

## **FACTORS AFFECTING THE IMPROVEMENT OF THE ECONOMIC STATUS OF CORN FARMERS (CASE STUDY OF CORN FARMERS IN SUKA DAMAI VILLAGE, LAWE SIGALA-GALA DISTRICT, SOUTHEAST ACEH DISTRICT)**

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### **ABSTRACT**

This study aims to find out the factors that influence the increase in the economic status of corn farmers in Sukadamai Village, Lawe Sigala Gala District. The researchers' considerations for choosing this area are because Lawe Sigala Gala District is a corn production center with the second highest productivity after Lauser District, this study uses a Quantitative approach, in this study the total population is the entire Association of Farmers Group named Gapoktan Kembang Bersama, totaling 65 people, the sample used is a saturated sample where all the population is used as a sample. The data analysis technique used is multiple linear regression analysis. As for the results of this study, a constant value of 4,529 indicates the value of the independent variables consisting of Corn Production, Capital, Planning, Human Resources, and Technology. If there is a change, it will increase the economic status of the Sukadamai community by 45.29%. Partially the independent variables consisting of Technology, Human Resources, Planning, Corn Production, and Capital have a significant effect on the economic status of the Sukadamai community because the value of t count > t table and a significant level of <0.05. In the study, the independent variables consisting of Technology, Human Resources, Planning, Corn Production, and Capital had a significant effect on the economic status of the Sukapeace community, because the value of f count > f table (29,819 > 2.37) and a significant level of 0.000 <0.05. R Square value of 0.716 or 71.6% contribution of the variable Technology, HR, planning, Corn Production, and Capital to economic status while the remaining 23.4% is influenced by other factors not examined in this study.

**Keywords:** *Corn, Corn production, capital, planning, technology*

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### **INTRODUCTION**

The need for food is very basic for humans to be able to sustain life and for this reason, food for everyone at all times is a basic right that deserves to be fulfilled. Based on this fact, the problem of meeting food needs for all residents at any time in a region is the main target of food policy for a country's government (Junianto et al., 2019). The purpose of forming farmer groups is to further improve socio-economic status and develop the capabilities of farmers and their families as the subject of agricultural development through group emphasis to play a greater role in development. Farmer groups are a form of farmer association that functions as an extension medium that is expected to be more focused on changing farming activities for the better. Better farming activities can be seen from increases in farming productivity which in turn will increase farmers' income so that it will support an increase in the socio-economic status of corn farmers and can create better welfare for corn farmers and their families (Armelly et al., 2021).

Suka Damai Village, Lawe Sigala Gala District, Aceh Tenggara Regency, the majority are corn farmers as their livelihood. Suka Damai Village is very lucky because it has a large area of land for corn farming. The main problem faced by corn farmers is fluctuating production.

Production that has not been maximized affects the economy of farmers and the welfare of farmers, therefore to increase production this is carried out by farming through farmer groups as an effort to accelerate the target (Widiyanto, 2020). Farmers are many in number and spread across a wide area of the countryside, so in group coaching, it is hoped that horizons and insights together will emerge in solving and changing the image of present farming into bright future farming and remain strong. The purpose of forming farmer groups in Suka Damai Village is to improve social status and develop the capabilities of farmers and their families as subjects of agricultural development through a group approach so that they play a greater role in the welfare of the farmers themselves (Busyra, 2020).

This research focuses on the economic status of the Association of Farmers Groups named Gapoktan Kembang Bersama. because According to information from PPL, there are 2 farmer groups that are active and incorporated in the Gapoktan which contains corn farmers. Socio-economic status is the position occupied by an individual or family with respect to the generally accepted average size of cultural ownership, effective income, ownership of goods, and participation in group activities from their community (Farid et al., 2022a). the ability to meet the needs of daily life from the income or income earned so that it has a role in a person's social status in the structure of society. Socio-economic status is the level of prestige that a person has based on the position he holds in a society based on work to meet his needs or circumstances that describe the position or position of a family in society based on material possessions (Tanati et al., 2020). A person's socioeconomic status can be based on several elements of human interests in his life, status in community life, namely job status, status in the kinship system, position status, and status of the religion he adheres to (Triwahyuni, 2021).

Even though it has been established for a long time, the role of farmer groups in Sukadamai Village is still not evenly distributed, for example in one farmer group they are already independent in terms of production facilities and capital, but other farmer groups are still not independent, in fact, they often borrow capital from middlemen. Therefore, the functions and roles of farmer groups should be more intensively disseminated to all members. In this case, those who play a direct role in this matter are PPL, the Chairperson of the Joint Gapoktan, and all the heads of the farmer groups who are members of the Joint Gapoktan in Sukadamai Village.

## **METHOD**

This study used a quantitative approach. In this study, the total population was the entire Association of Farmers Groups named Gapoktan Kembang Bersama, totaling 65 people. The sample used was a saturated sample where all populations were sampled. The data source used in this study is multiple linear regression analysis using the formula

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e$$

Information:

Y = Increased Social Status

a = Constant

b = Regression Coefficient

X1 = Production

X2 = Capital

X3 = Planning

X4 = HR

X5 = Technology

e = Error In this hypothesis test is done through:

### **Determination Coefficient Test (R<sup>2</sup>)**

The coefficient of determination (R<sup>2</sup>) essentially measures how far the model's ability to explain the variation of the dependent variable (Ghozali, 2016).

### **Statistical Test F**

The F statistical test basically shows whether all the independent or independent variables included in the model have a joint effect on the dependent or dependent variable (Imam Ghozali, 2016).

### **Statistical Test t**

The t-statistical test basically shows how far the influence of one explanatory or independent variable individually explains the variation of the dependent variable (Imam Ghozali, 2016).

## **RESULTS AND DISCUSSION**

### **Normality test**

A more reliable method is to look at the normal probability plot which compares the cumulative distribution of the normal distribution. The normal distribution will form a diagonal line. If the residual data distribution is normal, then the points that describe the actual data will follow the diagonal line.

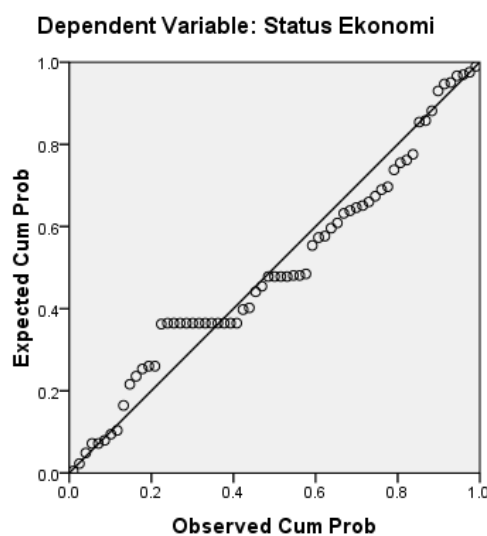


Figure 1. P-Plot of Normality

In this study the distribution of residual data is normal, because the points that describe the actual data will follow the diagonal line, the next test is by looking at the normality curve

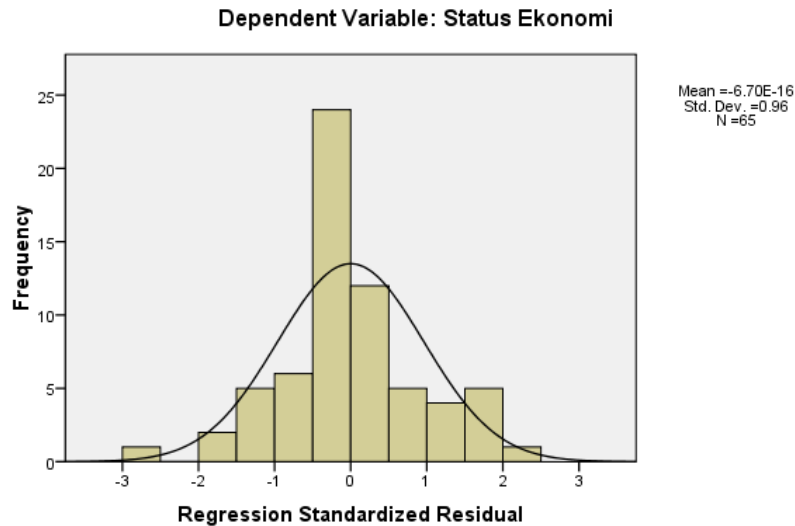


Figure 2 Normality Histogram

It can be seen that the normality histogram of the bell-shaped curve does not deviate to the left or right, meaning that in this study the data met the normality assumption. The residual normality test with a statistical analysis approach was carried out using the Kolmogorov Smirnov test (KS). The K-S test was carried out with a hypothesis.

**Tabel 1. One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		65
Normal Parameters <sup>a</sup>	Mean	.0000000
	Std. Deviation	1.96746965
Most Extreme Differences	Absolute	.096
	Positive	.082
	Negative	-.096
Kolmogorov-Smirnov Z		.921
Asymp. Sig. (2-tailed)		.365
a. Test distribution is Normal.		

Normality testing is done by looking at Asymp. Sig. (2-tailed). If the significance level is greater than 0.05, it can be concluded that the residual data is normally distributed. In this study, the Asymp. Sig. (2-tailed) of 0.365 means that in this study the data distribution is normal.

**Multicollinearity test**

This test is used to test whether a strong correlation is found in the regression model between the independent variables. The test conditions can be seen in the table below.

**Tabel 2. Coefficients<sup>a</sup>**

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Corn Production	.477	2.094
Capital	.477	2.094
Planning	.477	2.094
HR	.484	2.068
Technology	.414	2.742

a. Dependent Variable: Economic Status

Table 2 shows that in this study the distribution of data does not occur multicollinearity because the Corn Production variable has a Tolerance value of 0.477 and VIF 2.094, the Capital Variable has a Tolerance value of 0.477 and VIF 2.094, the Planning variable has a Tolerance value of 0.477 and VIF 2.094, the HR variable has a Tolerance value of 0.484 and VIF 2,068 and the Technology variable, the Tolerance value is 0,414 and the VIF value is 2,742, all variables show that the Tolerance value is > 0.10 and VIF < 10.

**Heterodecacity Test**

Heteroscedasticity is used to test whether in the regression model there is an unequal variance of the residuals from another observation

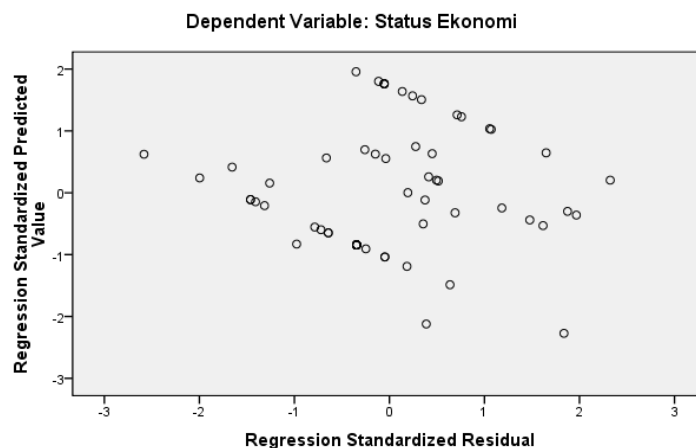


Figure 3 Scatterplots

The picture above has shown that the points spread randomly, do not form a clear regular pattern, and are spread both above and below the number 0 on the Y axis. Thus "no heteroscedasticity occurs" in the regression table

### Multiple Linear Regression Analysis

Multiple linear regression analysis is used to determine the effect of the independent variables on the dependent variable. So, multiple regression analysis will be carried out if the number of independent variables is at least two (Sugiyono.2018). The multiple linear regression equation can be formulated as follows:

$$Y = a + \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + e$$

**Tabel 4. Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	4.529	2.982			4.178	.000
Corn Production	.256	.295	.041		3.190	.007
Capital	.227	.215	.140		3.593	.005
Planning	.277	.199	.080		3.389	.005
HR	.669	.133	.501		5.021	.000
Technology	.288	.268	.373		2.821	.015

a. Dependent Variable: Economic Status

From the table above, the equation can be drawn

$$Y = 4.529 + 0.256 X_1 + 0.227X_2 + 0.277X_3 + 0.669X_4 + 0.288X_5 + e$$

1. A constant value of 4,529 indicates the value of the independent variables consisting of Corn Production, Capital, planning, HR and Technology, if there is a change it will raise the economic status of the Sukadamai community by 45.29%
2. The value of the regression coefficient for corn production is 0.256, meaning that if corn production increases by 1%, it will increase the economic status of the community by 2.56%.
3. The value of the Capital regression coefficient is 0.227 meaning that if capital increases by 1% it will increase the economic status of the community by 2.27%.
4. The value of the planning regression coefficient is 0.277, meaning that if planning increases by 1%, it will increase the economic status of the community by 2.77%.
5. The value of the HR regression coefficient is 0.669 meaning that if the HR capability increases by 1%, it will increase the economic status of the community by 6.99%.

- The value of the technology regression coefficient is 0.288, meaning that if agricultural technology increases by 1%, it will increase the economic status of the community by 6.99%.

## Hypothesis testing

### *t*-test

The t-statistical test basically shows how far the influence of one explanatory or independent variable individually explains the variation of the dependent variable, in this study the test criteria are

- If the value of  $t$  arithmetic  $>$   $t$  table then there is influence between the independent variables consisting of Corn Production, Capital, planning, Human Resources and Technology on the economic status of the community
- If the value of  $t$  count  $<$   $t$  table then there is no influence between the independent variables consisting of Corn Production, Capital, Planning, Human Resources and Technology on the economic status of the people
- If the significant level value is  $<0.05$  then there is a significant relationship between the independent variables consisting of Corn Production, Capital, Planning, Human Resources and Technology on the economic status of the community
- If the significant level value is  $> 0.05$  then there is no significant relationship between the independent variables consisting of Corn Production, Capital, Planning, Human Resources, and Technology on the economic status of the community

With a sample size of 65 and a significant level of 0.05 and  $df = n-5$  ( $65-5=60$ ) a  $t$  table value of 2,000 is obtained

**Tabel 5. Coefficients<sup>a</sup>**

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.529	2.982		4.178	.000
	Corn Production	.256	.295	.041	3.190	.007
	Capital	.227	.215	.140	3.593	.005
	Planning	.277	.199	.080	3.389	.005
	HR	.669	.133	.501	5.021	.000
	Technology	.288	.268	.373	2.821	.015

a. Dependent Variable: Economic Status

- In table 4, it can be seen that the  $t$  value for the variable corn production is 3,190 and a significance level of 0.007. This shows that in this study, partially corn production

affects the economic status of the villagers of Sukadamai because the value of t count > t table (3,190 > 2,000) and a significant level of 0.007 < 0.05

2. In Table 4, it can be seen that the t value for the capital variable is 3,593 and a significance level of 0.005, this shows that in this study capital partially affects the economic status of the residents of the Sukapeace village because the t count > t table (3,593 > 2,000) and the level significant 0.005 < 0.05.
3. In Table 4, it can be seen that the t-value for the planning variable is 3,389 and the significance level is 0.005. This shows that in this study, planning partially affects the economic status of the residents of Sukapeace village because of the t count > t table (3,389 > 2,000) and the level significant 0.005 < 0.05.
4. In Table 4, it can be seen that the t-value for the HR variable is 5,021 and the significance level is 0,000. This shows that in this study, human resources partially affect the economic status of the Sukapeace villagers because the t count > t table (5,021 > 2,000) and the level significant 0.000 < 0.05.
5. In table 4, it can be seen that the t value for the technology variable is 2,821 and a significance level of 0.015, this shows that in this study technology partially affects the economic status of the Sukapeace villagers because the t count > t table (2,821 > 2,000) and the level significant 0.015 < 0.05.

#### ***F test***

The F statistical test basically shows how far the influence of one explanatory or independent variable simultaneously explains the variation of the dependent variable, in this study the test criteria are

1. If the value of f count > f table then there is influence between the independent variables consisting of Corn Production, Capital, planning, Human Resources and Technology on the economic status of the community
2. If the value of f count < f table then there is no influence between the independent variables consisting of Corn Production, Capital, Planning, Human Resources and Technology on the economic status of the people
3. If the significant level value is < 0.05 then there is a significant relationship between the independent variables consisting of Corn Production, Capital, Planning, Human Resources, and Technology on the economic status of the community
4. If the significant level value is > 0.05 then there is no significant relationship between the independent variables consisting of Corn Production, Capital, Planning, Human Resources, and Technology on the economic status of the community

With a sample size of 65 and a significant level of 0.05 and df = n-5 (65-5=60) an f table value of 2.37 is obtained

**Table 6. ANOVA<sup>b</sup>**

	<b>Model</b>	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	401.382	5	80.276	29.819	.000 <sup>a</sup>
	Residual	158.833	59	2.692		
	Total	560.215	64			

a. Predictors: (Constant), Technology, HR, planning, Corn Production, Capital  
 b. Dependent Variable: Economic Status

Table 5 shows that the f count in this study is 29,819, while the significant level is 0,000, meaning that in the study the independent variables consist of Technology, Human Resources, Planning, Corn Production, Capital have a significant effect on the economic status of the Sukapeace community, because the value of f count > f table (29,819 > 2.37) and a significant level of 0.000 < 0.05

**Coefficient of Determination**

The coefficient of determination (R<sup>2</sup>) essentially measures how far the model's ability to explain variations in the dependent variable (Ghozali, 2016). The value of the coefficient of determination is between 0 (zero) and 1 (one). The small R<sup>2</sup> value means that the ability of the independent variables to explain the variation in the dependent variable is very limited. A value close to one means that the independent variables provide almost all the information needed to predict variations in the dependent variable (Ghozali, 2016).

**Table 7. Model Summary<sup>b</sup>**

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1	.846 <sup>a</sup>	.716	.692	1.64076

a. Predictors: (Constant), Technology, HR, planning, Corn Production, Capital  
 b. Dependent Variable: Economic Status

Table 7 shows the R Square value of 0.716 or 71.6% contribution of the variables Technology, HR, planning, Corn Production, and Capital to economic status while the remaining 23.4% is influenced by other factors not examined in this study.

Based on the results of this study all research variables affect economic status, so that the hypothesis can be accepted while a more detailed explanation will be discussed below.

**Effect of Production on Economic Status**

In this study, partially corn production affects the economic status of the villagers of Sukadamai because the value of t count > t table (3,190 > 2,000) and a significant level of

0.007 < 0.05, Harvested area is a factor that can affect the level of availability or level of production of a good. If the area of a harvested area cannot meet the production of a good, then the goods produced cannot meet the number of requests demanded by the community. So the harvested area is one of the main factors in fulfilling the production of an item offered. To meet the needs of human life, land is one of the things that supports human survival besides that land is also used as a place for humans to live. The land is a natural resource combined with soil, rainfall, and existing vegetation. In economics and agriculture, land includes all the natural resources that can be utilized below or above the surface of a geographic area. In everyday language, people equate land with land. In reality, land is not always land, because it includes ponds, swamps, lakes, or even oceans. In accordance with its boundaries, the mineral content below the land surface or the location of the geostationary orbit above the land surface is also part of the land and this determines its economic value (Farid et al., 2022b).

### **Effect of Capital on Production Status**

In this study, capital partially affects the economic status of the villagers of Sukadamai because of the t count > t table (3,593 > 2,000) and a significant level of 0.005 < 0.05. Capital can be interpreted physically and not physically. In the physical sense, capital is defined as everything attached to the intended production factors, such as production machines and equipment, vehicles, and buildings. Capital can also be in the form of funds to buy all variable inputs to be used in the production process to produce industrial output. The definition of venture capital is something used to set up or run a business. This capital can be in the form of money and labor (expertise). Money capital is usually used to finance various business needs, such as pre-investment costs, obtaining permits, investment costs to buy assets, to working capital. Meanwhile, expertise capital is a person's expertise in running a business (Jufrizen et al., 2019).

### **The Influence of Planning on Economic Status**

In this study, planning partially affects the economic status of the Sukadamai villagers because the value of t count > t table (3,389 > 2,000) and a significant level of 0.005 < 0.05. Basically, planning is a management function related to the selection of various alternative courses of action, and the formulation of policies. Planning is a series of actions to achieve a desired result. According to Bamen & Snell, planning (planning) is the process of setting goals to be achieved and deciding the appropriate actions needed to achieve goals (Ginting et al., 2019). According to Suandy "Planning in general is the process of determining the goals of the organization (company) and then presenting (articulating) clearly the strategies (programs), tactics (procedures for program implementation) and operations (actions) needed to achieve overall company goals. thoroughly" (Yunasfi et al., 2021).

### **Effect of HR on Economic Status**

In this study, human resources partially affect the economic status of the villagers of Sukadamai because of the value of t count > t table (5.021 > 2.000) and a significant level of 0.000 < 0.05. Humans are an important component in the organization that will move and carry out activities to achieve goals. The success of an organization is determined by the quality of the people in it. Human resources will work optimally if the organization can support their

career advancement by looking at what their competencies really are. Usually, competency-based HR development will increase employee productivity so that the quality of work is also higher and leads to customer satisfaction and the organization will benefit. Human Resources can be defined as all human beings who are involved in an organization in striving for the realization of the goals of the organization (Enny, 2019).

Nawawi divides the understanding of HR into two, namely the understanding of macro and micro. The definition of HR in a macro sense is all human beings as residents or citizens of a country or within certain regional boundaries who have entered the age of the workforce, both those who have or have not obtained jobs (employment). The definition of HR in a simple micro sense is humans or people who work or become a member of an organization called personnel, employees, employees, workers, labor, and others (Fahmi, 2016).

### **The Influence of Technology on Economic Status**

In this study, technology partially affects the economic status of the villagers of Sukadamai because of the  $t$  count  $>$   $t$  table ( $2,821 > 2,000$ ) and a significant level of  $0.015 < 0.05$ . Agriculture as a subsystem in human life aims to produce vegetable and animal materials including aquatic (aquatic) biota by using natural resources and waters effectively and efficiently in order to achieve human welfare and the sustainability of the carrying capacity of the environment. The formal object of the science of reproductive cultivation agriculture in focus 1) cultivation; 2) maintenance; 3) collection of products from fauna and flora; 4) increasing the quality of the yields obtained; 5) handling, processing, and securing the produce; and 6) marketing results. Therefore, the broad scope of agricultural technology includes various applications of technical knowledge in the scope of formal objects, from cultivation to marketing.

Agricultural technology has a meaning as the application of technical knowledge to agricultural activities. From a scientific point of view, agricultural technology can be described as an application of the principles of mathematics and natural science in the context of economically cultivating crops for agricultural resources and natural resources for the benefit of human welfare. According to Mangunwijaya and Sailah (2005), agriculture as a subsystem in human life aims to produce vegetable and animal materials with the maximum use of natural resources in order to achieve human welfare and preserve the carrying capacity of the environment. The formal object of reproductive aquaculture in focus: Land preparation-Cultivation-Maintenance-Collection of yields from cultivation-Increasing the quality of yields-Handling (post-harvest)-Marketing of results Therefore, the broad scope of agricultural technology includes various applications of engineering science on the scope of formal objects from cultivation to marketing of crops.

### **CONCLUSION**

A constant value of 4,529 indicates the value of the independent variables consisting of Corn Production, Capital, planning, HR, and Technology, if there is a change it will raise the economic status of the Sukadamai community by 45.29%. Partially the independent variables consisting of Technology, HR, planning, Corn Production, and Capital have a significant effect on the economic status of the Sukadamai community because the  $t$  count  $>$   $t$  table and a significant level of  $<0.05$

In the study, the independent variables consisting of Technology, Human Resources, Planning, Corn Production, and Capital have a significant effect on the economic status of the Sukadamai community because the value of  $f$  count  $>$   $f$  table ( $29,819 > 2.37$ ) and a significant level of  $0.000 < 0.05$ . The R Square value is 0.716 or 71.6% contribution of the variables Technology, HR, planning, Corn Production, and Capital to economic status while the remaining 23.4% is influenced by other factors not examined in this study.

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