Kilisuci International Conference on Economic & Business

Vol. 1 No. 1, 2023

Analysis of the Human Development Index (HDI) With Regional Financial Ratios Approach

Yogas Andi Prima[1*], Faisol[2], Erna Puspita[3]

[1,2,3] University of Nusantara PGRI Kediri, Jl. KH. Ahmad Dahlan No.76, Mojoroto, Kota Kediri, East Java, 64112, Indonesia

yogasandiprima123@gmail.com*

*corresponding author

Article Information

Submission date	2023-01-26
Revised date	2023-02-09
Accepted date	2023-03-30

Abstract

Research Aim : *In the last three years, it has been found that there is still a significant gap in the level of welfare in the province of East Java***.** *So the objectives of this research are try to analyze the effect of the effectiveness ratio of regional original income, regional financial efficiency ratios, and the growth of regional original income toward the human development index in East Java Indonesia.*

Research Method : *This research used panel data regression analysis techniqueswith fixed effect model. The sample of this study included all of districts and cities in East Java. The data consists of the effectiveness ratio of regional original income, regional financial efficiency ratios, and growth of regional original income and the Human Development Index in the period of 2019 until 2021.*

Research Finding : *Based the fixed effect model, the finding of this research are the first is the effectiveness ration does not have a positive effect on the Human Development Index in Regency and City Governments in East Java. The second is the efficiency ratio has a significant effect on the Human Development Index in Regency and City Governments in East Java,. The third is the growth of regional original income does not have a positive effect on the Human Development Index in Regency and City Governments in East Java.*

Keywords : *Financial Ratio, Human Development Index, Panel Regression, Fixed Effect Model*

1. Introduction

People's choices expand as a result of human growth. One may say that this is a process of elevating human ideals. It is, of course, a complicated phenomenon that has been seen from several perspectives, including socioeconomic, political-legal, cultural, and demographic. On the basis of this occurrence, various projections are made regarding its effect on the nation's economic development.

Every country is competing in realizing the human development index as a manifestation of the success of a country for the welfare of society in various sectors of life. Indonesia, which also has the foundation of the 1945 Constitution, which aims to improve the welfare of the Nation and state, must show that its people also have good welfare. One of them is by looking at the human development index. This assessment is often used as one of the dimensions in assessing the success of a region or a country in having a level of welfare in developing its people. Several dimensions that factor into the assessment of the Human Development index or composite index in assessing country equity can be measured by the number of years of life, educational values and living standards [1].

Based on these three-dimensional points, many studies have evaluated the equity of each region the central government bears in its management. Especially in East Java Province, which has a reasonably large area compared to other provinces in Java. So far, it has been felt that the achievement of the Human Development Index in East Java has not been as equal as in the 2021 HDI data:

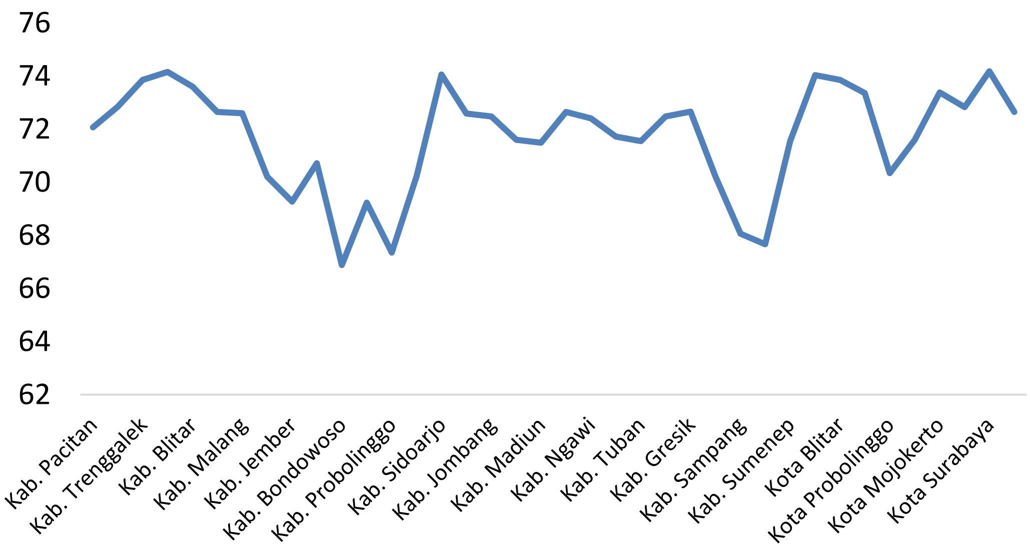

Figure 1. East Java Human Development Index for the 2021 period

Figure 1 above shows the achievement of HDI for districts and cities in East Java in the 2021 period 36.8% of districts/cities have HDI ≤ HDI for East Java Province 72.14. This shows that the central government gives various policies to each region in implementing policies and authorities as well as strategies to improve people's welfare which has not been appropriately realized in all regions of East Java. Local governments must be able to evaluate every period, both quarterly and annually, regarding the government's performance in realizing people's welfare by the ideological goals of the Indonesian Nation evenly.

Several factors are often linked in the efforts of each country to evaluate the factors considered for achieving human development, namely per capita income as an evaluation of regional economic equity, evaluation of the achievement of challenges in development which include the quality of economic growth, level of global externalization, industrial era towards 2030, technological advances and democratic economic achievements [2]. Based on several aspects that become factors in efforts to equalize welfare, many accountants carry out observations in each region and country regarding what variables make a country or region able to increase the human development welfare index.

One of the studies related to the factors that influence the Human Development Index is the effectiveness ratio level of local original income. The efficiency ratio is a ratio that shows the ability of a local government to mobilize PAD revenue according to the target. The higher the efficiency rate, the better the performance of local government [3]. This is one of the efforts of regional autonomy in optimizing regional financial performance by exploring maximum sources of local tax revenue and fees [4]. In addition to effective efforts, blood efforts efficiently in running regional finances can also be taken into account in achieving the Human Development Index. The regional financial efficiency ratio level is seen as a formal reinforcement in designing human synergy in a more productive economic activity [5][6]. In addition, the aspect of positive influence in increasing the Human Development Index is the growth of PAD which is an indicator of successful economic management [7].

Likewise, in this study researchers were motivated to analyze the Human Development Index with a ratio approach to regional financial performance using regencies and cities in East Java during the 2019-2021 period.

1.1 Statement of Problem

1. What is the effect of the effectiveness ratio of the regional original income toward the human development index?
2. What is the effect of the regional financial efficiency ratios toward the human development index?
3. What is the effect of the growth of regional original income toward the human development index?
4. What are the effect the effectiveness ratio of the regional original income, the regional financial efficiency ratios, and the growth of regional original income simultaneously on the human development index?

1.2 Research Objectives

1. To analyze the effect of the effectiveness ratio of the regional original income toward the human development index
2. To analyze the effect of the regional financial efficiency ratios toward the human development index
3. To analyze the effect of the growth of regional original income toward the human development index
4. To analyze the effect of the effectiveness ratio of the regional original income, the regional financial efficiency ratios, and the growth of regional original income simultaneously on the human development index

2. Method

This study falls under the category of quantitative research. Secondary data is the type of information used. East Java's district and city governments served as the study's subjects. The purpose of this study is to investigate how regional financial performance as measured by the effectiveness ratio (X1), efficiency ratio (X2), and increase in regional original income (X3) affects HDI (Y). The 2019–2021 timeframe is used to observe regional financial performance and HDI. The data analysis technique uses panel data regression analysis which considers the value of the time period and cross-section. Hypothesis testing was carried out using the panel data linear regression test through the eviews ver. 9. Among the results that will be presented in the results and discussion section are the statistical results of the Hausman Test, FEM test results.

The Definition of the Research Variables

Human development index (Y)

The UNDP methodology states that from 1990, when it was first put into use, and 2010, the HDI included a combination of three separate indicators: 1) Quality of life in general, as expressed by the expected duration of life; 2). Literacy, measured by a combination of two indicators: the adult literacy rate and the total enrollment rate in primary, secondary and tertiary education; 3) Standard of living, namely the economic benefits expressed by production, namely GDP (gross domestic product) in terms of purchasing power. Hence, HDI is a simple arithmetic mean of all three primary indices:

$$HDI = \frac{I_1 + I_2 + I_3}{3}$$

Where i_1 describes the life expectancy index, I_2 education index, and I_3 GDP index the level classification of human development achieved is:

0.0 < HDI < 0.55 – low level of human development;

1.0 0.55 < HDI < 0.70 – medium level of human development;

2.0 0.70 < HDI < 0.80 – high level of human development and

3.0 0.80 < HDI < 1.00 – very high level of human development

The effectiveness ratio (X1)

The effectiveness ratio is a ratio that assesses how well an organization is doing at pursuing its established objectives. If the ratio created or accomplished can be greater than 100%, the district or city government's performance is considered to be effective [8]. The performance of the Regency or municipal government is inversely correlated with the effectiveness ratio value.

The efficiency ratio (X2)

The efficiency ration is a ratio that can be used to compare the output of the public sector to the level of input from organizations in the public sector[9]. An operational activity is said to be efficient if it uses the fewest resources and funds possible to produce a given good or service. Efficiency is defined as the ratio of input to output. Input is the realization of regional income, while output is the realization of costs to get those revenues. In this case the realization of costs to obtain regional income is assumed to be the realization of expenditures.

The growth of regional original income (X3)

This ratio is the local government ability to retain and improve the success that has been attained from period to period is measured by the growth ratio of regional original income. Obviously, it is hoped that growth would be beneficial and that the trend will continue to rise.

The model

Data related to completeness in making measurements were obtained from official financial records at the Central Bureau of Statistics (BPS) and Portal Publication of the Directorate General of Fiscal Balance of the Ministry of Finance (DJPK Kemenkeu)[10]. The data that the researcher has collected will be analyzed using panel data linear regression analysis. Because it contains times series and cross sections, so it has an approximate regression equation model that is formed:

$$\mathbf{Y_{it} = \alpha + \beta 1X1_{it} + \beta 2X2_{it} + \beta 3X3_{it} + e_{it}}$$

Where:

Y = the human development index

X1 = the effectiveness ratio of regional original income
X2 = the regional financial efficiency ratios
X3 = the growth of regional original income
t = show the period of time
i = shows the district or city
e = show the error

3. Results and Discussion

Result

The Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) are the three models that make up a panel data analysis [6];[11]. The first step is to choose the best model from these three models using the Chow test and Hausman test to confirm that the model chosen is the best model. The following tests are used to evaluate the data quality in this study: 1. Test Chow To determine which model, FEM or PLS, was the best, the Chow test was used. The Hausman test's findings are as follows:
Hausman Test Results

Table 1. Hausman Test Results

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	57.818225	3	0.0000

Table 1's findings show that the Hausman test has a statistical value of 57.818225, the degree of freedom is 3 and probability value of 0.000 < 0.05, indicating that FEM is a better choice than REM and that the Lagrange Multiplier (LM) test is unnecessary. Consequently, the results of this study's panel data regression utilizing a Fixed Effect Model (FEM). The following panel data regression equation can be constructed after it is known that this study employs a fixed effect (FEM) model.
Fixed Effect Model Result

Table 2. Fixed Effect Model Result

Dependent Variable: LN_Y
Method: Panel Least Squares
Sample: 2019 2021
Periods included: 3
Cross-sections included: 38
Total panel (balanced) observations: 114

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.391672	0.009220	476.2946	0.0000
X1	2.25E-05	6.16E-05	0.365495	0.7158
X2	1.79E-05	9.22E-06	-1.936526	0.0501
X3	1.17E-05	7.30E-05	0.160247	0.8731
		Effects Specification		

Cross-section fixed (dummy variables)

Root MSE	0.004626	R-squared	0.997864
Mean dependent var	4.383094	Adjusted R-squared	0.996693
S.D. dependent var	0.100521	S.E. of regression	0.005780
Akaike info criterion	-7.195160	Sum squared resid	0.002439
Schwarz criterion	-6.211089	Log likelihood	451.1241
Hannan-Quinn criter.	-6.795781	F-statistic	852.5205
Durbin-Watson stat	2.907274	Prob(F-statistic)	0.000000

Note: X1 is the effectiveness ratio of regional original income; X2 is the regional financial efficiency ratios; and X3 is the growth of regional original income

The results of the partial test in this study are:

1. The variable of the effectiveness ratio (X1) with a t-statistic of 0.365495 with a probability level of 0.7158. So the effectiveness ration does not have a positive effect on the Human Development Index in Regency and City Governments in East Java.
2. The variable of the efficiency ratio (X2) with a t-statistic of -1.936526 with a probability level of 0.0501. It meant that the efficiency ratio has a significant effect on the Human Development Index in Regency and City Governments in East Java.
3. Variable of the growth of regional original income (X3) with a t-count of 0.160247 with a probability level of 0.8731 So the growth of regional original income does not have a positive effect on the Human Development Index in Regency and City Governments in East Java.

Discussion

The success of community welfare is significantly influenced by the Human Development Index. A high HDI shows that the region's human resources are now of higher caliber. Regional and non-regional financial indicators are a few elements that affect the rise in HDI. Using panel data made up of a number of city and district governments in East Java, research results on the Human Development Index as observed from regional financial indicators are obtained. The Fixed Effect Model (FEM) is employed after verifying the data quality.

The outcomes then demonstrate that the Human Development Index in the City and Regency Governments in East Java is not positively impacted by the effectiveness ratio and the growth of regional original income. The success of local governments in achieving their goal of getting PAD is indicated by the PAD effectiveness ratio. The freedom of the local government to employ available finances to construct and develop the regional economy may be impacted by its ability to independently extract revenue potential. Increasing good living standards, quality of life, and community welfare can all be impacted by a growing regional economy. Some experts said that the success of local governments in achieving their goal of getting PAD is indicated by the PAD effectiveness ratio. The flexibility of local governments to employ available finances to construct and develop the regional economy may be impacted by their ability to independently extract revenue potential. Increasing good living standards, quality of life, and community welfare can all be impacted by a growing regional economy. This finding is not consistent with [9]; [8], but this finding is line with [12], explained Regional Original Income has not been able to increase HDI.

The efficiency ratio is significant because it tracks the amount of money the government spends and receives. The proposed hypothesis is accepted because the efficiency ratio variable's significance value on the t-test, which is 0.050, is less than 0.05. These findings suggest that in Regencies/Cities across East Java Province, the efficiency ratio either raises or lowers the Human Development Index. This in line with [8]. The efficiency ratio is a ratio that illustrates how much output can be produced while using the least amount of resources and money possible. The efficiency ratio compares regional spending to regional income during the computation. The financial performance of the region is negatively correlated with the efficiency ratio and vice versa. Low efficiency ratios indicate good efficiency. It is possible to determine that the local government is competent to independently control and manage its government finances based on how efficiently its finances are managed. In other words, the local government can function on its own. This is consistent with the theory and efficiency standards that say a region's finances will be less efficient the higher the ratio of expenses to income. The reduced expenditure to regional income ratio will further promote the development of the welfare of people [13];[8].

4. Conclusion

There are two perspectives from which to view the indicators that affect the growth of the Human Development Index: the financial perspective and the non-financial perspective. The findings of this study indicate that regional finance has not made the greatest contribution to HDI development. With the use of these discoveries, local governments should be able to raise the proportion of each regional finance's constituent parts, such as spending, income, financing, and economic growth. While the non-financial side may be seen in the research of various prior studies that indicate that a rise in population that is not equal to the level of employment will impede the rise in HDI. Every family must use family planning in order to slow the rate of population expansion.

On a long-term basis, monies are obtained from regional own revenue for development in the Regency/City Government of East Java Province. It is envisaged that this can become a source of regional financing so that it is able to finance growth in the Regency/City itself. region of East Java. in relation to the Human Development Index. Using the Fixed Effect Model, the Human Development Index in City and Regency Governments in East Java is unaffected by the efficiency and growth of local revenue. However, the regional financial efficiency ratio significantly affects the Human Development Index.

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