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The Influence of Economic Growth and The Gini Ratio on The Happiness Index on Sulawesi Island

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Abstract

Sulawesi Island happiness index is a composite index calculated in a weighted manner using dimensions and indicators on a scale of 0-100. The higher the index value indicates the happier the population's level of life. Conversely, the lower the index value, the more unhappy you feel. The aim of this research is to determine the effect of economic growth and the Gini ratio on the happiness index on the island of Sulawesi. The data used in this writing is panel data,which is a combination of cross section data or data at a certain time which is juxtaposed with time series data, which is obtained from the Central Bureau of Statistics (BPS). Based on the research results, it shows that economic growth has a positive effect on the happiness index in Sulawesi in 2014, 2017 and 2021. The gini ratio has no effect on the happiness index in Sulawesi in 2014, 2017 and 2021.

Keywords: Economic growth, gini ratio, happiness index

1. Introduction

Happiness is something that is felt and perceived differently by each person. Happiness will be interpreted differently by each individual related to their respective perceptions. Each individual's assessment of happiness will be related to whether he is happy or sad. Pleasure or distress depends on the perception of whether he is able to function well, for himself, his family and society.

Humans always behave to seek happiness. Everyone wants happiness in their life. According to Aristotle, happiness is the main goal of human existence. Every human being also has hopes that he wants to achieve to fulfill satisfaction in his life. Both, happiness and satisfaction in life are part of the concept of subjective well-being which includes effective and cognitive aspects of humans [1].

Happiness is part of well-being, and greater happiness can increase human capability to function. Amartya Sen in Todaro and Smith [2], suggests that in terms of happiness, utility can be well encompassed in a list of several functions that are important and relevant to a person's well-being. According to [3] human welfare means being better, which in a basic sense means being healthy, eating more nutritious food, dressing appropriately, being literate, and living a long life. [4] also believes that happiness *is* part of human well-being. A broader understanding of being good means being able to take part or take part in society's life, being able to move freely (*mobile*), and having the freedom to choose to be the person you want to be and then being able to do whatever is possible.

Sulawesi Island happiness index is a composite index calculated in a weighted manner using dimensions and indicators on a scale of 0-100. The higher the index value indicates the happier the population's level of life. Conversely, the lower the index value, the more unhappy you feel.

The level of social welfare can be measured using two ways, namely using the same standards (objective indicators) and using unequal standards (subjective indicators). One of the welfare indicators that measures achievements based on standards that are not the same for each individual is the happiness index (Central Statistics Agency). In Indonesia, for the first time in 2013 the Central Statistics Agency (BPS) carried out a Happiness Level Measurement Study (SPTK). The results of this study stated that the happiness index of Indonesian people in 2013 was 65.11 on a scale of 0-100. An index value of 100 describes a very happy condition and vice versa, an index number of 0 describes the life of a very unhappy individual [5].

Empirical studies are carried out in a number of countries or provinces over a certain period of time. One of the findings of the study is that the average level of happiness or satisfaction increases with the income of a country or province.

In the context of society as an object of development, an indicator is needed to measure the level of social welfare. Indicators of the success of a country or province can be seen from the rate of economic growth. Economic growth is used as an indicator of the success of development in a country or province. The government's efforts to increase the level of community welfare are reflected in the economic growth that can be achieved [6]. In general, to see the level of welfare in terms of economic growth, the indicator used is Gross Regional Domestic Product (GRDP). Economic growth is defined as an increase in goods and services produced in society, so that if more goods and services are produced, society's welfare will increase [7].

2. Methodology

The data used in this writing is panel data, which is a combination of *cross section data* or data at a certain time which is juxtaposed with *time series data* or time-guided data. Panel data in terms of quantitative methods is also called pooling data. The data analysis used is descriptive analysis, multiple linear regression analysis.

$$\mathbf{Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon}$$

Where:

Y = Happiness Index

α = Constant

β = Slope or estimate coefficient

X_1 = Economic Growth

X_2 = Gini Ratio

ε = *Error Term*

3. Result and Discussion

3.1 Research result

3.1.1 Descriptive Analysis

Chandra [8] Descriptive-quantitative analysis, namely describing systematically, factually and accurately a treatment in a particular area regarding cause and effect relationships based on observations of existing effects. The descriptive analysis method functions to describe or provide an overview of the object under study, without carrying out analysis and making generally accepted conclusions. Meanwhile, quantitative descriptive analysis is a data analysis technique that uses numbers to draw conclusions and events that can be measured.

3.1.2 Happiness Index

Table 1. Happiness Index

PROVINCE	Year		
	2014	2017	2021
North Sulawesi	70.79	73.69	74.96
Central Sulawesi	67.92	71.92	74.46
South Sulawesi	69.80	71.91	73.07
Southeast Sulawesi	68.66	71.22	73.98
Gorontalo	69.28	73.19	74.77
West Sulawesi	67.86	70.02	73.46

Source: Indonesian Central Statistics Agency a

Based on the results of calculating the happiness index according to provinces on the island of Sulawesi 2014-2021, it shows that in the province of North Sulawesi in 2014 it was at 70.79 percent, in 2017 it increased to 73.69 percent, and in 2021 it also experienced an increase at 74 .96 percent. In the province of Central Sulawesi in 2014 it was at 67.92 percent, in 2017 it increased to 71.92 percent, and in 2021 it also increased to 74.46 percent. In South Sulawesi in 2014 it was at 69.80 percent, in 2017 it increased to 71.91 percent, and in 2021 it also increased to 73.07 percent. In the province of Southeast Sulawesi in 2014 it was at 68.66 percent, in 2017 it increased to 71.22 percent, and in 2021 it also increased to 73.98 percent. In Gorontalo province in 2014 it was at 69.28 percent, in 2017 it increased to 73.19 percent, and in 2021 it also increased to 74.77 percent. In West Sulawesi in 2014 it was at 67.86 percent, in 2017 it increased to 70.02 percent, and in 2021 it increased to 73.46 percent.

3.1.3 Economic growth

Table 2. Economic Growth

PROVINCE	Year		
	2014	2017	2021
North Sulawesi	6.31	6.31	4.16
Central Sulawesi	5.07	7,10	11.70
South Sulawesi	7.54	7.21	4.65
Southeast Sulawesi	6.26	6.76	4.10

Gorontalo	7.27	6.73	2.41
West Sulawesi	8.86	6.39	2.56

Source: Indonesian Central Statistics Agency

Based on the results of calculating the implicit rate of Gross Regional Domestic Product (GRDP) based on constant 2010 prices by province, in the province of North Sulawesi, economic growth in 2014 and 2017 did not change or was constant at 6.31 percent and increased in 2021 at 4. 16 percent. In the province of Central Sulawesi, economic growth has increased, where in 2014 it was 5.07 percent, in 2017 it was 7.10 percent and in 2021 it was 11.70 percent. In the province of South Sulawesi in 2014 it was at 7.54 percent, in 2017 it experienced a decrease at 7.21 percent, and in 20212 it also experienced a decrease at 4.65 percent. In the province of Southeast Sulawesi in 2014 it was at 6.26 percent, in 2017 it experienced an increase to 6.76 percent, and in 2021 it experienced a decrease at 4.10 percent. In Gorontalo province in 2014 it was at 7.27 percent, in 2017 it experienced a decrease at 6.73 percent, and in 2021 it experienced a decrease at 2.41 percent. Then in the province of West Sulawesi in 2014 it was at 8.86 percent, in 2017 it experienced a decrease at 6.39 percent, and in 2021 it experienced a decrease at 2.56 percent.

3.1.4 Gini Ratio

Table 3. Gini Ratio

PROVINCE	Year		
	2014	**2017**	**2021**
North Sulawesi	0.44	0.39	0.36
Central Sulawesi	0.35	0.34	0.33
South Sulawesi	0.45	0.43	0.38
Southeast Sulawesi	0.40	0.40	0.39
Gorontalo	0.45	0.40	0.41
West Sulawesi	0.38	0.34	0.37

Source: Indonesian Central Statistics Agency

Based on the results of Gini Ratio calculations, it shows that in the province of North Sulawesi in 2014 it was at 0.44, in 2017 it experienced a decrease to 0.39 and in 2021 it also experienced a decrease at 0.36. In the province of Central Sulawesi in 2014 it was at 0.35, in 2017 it decreased to 0.34, and in 2021 it also experienced a decrease at 0.33. In the province of South Sulawesi in 2014 it was at 0.45, in 2017 it experienced a decrease at 0.43, and in 2021 it also experienced a decrease at 0.38. In the province of Southeast Sulawesi in 2014 and 2017 it was at 0.40, and in 2021 it has decreased to 0.39. In Gorontalo province in 2014 it was at 0.45, in 2017 it experienced a decrease at 0.40, and in 2021 it experienced an increase at 0.41. In the province of West Sulawesi in 2014 it was at 0.38, in 2017 it experienced a decrease at 0.34, and in 2021 it experienced an increase at 0.37.

3.1.2 Results of Multiple Regression Analysis

Multiple regression analysis aims to find out whether the dependent variable (Y) is influenced by more than one independent variable (X). In this research there are two independent variables, economic growth and Gini ratio, as well as the dependent variable, namely the happiness index

Table 4. Multiple Regression Results

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	79,350	6,270		12,656	,000
	Economic growth	-,342	,258	-,317	-1,324	,205
	Gini Ratio	-14,162	15,240	-,223	-,929	,367

a. Dependent Variable: Happiness Index

Based on the multiple linear regression test in the table above, it is known that the constant (α) is 79.350, while the economic growth value is -0.342 and the Gini ratio value is -14.162 (b/regression coefficient), so the regression equation can be written:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

$$Y = 79.350 + -0.342\ X_1 + -14.162\ X_2 + e$$

a. F test

This F test is useful for testing the significance of the influence of independent variables together on the value of the independent variable. This test looks at how much influence variables X1 (Economic Growth), X2 (Gini Ratio), together have on variable Y (Happiness Index).

1) If the sig value is <0.05, or F count > F table then there is a simultaneous influence of variable X on variable Y.
2) If the sig value is >0.05, or F count < F table then there is no simultaneous influence of variable X on variable Y.

Based on the table above, you can see partial research tests, but before concluding that the hypothesis is accepted or rejected, first determine:

Table 5. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13,523	2	6,762	1,234	,319 [b]
	Residual	82,208	15	5,481		
	Total	95,731	17			

a. Dependent Variable: Happiness Index
b. Predictors: (Constant), Gini Ratio, Economic Growth

F table = F (k: nk) = F (2 :18) = 19.43 (seen in the data distribution of F table values)

Based on the results of the calculated F test in 2014, 2017 and 2021, it shows that it is 1.234 and the F table is 19.43. so that F count > F table then H0 is rejected, which means that together with the economic growth variables, the Gini ratio has a significant effect on the happiness index in Sulawesi.

b. T test

The t test aims to determine whether there is a partial (own) influence exerted by the independent variable (X) on the dependent variable (Y). The conditions for making decisions based on significance values are:

1) If the value is significant (Sig). < probability 0.05 then there is an influence of the independent variable (X) on the dependent variable (Y) or the hypothesis is accepted.
2) If the value is significant (Sig). > probability 0.05 then there is no influence of the independent variable (X) on the dependent variable (Y) or the hypothesis is rejected.

If based on a comparison of tcount values with ttable:

1) If the value of tcount > ttable then a
2) there is an influence of the independent variable (X) on the dependent variable (Y) or the hypothesis is accepted.
3) If the tcount < ttable then there is an influence of the independent variable (X) on the dependent variable (Y) or the hypothesis is rejected.

Table 6. T test

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	Q	Sig.
		B	Std. Error	Beta		
1	(Constant)	79,350	6,270		12,656	,000
	Economic growth	-,342	,258	-,317	-1,324	,205
	Gini Ratio	-14,162	15,240	-,223	-,929	,367

a. Dependent Variable: Happiness Index

Based on the table above, you can see partial research tests, but before concluding that the hypothesis is accepted or rejected, first determine:

T_{table} = (α/2: n – k – 1)
= (0.05/2: 18– 2 – 1)
= (0.025: 15) (seen in the distribution of Ttable values) = 2.13

Based on the t test results shown in table 8, the results are that:

1) In 2014, 2017 and 2021, the t-calculated value of the economic growth variable was -1.342 < t-table 2.13 and the economic growth value had no significant effect on the happiness index.
2) In 2014, 2017 and 2021, with a t-calculated value of the Gini ratio variable of -14.162 > t-table 2.13, it can be concluded that the Gini ratio variable has no effect on the happiness index.

c. Coefficient of Determination (R^2)

The coefficient of determination functions to find out what percentage of influence variable X has simultaneously on variable Y.

Table 7. R^2 (Coefficient of Determination)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,376 [a]	,141	,027	2.34105

a. Predictors: (Constant), Gini Ratio, Economic Growth

In 2014, 2017 and 2021 the value of R^2 was 0.141, this shows that the variations in the independent variables (Economic Growth and Gini ratio) together were able to explain their influence on the variation in the happiness index by 14.10% while the remainder was 85 .90% is explained by other variables outside this research model.

3.2 Discussion

3.2.1 The influence of economic growth on the happiness index

Based on the results of 2014, 2017 and 2021, the economic growth regression coefficient is -0.342 , where < α (0.05), it has a positive influence, which means that for every change in economic growth of 1 percent (%) the happiness index will increase by -0.342 points. This is in line with research by [9] which states that there is a positive relationship between the level of happiness and economic growth. Meanwhile, in 2017 the regression coefficient for economic growth was 0.215903 and the probability value was 0.2309 where > α(0.05), so economic growth did not have a significant effect on the happiness index. This is also in line with research conducted by [9], the results of which show that economic growth does not have a significant relationship with the happiness index because economic growth is not accompanied by equitable development. This is then supported by [10] opinion, known as the “Easterlin Paradox”, which states that long-term economic growth has no further influence or effect on increasing happiness.

3.2.2 The influence of the Gini ratio on the happiness index

The results of the regression coefficient for 2014, 2017 and 2021, the Gini ratio variable is -14.162, where -14.162 > α (0.05), so the Gini ratio does not have a significant effect on the happiness index. This is in line with research conducted by [11], the results of which show that the income inequality variable does not have a significant effect on people's level of happiness. Likewise, research by [12] stated that the Gini ratio had no effect on the happiness index in Indonesia in 2017.

4. Conclusion

Based on the results of research conducted by researchers entitled The Effect of Economic Growth, Gini Ratio on the Happiness Index on Sulawesi Island, the following conclusions can be given:

a. Economic growth has a positive effect on the happiness index in Sulawesi in 2014, 2017 and 2021.
b. The Gini ratio has no effect on the happiness index in Sulawesi in 2014, 2017 and 2021.

c. The author would like to express his thanks to the lecturers of the development economics study

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