Jurnal Ekonomi Pembangunan (JEP)
Vol. 17, No. 02, Desember 2019, pp. 175~185

QUALITY STUDY OF HUMAN DEVELOPMENT AND POVERTY IN MADURA ISLAND

Dwi Susilowati[1*], Sri Joko[2], Risky Angga Pramuja[3]
[1] Development Economics, Faculty of Economics and Business, University of Muhammadiyah Malang
[2] Management, Faculty of Economics and Business, University of Muhammadiyah Malang
[3] Development Economics, Faculty of Economics and Business, University of Muhammadiyah Malang
* Corresponding author: dwi_s@umm.ac.id

Artikel Info

Article history:
Received 23 November 2019
Revised 28 January 2020
Accepted 21 February 2020
Available online 24 February 2020

Keyword:
HDI, Poverty, Open Unemployment Rate, GRDP

JEL Classification; O15; I32; E24; F63

Abstrak

This study aims to find out the most dominant factors and determine the districts in Madura that require special attention from the observed model so that it can provide benefits for policymakers, and the research method used is panel data with the OLS square approach. The results of panel data regression with the fix effect model show the results that the variables that have a positive and significant influence are the GRDP at a 5% confidence level in the GRDP variable with a positive direction while the open unemployment variable has a significant negative effect having a 6% confidence level with a negative direction. Variable consumption expenditure does not have a significant effect but has a positive direction. Intercept values differ in each district which shows the uniqueness of the model of the fixed effect. The highest intercept values were Pamekasan Sampang, Bangkalan and Sumenep. From the results of the HDI classification, the Sampang has a low classification of the district vocationally on Madura Island. The results of the classification of expenditure of basic and lowest consumption of staples in 2012 and 2018 were Pamekasan and Sumenep. The results of the classification of the highest open unemployment rates were in Bangkalan in 2012 and 2018. The lowest GRDP classification was in Pamekasan districts in 2012 and 2017.

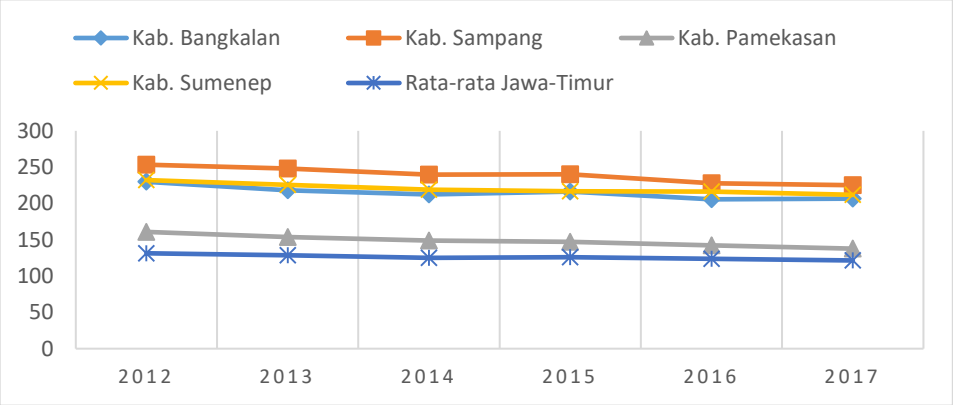
INTRODUCTION

One of the development goals in Indonesia is to reduce poverty. The decrease in poverty level will correlate with other economic indicators such as the existence of new jobs that indicate the improvement of a country's economic activities. Poverty is a disease in a country's economy so it must be cured or at least reduced. Based on the facts that occur in some countries the journey to a modern economic system is always accompanied by conflicts, such as the existence of economic inequalities and social inequalities. The problem of poverty is one of the problems faced by all countries in the world. Poverty is the inability of people to meet the basic standards of decent living needs such as food, shelter clothing, education, and health. According to (Kuncoro, 2003) poverty is the inability of people to meet minimum living standards with the parameters of poverty on the basis of consumption. According to Bachtiar Chamsyah poverty is a state of closure, which is isolated from all forms of physical and non-physical self-needs.

East Java Province has a region with a high level of poverty and is found on the island of Madura. Madura Island consists of 4 districts namely Sampang Regency, Bangkalan Regency, Sumenep Regency, and Pamekasan Regency.

Graph 1 illustrates from 2012-2017 the number of poor people in 4 districts on the island of Madura is always above the average number of poor people in the province of East Java. This proves that the 4 regencies in Madura Island are the biggest contributors to the number of poor people in the province of East Java. In 2012 - 2017 the highest number of poor people was in the Sampang Regency with the number of poor people in 2017 of 225,229 people and the lowest in Pamekasan Regency was 137,770 people.

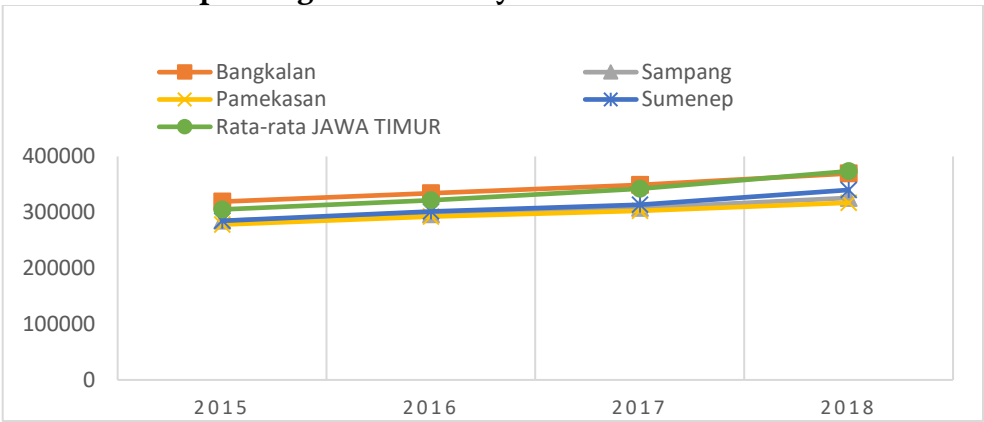
Graphic Figure 1. Number of The Poor Population



Sources: East Java Central Statistics Agency

Graph 2 shows that the per capita poverty line from 2015 - 2018 in 4 districts on Madura Island shows that there is still 1 district that has a poverty line above the average poverty line in East Java. 3 (three) of these districts are below the average poverty line in East Java, namely Pamekasan, Sumenep, and Sampang districts.

Graphic Figure 2. Poverty Line on Madura Island



Sources: East Java Central Statistics Agency

Research conducted by (Eren, Çelik, & Kubat, 2014) entitled "Determinants of the Levels of Development Based on the Human Development Index: A Comparison of Regression Models for Limited Dependent Variables" using parameters of life expectancy, length of the school, the level of labor force participation and GDP per capita. From the results of the regression model has a positive and significant effect on the human

development index. Research conducted by (Shah, Banking, & Services, 2016) entitled Determinants of Human Development Index: A Cross-Country Empirical. Variable GDP, life expectancy, literacy rate have positive constant values. Research conducted by (Susilowati, Sri, & Suliswanto, 2015) entitled "Economic Growth, Human Development Index, Foreign Debt and Poverty (Theoretical Study in Indonesia)." The results of the first causality test of the research showed the results, a causality test that showed there is no causal relationship between economic growth and the human development index. Then a causality test shows a causal relationship in the direction of economic growth.

Research conducted by (Angelsen, 2006) entitled "Poverty and Inequality: Economic Growth Is Better than Its Reputation" by measuring poverty as a dependent variable then economic growth and change in distribution as an independent variable. According to Sajogyo poverty is a level of life below the standard of decent living standards that are set and based on basic food needs that make a person can work and live a healthy life based on the needs of rice and nutrition (Widodo, 2006). Research conducted by (Suliswanto, 2010) entitled "The Effect of Gross Domestic Product (GDP) and Human Development Index (HDI) Against Poverty in Indonesia". The analysis concludes that all independent variables simultaneously have a significant effect on poverty variables in Indonesia and partially the Gross Domestic Product (GDP) variable has a significant negative effect on poverty with α 20%, and the Human Development Index (HDI) variable has a significant negative effect on poverty. With α 5%.

Research conducted by (Wardana, 2016) "The Effect of Economic Development on Human Development in East Kalimantan" by measuring the effect of economic growth and poverty rates on Human Development. Health sector government expenditure variables that have a positive and significant effect in strengthening the effect of economic growth on economic development. Then the government expenditure variable in education and health is not a moderator variable in strengthening the effect of poverty levels on human development. While the poverty rate variable has a negative but not significant effect on human development in East Kalimantan Province. Research conducted (Kyswantoro, 2016) entitled Analysis of factors affecting the Human Development Index (HDI) in the 6 Most Distinct Regions in Java in 2010-2016 using the variable labor force, the number of poor people and GRDP per capita. The results of the study of labor force variables did not significantly influence HDI, the number of poor people had a significant negative effect and GRDP per capita had a significant positive effect.

Research conducted by (Pudjianto & Syawie, 2015) entitled "Poverty and Human Development". The results of this study are poverty and human development, in essence, human development does need to be placed as a development priority given that until now the achievements are still relatively low. The UNDP report (2014) shows Indonesia's human development index

ranking at 108th position out of 187 countries. Research conducted by (Mirza, 2015) examined the "Effects of Poverty, Economic Growth, and Capital Expenditures on the Human Development Index in Central Java". While the panel regression results show that poverty has a negative and significant effect on HDI. Economic growth has a positive and significant effect on HDI and capital expenditure has a positive and significant effect on HDI. Solow in (N. Gregory Mankiw, 2010) describes economic activities in producing and using output at a certain time where the growth of capital stock or investment, the growth of the labor force and technological advances interact in the economy which will affect the output of goods and services produced by a country whole. Human resources play an important role in determining regions as disadvantaged areas due to economic development which is not only focused on economic growth, but also on the quality of human development which is described through an index, namely the HDI (Human Development Index) or HDI (Human Development Index). The HDI / HDI was introduced by the United Nations Development Program (UNDP) in 1990. UNDP compiled the HDI / HDI as a composite index based on three indicators, namely life expectancy at birth, adult literacy rate (adult literacy rate)) and the average length of school (mean years of schooling), and purchasing power parity. The benefits of HDI are indicators to measure success in efforts to build the quality of human life and determine the level of development of a region/country. HDI is formed by three basic dimensions, namely longevity and healthy living, knowledge, and a decent standard of living (BPS, 2018).

In addition, this research difference results in regional classification values of the variables examined. Previous studies used causality and probit regression. The selection of districts in Madura Island will be used as a parameter of the Human Development Index, expenditure on staple food consumption, open unemployment rates and GRDP, as a reflection of poverty levels on Madura island. The poverty level is an interesting thing to study because of its relevance to the development trilogy, especially the distribution of the results of development. The purpose of this research is to see the most dominant factors and determine the districts on the island of Madura that requires special attention from the observed model so that it can provide benefits for policymakers. In addition, Madura Island with a high average number of poor people in Madura province encouraged researchers to study in-depth using the assumptions of the observed model.

RESEARCH METHODS

This research is a quantitative descriptive study using secondary data. In this study, the area that will be the object of research is all regencies/cities in Madura Island with a period of time from 2011 to 2017. The research method that will be used is using panel data with the OLS square approach. The stages in the panel data regression test are a) the best model test b) regression test c) goodness of fit test d) the results of the discussion e) conclusions and suggestions. Then test the best panel data regression model through the test

series of panel data modeling tests. To choose the estimation model that is considered the most appropriate of the 3 types of panel data models a series of tests are needed, namely the chow test, the Hausman test, and the Lagrange Multiplier (LM) test. The chow test is used to choose the CEM (Common Effect Model) model with the FEM (Fixed Effect Model) model, the LM test is used to choose heteroskedastic or homoscedastic structures, or to choose between CEM (common effect Model) and REM (Random Effect Model). The Hausman test is used to choose the estimation model between FEM (Fixed Effect Model) and REM (Random Effect Model). This research is a quantitative descriptive and estimation of panel data regression model specifications are as follows:

$$Y = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu$$

Y = Human Development Index (%)
X1 = Consumption of staples (%)
X2 = Open Unemployment Rate (%)
X3 = GRDP (LOG)
α = intercept
1, 2, 3 = regression coefficient
μ = term error

RESULTS AND DISCUSSION

From the collected data, then the data processing is done using software data through a panel data regression test. Panel data modeling test results to produce the best model estimation shows the selection in the Fix Effect Model (FEM) model:

Yit= -107,8404 + 0,0330572X1it – 0,34463933 X2it + 40,51417X3it + µit

Through the above equation the model can be interpreted and tabulated as follows:

Table 1. Regression Results

Dependent Variable: Human Development Index

Independent Variable	Line	Coefficient	Prob	Std. Error
Spending Consumption of staples (X1)	+	0,0330572	0,73	0,0451665
Open Unemployment Rate (X2)	-	0,3463933	0,051	0,1673248
GRDP (X3)	+	40,51417	0,000	3,695732
Constanta	-	107,8404	0,000	14,80428
R-square within			0,8638	
Prob F (Prob >Chi2)			0,0000	

From the results of the tabulation and the equation above, we get an intercept or a constant of -107,8404. Then the value shows the index of human development on the island of Madura - 107.8404 when the parameter (X1)

expenditure on the consumption of staples, (X2) the level of open unemployment, and (X3) GRDP equal to zero. Value β1 (X1) variable regression coefficient (X1) expenditure on staple consumption is 0.0330572. Describe there is a positive influence between (X1) expenditure on the consumption of staples and (Y) the Human Development Index of 0.0330572. If variable X1 (expenditure on the consumption of staples) rises 1 percent then (Y) the human development index will increase by 0.0330572 percent assuming the other variables are considered zero. Value β1 (X2) variable regression coefficient (X2) open unemployment rate 0.3463933. Describe there is a negative influence between (X2) the level of open unemployment (Y) and the Human Development Index of 0.3463933. If variable X2 (open unemployment rate) rises 1 percent then (Y) the human development index will rise by 0.3463933 percent assuming the other variables are considered zero. Value β1 (X3) variable regression coefficient (X3) GRDP of 40.51417. Describe there is a positive influence between (X3) GRDP and (Y) Human Development Index of 40.51417. If variable X3 (GRDP) rises 1 percent then (Y) the human development index will increase by 40.51417 percent assuming the other variables are considered zero.

The result of the coefficient of determination (R2) is 0.8638 or 86.38%. These results illustrate the ability of the independent or dependent variables, namely (X1) expenditure on the consumption of staples, (X2) Open unemployment rate, and (X3) GRDP to explain the dependent or independent variable of the human development index of 0.8763 or 87.38%. and the remaining 13.62% is explained by other parameters outside the model which can implicitly be seen in the interrupt variables. Statistical tests are simultaneously seen with the value of prob F = 0.0000 or 0.00% less than α = 5%, which means the variable (X1) consumption expenditure for staples, (X2) open unemployment rate, and (X3) GRDP together the same effect on the index of human development on the island of Madura. Then the partial statistical test (T-Test) to see the effect of the independent variable on the dependent variable partially summarized in the following table:

Table 2 Significance of Independent Variables

Independent Variable	Regression Results	prob	explanation
Consumption of staples (X1)	Positive	0,472	Not significant
Open Unemployment Rate (X2)	Negative	0,051	Significant 6%**
GRDP (X3)	Positive	0,000	Significant 5%*

Seen in the test table of the significance of the independent variables, the expenditure parameters for the consumption of staples (X1) have a significant effect of 0.472, which does not have a significant effect on the human development index. Furthermore, the parameter of the open unemployment rate (X2) has a significant effect of 0.051 with a degree of confidence of 6%.

Then the GRDP parameter (X3) has a significant positive effect with a 5% confidence level.

Table 3 Multikolinierity Test

Variable	VIF	1/VIF
X1 Consumption of staples	1,07	0,931913
X2 Open Unemployment Rate (TPT)	1,05	0,956224
X3 GRDP	1,03	0,972079
Mean VIF		1,05

Multicollinearity symptom test results in the regression model are to look at the value of Variance Inflation Factor (VIF) and tolerance value. VIF test results are around number 1 and not higher than 10, so it can be explained that there is no multicollinearity between the independent variables in the regression model. Intercept values are different in each district which shows the uniqueness of the model. In the intercept ranking table in the Fix Effect technique.

Table 4 Intercept Ranking in the Fixed Effect Technique

Ranking	District	Intercept Value
1	Pamekasan	9.58189
2	Sampang	-0.621923
3	Bangkalan	-2.499916
4	Sumenep	-6.460051

The first Intercept value was achieved by the Pamekasan district with an intercept value or a constant of 9.58189. This shows that the Y variable of the human development index is 9.58189 when the variable expenditure on staple consumption (X1), open unemployment rate (X2) and GRDP (X3) is zero (constant). The second Intercept value was achieved by the Sampang district with an intercept value or constant of -0.621923. This shows that the Y variable of the human development index is -0.621923 at the time of the expenditure variable consumption of staples (X1), the level of open unemployment (X2) and GRDP (X3) is zero or constant. The third Intercept value was reached by Bangkalan district with an intercept value or constant of -2.499916 This shows that the Y variable of the human development index was -2.499916 when the variable expenditure on basic food consumption (X1), open unemployment rate (X2) and GRDP (X3) was zero or constant. The fourth Intercept value was achieved by Sumenep district with an intercept value or constant of -6.460051. This shows that the Y variable of the human development index is -6.460051 when the variable consumption expenditure of basic commodities (X1), the level of open unemployment (X2) and GRDP (X3) is zero or constant.

Table 5. Determination of Intensity Classification

Intensity Classification	Indicator Value
Very High	ø > mean + SD
High	mean + SD ≤ ø < mean + SD
Medium	mean –SD ≤ ø < mean
Low	Ø < mean

Sources: Research Team, KPPOD (Sulistyastuti, 2004)

Calculation of determination of intensity classification with variables of human development index, expenditure on the consumption of staples, open unemployment rate and GRDP per Regency as indicator values are grouped in the determination table of intensity classification in table 6 below:

Table 6. Classification of Human Development Index by Regency on Madura Island year 2012 and 2018

Year 2012	Year 2018
Very High : (> 61,54%) Nothing	Very High: (> 65,73 %) Nothing
High : (>59,18 – 61,54%) Bangkalan, Pamekasan Dan Sumenep	High : (>63,63 %– 65,73 %) Pamekasan, Sumenep
Medium : (>56,81% – 59,18 %), Nothing	Medium : (> 61,52% – 63,63 %) Bangkalan
Low : (< 56,81 %) Sampang	Low : (< 61,52 %) Sampang

The classification in table 6 in 2012 shows that the human development index with a high classification is in Bangkalan, Pamekasan, and Sumenep districts while those included in the low classification are Sampang. In 2018, the human development index with high classification is Pamekasan Regency and Sumenep Regency, medium classification is in Bangkalan Regency and low classification is in Sampang Regency.

Table 7. Classification of Principal Consumption Expenditures by Regency in Madura Island in 2012 and 2018

Year 2012	Year 2018
Very High : (> 61,69%) Bangkalan	Very High : (> 64,72 %) Sampang
High : (>59,68 – 61,69%) Sampang	High : (>61,76 % – 64,72 %) Bangkalan
Medium : (>57,67% – 59,68%) Pamekasan	Medium : (> 58,80 % – 61,76 %) Sumenep
Low : (< 57,67 %) Sumenep	Low : (< 58,80 %) Pamekasan

Based on the classification in table 7 in 2012, consumption expenditure for staple foods with a very high classification is in the Bangkalan district, then the district included in the high classification is Sampang district. Districts with moderate classification are in Pamekasan and districts that are included in the low classification are in Sumenep Regency. In 2018 the expenditure of consumption of staple foods with a very high classification is in the district of

Sampang, then the district included in the high classification is the Bangkalan district. Regencies with moderate classification are in Sumenep Regency and regencies that are included in the lower classification are in Pamekasan Regency.

Table 8. Open Unemployment Rate Classifications by Regency on Madura Island in 2012 and 2018

Tahun 2012	Tahun 2018
Very High : (> 4,33%) Bangkalan	Very High : (> 4,60 %) Bangkalan
High : (> 2,56 % – 4,33%) Nothing	High : (> 3,09 % – 4,60 %) Nothing
Medium : (> 0,79 % – 2,56 %) Pamekasan Sampang Sumenep	Medium : (> 1,58 % – 3,09 %) Pamekasan Sampang Sumenep
Low : (< 0,79 %) Nothing	Low : (< 1,58 %) Nothing

Based on the classification in table 8 in 2012 the level of open unemployment with a high classification is in the Bangkalan district, then the districts included in the medium classification are sampan, Pamekasan, and Sumenep districts. Based on the classification in the table in 2018 the open unemployment rate with a high classification is in Bangkalan Regency, then the regencies included in the medium classification are Sampang regency, Pamekasan regency, and Sumenep regency.

Table 9. PDRB Classification by Regency in Madura Island in 2012 and 2018

Year 2012	Year 2018
Very High : (> 17713,06) Nothing	Very High : (> 22333,88) Sumenep
High : (> 13160,9 – 17713,06) Sumenep, Bangkalan	High : (> 16701,475 -22333,88) Bangkalan
Medium : (> 8608,735 – 13160,9) Sampang	Medium : (>11069,06 – 16701,475) Sampang
Low : (< 8608,735) Pamekasan	Low : (< 11069,06) Pamekasan

It can be seen that the classification in table 9 in 2012 GRDP with high classification is in Bangkalan and Sumenep districts, then the regencies included in the medium classification are Sampang districts. Districts with low classification are in Pamekasan Regency. In 2018, the GRDP with very high classification is in Sumenep Regency, then the regency included in the high classification is Bangkalan Regency. Regencies with medium classification are

in Sampang Regency and regencies that are included in the low classification are in Pamekasan Regency.

CONCLUSION

Based on the results of a series of analyses, tests, and discussions in this study, the following conclusions are obtained. The results of the regression with the fix effect model show the results that the variables that have a positive and significant influence are the GRDP at a 5% confidence level in the GRDP variable with a positive direction while the open unemployment rate variable has a significant negative effect having a 6% confidence level with a negative direction. This is consistent with previous research conducted by Miraç Eren 2014. Variable consumption expenditure of staple food does not have a significant effect but has a positive direction, the theoretical relationship is in accordance with previous research conducted by Smith. Intercept values differ in each district which shows the uniqueness of the model of the fixed effect. The highest intercept values were Pamekasa District (9.58189), Sampang District (-0.621923), Bangkalan District (-2.499916) and Sumenep District (-6.460051). From the results of the HDI classification of Sampang regency has a low classification of the entire regency on the island of Madura. The results of the classification of expenditure of basic and lowest consumption of staples in 2012 and 2018 were Pamekasan and Sumenep districts. The results of the classification of the highest open unemployment rates were in Bangkalan districts in 2012 and 2018. The lowest GRDP classification was in Pamekasan districts in 2012 and 2017.

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