based on the SPSS output above, it can show the calculated sig value of each variable. Based on the SPSS output for the educational variables above, the sig value is 0.004 smaller than 0.05. So, it can be concluded that \(H_0\) is rejected or \(H_a\) is accepted, it means that education influences economic growth in Bandung Regency in the 2010-2019 period. As for the health variable, the sig value was 0.212 greater than 0.05. So, it can be concluded that \(H_0\) is accepted or \(H_a\) is rejected, it means that partially health has no effect on economic growth in Bandung Regency in the 2010-2019 period.
Table 4
Simultaneous Test Results (F Test)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>13,429</td>
<td>2</td>
<td>6,714</td>
<td>116.503</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual</td>
<td>403</td>
<td>7</td>
<td>58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13,832</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: GRDP (Y)
b. Predictors: (Constant), Health (X2), Education (X1)

(Source: Processed Data, 2019)

Based on the SPSS output above, the sig value is 0.000 smaller than 0.05. Besides, it can also be seen from the comparison of $F_{\text{count}}$ with the $F_{\text{table}}$. The table above shows that the value of $F_{\text{count}}$ is equal to 116.503 while the $F_{\text{table}}$ is 4.46. So that $F_{\text{count}} (116.503) > F_{\text{table}} (4.46)$. Thus, $H_0$ is rejected or $H_3$ is accepted, it means that the education and health variables simultaneously affect economic growth in Bandung Regency in the 2010-2019 period.

The results of the above analysis prove that human capital has a significant role in economic development. The main aspects that especially describe the quality of human capital are the level of education and health (Anwar, 2017; Sjafii, 2009). Education and health are very significant in shaping the quality of human resources so that it will increase productivity (Biyase & Kirsten, 2020; Licumba, Dzator, & Zhang, 2016; Mayer, 2001). Of course, this education sector must also be accompanied by government budget policies that are in favor of the human capital development sector (Hussaini, 2020; Kyophilavong, Ogawa, Kim, & Nouansavanh, 2018). Therefore, human resource development must be a development priority to increase economic growth.

Islam pays very serious attention to economic growth through human resource development as well as natural resources empowerment (Abidin, 2012; Sadeq, 1991). The main objective is to increase human dignity and values related to aspects of morality and moral quality as well as a balance between *dunyawy* and *ukhrawy* goals (Al-Tariqi, 2004; Askari et al., 2015). So that the measure of the success of economic growth is not only seen from the aspect of material growth alone, but also in terms of improving the overall aspects of life. If the economic growth that occurs triggers the deprivation of human values and justice, then it is certain that this growth is not in line with the principles of Islamic economics (Beik & Arsyianti, 2016). It is because Islamic economics defines economic growth as a continuous development of production factors that are capable of contributing to human welfare (Sadeq, 1991). Thus, economic growth in Islam is a matter of value. An increase in factors of production is not regarded as economic growth if the production of goods, for example, incorporate harmful and dangerous to humans.

Economic change is a comprehensive activity in the field of production that is closely related to the distribution of justice. Growth covers a broader side for the growth and advancement
of the material and spiritual aspects of humans. In other words, this approach is not only an economic issue of human life, but includes legal, social, political, and cultural aspects. In this sense, the goal of economic growth is to advance the foundations of social justice, equality, human rights, and human dignity (Alvi & Al-Raubaie, 2005). Thus, economic development in Islam is multi-dimensional, which includes quantitative and qualitative values. The goal is not solely material welfare in the world, but also the hereafter. Both are integrally united.

Furthermore, Islamic economics must be able to answer the question, whether the priority in economic growth is equity (growth with equity) or growth itself (growth and sich)? The answer to this question is that Islam requires both aspects. Growth and equity are needed simultaneously (Agustianto, 2008). Islam will not sacrifice economic growth, because growth is needed. On the other hand, Islam also still views the importance of equality (Naqvi, 2003). Economic growth does not represent welfare, especially if income and factors of production are concentrated in a few numbers of people.

Therefore, development according to an Islamic economic perspective must apply new techniques and approaches are that we must abandon the use of aggregative growth models that emphasize maximizing the growth rate as the only index of development planning. Economic growth and high income per capita are not the main goals. Because what does it mean that per capita is high, but it is different from the real conditions, poverty and inequality remain gaping.

To achieve equity, according to M. Umer Chapra, there are at least five main elements that must be done. First, holding training and providing job vacancies for job seekers, to realize full employment. Second, provide an appropriate wage system for employees. Third, prepare compulsory insurance to reduce unemployment, work accidents, old-age benefits, and other benefits. Fourth, to assist those with mental and physical disabilities so that they can live properly. Fifth, collect and utilize zakāt, infāq, and ṣadaqah, through laws as well as tax laws (Chapra, 2001). With these efforts, wealth is not focused on certain people. Al-Qur'an in Surah Al-Hasyr verse 7 expressly says, "wealth should not continue to circulate among the rich."

Bandung Regency, where the majority of the population is Muslim, has a vision based on religious, cultural, and environmental values (Rencana Pembangunan Jangka Menengah Daerah Kabupaten Bandung, 2019). The values in this vision must certainly be applied in every aspect of development in Bandung Regency. So that development activities must be oriented towards goals and values. Spiritual, moral, material, and social sides cannot be separated. The focus of development is humans with aspects of their cultural environment. It is different from the concept of modern economics that emphasizes that the goal of development is the material side only. Thus, Islam has a broader vision of the range of its development objects, from the material to human dignity.

CONCLUSION

Human capital has a positive and significant contribution to economic growth in Bandung Regency. If the level of education and health is getting better, it will encourage the economy to be better. It can become a basis for the government to further programs related to education and health development programs. This human capital development policy must
be oriented towards increasing human dignity. It is not only material orientation but also aspects of ethical and moral quality, and the balance between dunyawy and akhrawy goals.

This research has limitations that are expected to inspire further research. First, the research scope is only Bandung Regency as the object of analysis. Many other regions have a good level of economic development but are not part of this study. Second, this study only uses education and health variables that affect economic growth, whereas there are other variables that can affect economic growth, such as investment, infrastructure, and others.

REFERENCES


