

The Role Of The Agriculture And Industrial Sector In Poverty In South Sulawesi

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Abstract

This research aims to determine the influence or role of the agricultural sector and the industrial sector on poverty in South Sulawesi. This research uses collection techniques with documentation methods, namely collecting and processing data from the Central Statistics Agency (CSA) of South Sulawesi Province from year to year. Apart from that, this research also uses library research, namely reading and collecting literature that is relevant to the research topic. In this research, the estimation method used is the Random Effect Model (REM) method, using a quantitative method, namely a data analysis method that uses numbers to draw conclusions and events that can be measured. with a time series using the eviews application, in processing the data the multiple linear regression analysis method was used. The agricultural sector and industrial sector are independent variables and poverty is the dependent variable. The results of the t test in the agricultural sector in this study show that tcount is greater than ttable, meaning that the agricultural sector has a significant effect on poverty. Meanwhile, the results of the t test in the industrial sector show that tcount is smaller than ttable, meaning that the industrial sector has no significant effect on poverty.

Keywords: Agricultural Sector, Industrial Sector, poverty, South Sulawesi

1. Introduction

A common problem faced by all countries in the process of implementing financial decentralization is poverty. Many efforts have been made to reduce the poverty that occurs. However, these efforts are not as effective as they could be in overcoming poverty. Therefore, in the development process to lift poverty, large national income and rapid economic growth are needed. In almost every country, the main goal is to reduce the constant economic growth of all existing sectors. However, economic conditions are clearly not strong enough to support poverty. In general, economic growth is something that is necessary, although good economic growth is not necessarily enough to reduce the number of poor people if it is not accompanied by income growth [1].

In the process of understanding and characterizing poverty, in general the definition of subsistence with an emphasis on economics is more advanced and widely applied, where poverty is understood as a reduction in economic factors to strengthen an abundant quality of life. The phenomenon of economic poverty is usually associated with a decrease in income to maintain current living standards [2]. As a phenomenal problem in the economic field, poverty is a reference point for the success of state governments from year to year. Poverty is a very major problem for developing countries, especially in Indonesia [3].

The most important factor in developing development strategies or instruments is their effectiveness in reducing the number of poor patients. This is the main factor in developing a sector of emphasis or national/regional development sector. The complex and varied causes of poor patient cases mean that this disease cannot be treated optimally [4]. The quantity and

representation of poor people in various regions will of course be a development factor, which will increase the government's role in overcoming it. Allocation of funds from the State Revenue and Expenditure Budget/Regional Revenue and Expenditure Budget for poverty reduction programs, such as whether the quality is decreasing or there are no poor people. However, the data shows that the implementation of perpetual poverty policies is something that needs to be carefully considered and studied, especially in the formulation and implementation of perpetual poverty mitigation strategies and programs run by the government. Poverty in several provinces in Indonesia, especially on the island of Sulawesi, is still a very serious problem [5].

In efforts to eradicate poverty, the agricultural sector is the most important and leading sector, considering that most poverty occurs in rural areas. It is hoped that government policy can quietly enter this area of poverty. An important starting point for protecting and empowering farmers, especially small farmers, is rural areas that are rich in various farming activities. The main role of the agricultural sector in economic development lies in several things, including: 1) supporting growth and providing national employment opportunities, 2) providing the food needs of the community or population in a country, 3) earning foreign exchange for the country, 4) driving the development of the industrial sector, 5) poverty alleviation and community welfare, especially in rural areas. [6]

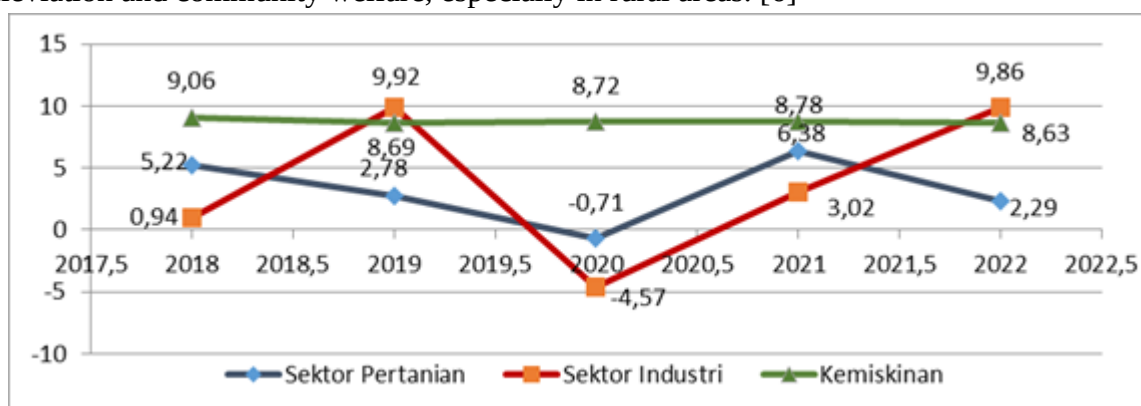


Figure 1 Gross Regional Domestic Product of South Sulawesi Province According to Business Fields 2013-2022.

Based on the graph above, it shows that economic growth in South Sulawesi in 2018 was 9.06 percent, in 2019 it increased by 9.92 percent, in 2020 it experienced a decrease of 8.72 percent, in 2021 it increased again by 8.78 percent and in 2022 it will increase again by 9.86 percent. in 2018 the agricultural sector gained 5.22 percent, in 2019-2020 it experienced a decrease of 2.78 percent to -0.71 percent, and in 2021 it increased again by 6.38 percent and in 2022 it experienced a decrease of 2.29 percent. in 2018 the industrial sector gained 0.94 percent, in 2019 it experienced an increase of 9.92 percent, in 2020 it experienced a decrease of -4.57 percent, and in 2021-2022 it experienced an increase of 3.02 percent to 9.86 percent .

According to the theory put forward by Michael Todaro and C. Smith (2003; 374), the agricultural sector is part of the economy which consists of agricultural fields such as forestry, hunting (or animal cultivation), and fisheries [7]. The agricultural sector is one of the sectors that has received more attention, which is related to the use of agricultural land which greatly

influences poverty levels. The indicators for the agricultural sector are forestry, plantations and food crops.

The agricultural sector has an important role in the Indonesian economy. The agricultural sector has a role that contributes to GDP (Gross Domestic Product) after the processing industry and trade. In 2019, GDP (Gross Domestic Product) and production levels in the Petroleum, Energy and Mining sectors amounted to IDR 1,354 trillion or 12.4% of national GDP (Gross Domestic Product). The agricultural sector increases population density and reduces handling. On the other hand, farmer regret is a crucial factor in boosting and advancing production. Advances in agriculture can contribute to faster economic growth and better poverty outcomes. Especially in rural areas, the agricultural sector drives a very large workforce [8]. The agricultural sector is still the largest contributing sector (23.90 percent) to the GRDP of South Sulawesi Province. This is in line with the title of South Sulawesi as one of the agricultural centers in Eastern Indonesia [9].

The industrial sector is referred to as the leading or leading sector. This is related to the development of the industrial sector which will influence and accelerate the development of other sectors such as banking and the oil industry. The growth of small-scale industry will put pressure on the secondary sector to supply industrial raw materials. The banking sector is also growing, consisting of financial institutions, insurance companies, and other organizations that together will support the further growth of this industry [10].

The industrial sector is an economic activity in which there are productive activities that produce raw goods into production goods which greatly influence the poverty level of an area, while the indicators for the industrial sector are small industry and large industry. The problem that can be raised in this research is how the agricultural sector and industrial sector influence poverty in South Sulawesi selatan.

Apart from the agricultural sector, the industrial sector also makes a huge contribution to the environment. The relatively stable economic structure of a region cannot be separated from the increasing role of the construction and service sectors in driving the regional economy. Industry is an economic activity that consists of the activity of modifying a basic material mechanically and chemically, or by hand so that it becomes a piece of jewelry or a set of jewelry, or a material that has a slightly different value that can become a piece of jewelry whose quality is higher than its original value. and the appearance is more attractive to buyers. [11]

This research aims to determine whether the agricultural sector and industrial sector play a role or influence on poverty in South Sulawesi. Therefore, the choice of agricultural sector and industrial sector variables becomes the independent variable and poverty becomes the dependent variable.

2. Methodology

Types of research

The type of research used in this research is quantitative, the data used is time series panel data using evIEWS 10. This research took place in South Sulawesi Province in the period 2013-2022.

Operational definition

Operational definitions of variables are very important for research because they help researchers compile and create appropriate and accurate data measuring tools.

1. The agricultural sector is an important sector for the national economy, quality of life for the general public, employment opportunities and food welfare. The agricultural sector is the main milestone in the welfare and prosperity of society in Indonesia [19].
2. Industrial sector The term industry is generally associated with all human economic activities that convert raw materials such as wood or cement into finished, or finished goods. According to this definition, the industrial sector is usually called manufacturing. Thus, industrial development has a fairly broad meaning, namely covering all human activities in the economic field that are productive and commercial. The result of long-term economic activity is the diversity of industries in each country or region. In general, this means that the rate of industrial growth in a particular country or region is increasing, as are the number and variety of industries, as well as the complexity of related activities and businesses [18].
3. Poverty is identified with a low standard of living, which can be seen as one of the types where livelihoods are lacking in living needs or basic needs. The data above is proof that the characteristics of the affected areas can be seen from the condition of community welfare and the availability of facilities and infrastructure needed by the community in general [5].

Data Collection Techniques

This research uses collection techniques with documentation methods, namely collecting and processing data from the Central Statistics Agency (CSA) of South Sulawesi Province from 2013 to 2022. Apart from that, this research also uses library research, namely reading and collecting literature that is relevant to the research topic.

Data Analysis Techniques

The data analysis technique used in this research is descriptive analysis and multiple linear regression analysis with time series data which is used to determine the influence of the independent variables together on the dependent variable. The independent variables are the agricultural sector and the industrial sector, while the dependent variable is poverty in South Sulawesi Province.

a. Descriptive Analysis

Quantitative descriptive analysis is the data analysis method used in this research. Quantitative descriptive analysis is a data analysis method that uses numbers to draw conclusions and events that can be measured. This method conducts research without analyzing data and making generally accepted conclusions.

b. Multiple Linear Regression Analysis

Linear regression analysis is a linear relationship between two or more independent variables in the agricultural sector and industrial sector and the dependent variable poverty. The multiple linear regression model is written with the following equation:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e_i$$

Information :

Y = Poverty

X1 = Agricultural Sector

X2 = Industrial Sector

α = constant

β = Slope or Estimate Coefficient

a). Coefficient of Determination (R^2)

The coefficient of determination (R^2) is used to measure how well a model can explain variations in the dependent variable, where the R^2 value varies from $0 < R^2 < 1$. The higher the value of the coefficient of determination, the better the variance and independent variables can explain the dependent variable.

b). t test

This test tests the regression coefficient partially. This test is carried out to determine the significance of an independent variable on the dependent variable by using other variables that are considered constant. If the level is significant $t_{count} > t_{table} \alpha (0.05)$, then the independent variable influences the dependent variable individually. If the level is not significant $t_{count} < t_{table} \alpha (0.05)$, then the independent variable has no effect on the dependent variable individually.

c). F test

One way to carry out an F test is to compare the calculated F with the F table. If the calculated F is greater than the F table, (H_0 is rejected, H_a is accepted), then the model is significant or can be seen in the anova significance column.

3. Result and Discussion

There are three approaches to panel data regression, namely: Common Effect Model (CEM), Fixed Effect Model (FEM), Random Effect Model (REM). There are three tests to determine the best model to apply in panel data regression, namely: Chow Test, Hausman Test, and Langrange Multiple Test.

1. Selection of Panel Data Model

Table 1. Model Specification Test

Test	Probability	Significance	Decision
Chow	0,00	0,05	FEM
Hausman	0,16	0,05	REM
Langrange Multiple	0,00	0,05	REM

Source: Eviews 10 output, processed 2024

Based on the test results in table 1, the best model for analyzing the influence of the agricultural sector and the industrial sector on poverty in South Sulawesi for the 2013-2022 period is the Random Effect Model (REM) compared to the Common Effect and Fixed Effect Model (FEM).

Classic assumption test

Multicollinearity Test

The multicollinearity test is used to determine whether or not there is a relationship between the independent variables in one model. In this study, to detect multicollinearity by

testing high pairwise correlation coefficients between independent variables. With the criteria that if the coefficient value between the independent variables is above 0.85, it can be said that there is a multicollinearity problem. The following is the multicollinearity test in research:

Table 2. Multicollinearity Test

	X1	X2
X1	1,000,000	-0.519911
X2	-0.519911	1,000,000

Source: Eviews 10 output, processed 2024

The correlation coefficient X1 and X2 is $0.51 < 0.85$, so it is concluded that it is free or has passed the multicollinearity test.

Hypothesis test

1. Multiple Linear Regression

This regression analysis is used to determine the impact between the agricultural sector and the industrial sector on poverty in South Sulawesi. This analysis is needed to find deeper regressions.

Table 3. Multiple Linear Regression Test Results

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	20.90441	1.248044	16.74974	0.000
(X1)	-0.201609	0.045973	-4.385329	0.000
(X2)	0.00136	0.016677	0.08157	0.9352

Source: eviews 10 output, processed 2024

$$Y = 20,90 - 0,20(X1) + 0,00(X2)$$

So it is explained that:

1. Constant/alpha value = 20.90

This number is a constant/alpha number with a value of 20.90, meaning this value will remain constant if the independent variable does not change.

2. The BX1 coefficient value = -0.20, meaning that for every 1 percent increase in the agricultural sector, the poverty level will decrease by 0.20 percent.

3. BX2 coefficient value for the industrial sector = 0.00136, meaning that for every 1 percent increase in the industrial sector, poverty increases by 0.00136 percent.

Coefficient of Determination

Table 4. Determination Test Results

R Square	Adjusted R Square	Std. Error
0.18	0.16	0.048548

Source: eviews 10 output, processed 2024

Coefficient of determination analysis is used to calculate the proportion of influence of the independent variable on the dependent variable simultaneously. Based on the results of panel data regression analysis using the Random Effect Model (REM), the coefficient of determination (R^2) value was 0.164, which means that the influence of the agricultural sector and the industrial sector on poverty was 16.4 percent and the remaining 83.6 percent was influenced by other variables outside the research.

Statistical Testing

1. Test the Significance of Individual Parameters (t Test)

The t test is used to determine the effect of the independent variable on the dependent variable. The t test can be carried out to find the calculated t on the coefficient from the Eviews output. H_0 will be accepted if the calculated t value $>$ t table and H_a is rejected. Meanwhile, if the value of t is calculated $<$ t, the table is rejected. This means that there is an influence between the independent variable and the dependent variable.

Table 5. t test results

Variable	t-statistics	t-table	Prob	Information
X1	-4.385329	1.89458	0.0000	Significant Negative
X2	0.08157	1.89458	0.9352	Positive Not Significant

Source: Eviews 10 output, processed 2024

a. Agricultural Sector Variables

Based on table 4, the results show that the t-statistic value (4.385329) $>$ t-table (1.89458) and p-value (0.0000) $<$ $\alpha = 5$ percent, so it is explained that the agricultural sector variable has a negative and significant effect on poverty in South Sulawesi 2013- 2022.

b. Industrial Sector Variables

Based on table 3, the t-statistic value (0.08157) $<$ t-table (1.89458) and p-value (0.9352) $>$ $\alpha = 5$ percent are obtained, so it can be concluded that the industrial sector variable has a positive and insignificant effect on poverty in South Sulawesi 2013 -2022.

2. Simultaneous Significance Test (f Test)

The f test is a test used to determine the effect of the independent variables together on the dependent variable.

Table 6. Simultaneous Significance Test Results (f Test)

Df (k-1;n-k)	A	F-table	F-statistics	Prob
(2;7)	0,05	3.97	10.7194	0.000062

Source: Eviews Output 10, 2024

Table 4 shows that the F-statistic value (10.7194) $>$ (3.97) and p-value (0.000062) $<$ $\alpha = 5$ percent.

3.1. Result

Classic assumption test

Multicollinearity Test

The results of the correlation coefficient X1 and X2 is $0.51 < 0.85$, so it is concluded that it is free or has passed the multicollinearity test.

Hypothesis test

1. Multiple Linear Regression

results:

$$Y = 20.90 - 0.20(X1) + 0.00(X2)$$

So it is explained that:

1. Constant/alpha value = 20.90

This number is a constant/alpha number with a value of 20.90, meaning this value will remain constant if the independent variable does not change.

2. The BX1 coefficient value = -0.20, meaning that for every 1 percent increase in the agricultural sector, the poverty level will decrease by 0.20 percent.

3. BX2 coefficient value for the industrial sector = 0.00136, meaning that for every 1 percent increase in the industrial sector, poverty increases by 0.00136 percent.

Coefficient of Determination

Based on the results of panel data regression analysis using the Random Effect Model (REM), the coefficient of determination (R^2) value was 0.164, which means that the influence of the agricultural sector and the industrial sector on poverty was 16.4 percent and the remaining 83.6 percent was influenced by other variables outside the research.

Statistical Testing

1. Test the Significance of Individual Parameters (t Test)

a. Agricultural Sector Variables

The results show that the t-statistic value (4.385329) > t-table (1.89458) and p-value (0.0000) < $\alpha = 5$ percent, so it is explained that Agricultural sector variables have a negative and significant effect on poverty in South Sulawesi 2013-2022.

b. Industrial Sector Variables

The t-statistic value (0.08157) < t-table (1.89458) and p-value (0.9352) > $\alpha = 5$ percent are obtained, so it can be concluded that the industrial sector variable has a positive and insignificant effect on poverty in South Sulawesi 2013 -2022.

2. Simultaneous Significance Test (f Test)

F-statistic value (10.7194) > (3.97) and p-value (0.000062) < $\alpha = 5$ percent.

3.2. Discussion

Agricultural sector

Agricultural sector variables have a negative and significant effect on poverty in South Sulawesi. This shows that the more the agricultural sector increases, the lower the poverty rate in South Sulawesi. The results of this research are in line with the theory put forward by Cervantes and Dewbre (2010), and Jhamtani (2009); and Fan and Zhuang (2009), the development of the agricultural sector has an important influence on overcoming poverty and hunger [12].

This is based on the fact that the agricultural sector is the dominant sector capable of absorbing labor. The results of this research are in line with research [11] concluding that the agricultural sector has a negative and significant effect on poverty. The results of research [6] state that the agricultural sector has a significant effect on poverty. This research is not in line with research conducted [1] which states that the agricultural sector does not have a significant and negative effect on poverty.

Industrial sector

The industrial sector variable has a positive and insignificant effect on poverty in South Sulawesi. The results of this research are not in line with the theory first proposed by Paul Narcoz Rosenstein-Rodan. The Big Push Model emerged because it was based on large-scale investment plans and programs to accelerate the industrialization of countries in Eastern and Southeastern Europe. In developing countries, the Big Push theory is used to cut the chain of poverty, namely by large-scale investment patterns in the industrial sector. Over time, this theory was developed by Ragnar Nurkes, he stated that development must be carried out by developing all sectors simultaneously, in a balanced and equitable manner. This theory is also often known as the concept of balanced strategy development which can be interpreted as the rate of simultaneous and varied investment that is used to stimulate aggregate demand, in a complementary manner [15].

The results of this research are in line with research [1] that the industrial sector does not have a significant effect on poverty. The results of research [17] show that the industrial sector does not have a significant effect on poverty and in research [18] the industrial sector does not have a significant effect on poverty. This research is not in line with research [14] that the industrial sector has a significant influence on poverty variables and research [11] also states that the industrial sector has a positive and significant influence on poverty.

4. Conclusion

Based on the results and discussions that have been discussed regarding the role of the agricultural sector and the industrial sector on poverty in South Sulawesi, the researchers concluded that the agricultural sector has a significant effect on poverty and the industrial sector has an insignificant effect on poverty. R square is 0.164125 or 16.4 percent, while 83.6 percent is influenced by other variables outside the research.

5. Acknowledgement

Based on the results of the research and discussion, it is recommended to carry out further studies on the role or influence of the agricultural sector and the industrial sector, so that they can be maximized so that it is hoped that they can reduce poverty in South Sulawesi. For further research, it is recommended to use a relatively sensitive analysis model in order to obtain more accurate results by paying attention to the accuracy of the data used in relation to collecting research data and can be a form of reference for future researchers which will help in future writing.

For the government, to optimize and pay more attention to economic sectors that can influence poverty to improve the performance of the agricultural sector and industrial sector.

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