

## The Influence of Rice Field Area, Agricultural Labor, and Government Expenditure in the Agricultural Sector on Economic Growth in East Java Province



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**ABSTRACT:** A significant portion of East Java Province's economic growth is attributed to the agricultural sector. The area of rice fields and the number of agricultural workers in East Java Province are the highest in Indonesia, but government expenditure on the agricultural sector is still relatively small. This study aims to ascertain the influence of rice field area, agricultural labor, and government expenditure in the agricultural sector on economic growth in East Java Province. This study employs a quantitative methodology and uses secondary data from 2010 to 2021. Multiple linear regression analysis using the Eviews 12 program is the method employed. The research results indicate that while the variable of rice field area has no influence on economic growth in the province of East Java, the variables of agricultural labor and government expenditure in the agricultural sector do.

**KEYWORDS:** Agricultural Sector, Economic Growth, and Eviews

### INTRODUCTION

Economic growth in an area occurs if the GRDP growth rate is based on constant price increases (Widiyanto & Arianti, 2022). The sectors that form the economic structure of East Java Province include the agricultural sector. This can be seen from its contribution to food security, improving people's living standards, and is a source of regional income. As one of the largest contributors to GRDP, the success of the agricultural sector can be influenced by several factors such as land area, workforce, government spending, production value, technology, irrigation channels, and so on.

Rice fields as agricultural land have various economic values, including functioning as producers of community food commodities, providers of raw materials for other economic sectors, absorbing employment opportunities in the production and trade processes; and have environmental services such as flood mitigation, erosion mitigation and water absorption. The multifunctional benefits of rice fields are not only beneficial for farmers but also beneficial for the general public and other economic sectors.

Indonesia as an agricultural country makes the agricultural sector has a big influence on labor recruitment. In 2018- 2021, East Java province occupied first position with the largest number of agricultural workers in Indonesia. For comparison, in 2021, the average province in Indonesia had an agricultural workforce of 1.17 million people, while the province of East Java had an agricultural workforce of 6.66 million people.

In developing the agricultural sector, the role of government expenditure is also needed. To achieve optimal and stable agricultural sector performance, financing is needed for the development and management of everything related to the agricultural sector. However, government expenditure in the agricultural sector is very small when compared with the total expenditure of the East Java Provincial government. The relatively small budget allocation for the agricultural sector of East Java Province means that government programs related to the agricultural sector are limited.

Even though East Java province has the greatest concentration of rice fields and agricultural labor in all of Indonesia, these two factors will not be able to function as best they can if government intervention through government expenditure is not provided. Apart from being one of the largest contributors to GRDP, the agricultural sector also functions as a contributor to food security at both the provincial and national levels, and can also be used as a tool to protect the environment. Apart from that, the development of the agricultural sector also has enormous opportunities amidst the increasing world population which increasingly requires food commodities and employment opportunities. Therefore, this study will discuss the influence of rice field area, agricultural labor, and government expenditure in the agricultural sector on economic growth in East Java Province.

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## LITERATURE REVIEW

### 1. Growth Economy

Boediono (2019) explains that an economy is said to experience economic growth if the amount of GDP at constant prices increases. Meanwhile, according to Rai (2022), a country is said to be experiencing economic growth if the country's GDP increases every year according to the base year. To measure economic growth it is necessary to use GDP for country coverage; as well as Gross Regional Domestic Product (GRDP) for provincial and district/city coverage (Adila & Utomo, 2023). Economic growth functions as an indicator to describe economic progress or success in a country. Economic growth can be determined by comparing the GRDP in a particular year with the GRDP in the previous year (Sukirno, 2016).

### 2. Agricultural Land

The theory of land market explains how the productivity of the land determines the price at which agricultural land is rented or sold (Rahardja & Manurung, 2019). Because farmers and landowners perform distinct roles, farmers will bid for land rent based on how profitable the land is, and they will share their profits with the landowner through rental payments (Alonso, 2017). Both the land's fertility and its distance from the hub of economic activity affect a piece of land's value (Sumargo, 2002). Sudrajat (2015) explains that rice fields are types of land that are typically used for planting rice or secondary crops in rotation. They have a flat surface, require standing water to be used, and are bounded by embankments to prevent flooding.

### 3. Labor

Workers are every individual who is working or looking for work and has the ability to work and fulfill statutory requirements (Latumaerissa, 2015). The labor force is the number of people who work and do not work (Mankiw et al., 2013). Labor demand is related to the number of workers needed by a particular company or agency (Bustam, 2016). According to Rahardja & Manurung (2019) in a perfect labor market, sellers (owners of production factors or labor) and buyers (companies) cannot influence market prices.

### 4. Government Expenditure

Sadono Sukirno (2016) explains that government expenditure is a fiscal policy that is useful for regulating the economy for the benefit of society by regulating the amount of government income and expenditure. Meanwhile, according to Mangkoesoebroto (2014), government expenditure is a policy regarding financing issued by the government to purchase goods and services. Government expenditure policies can directly encourage economic growth through spending on goods and services for the development of economic and social infrastructure (Zahari, 2017).

## RESEARCH METHODS

The population of this study consists of Economic Growth, Rice Field Area, Agricultural Labor, and Government Expenditure in the Agricultural Sector in East Java. By using secondary data in the period 2010-2021, this research uses a quantitative methodology. Multiple linear regression analysis is done with the Eviews 12 program. The following is the formula for the multiple linear regression equation:

$$PE = \alpha + \beta_1 LLS + \beta_2 TKP + \beta_3 PPSP + \mu$$

Keterangan :

PE	= Economic Growth
$\alpha$	= Constant
LLS	= Rice Field Area
TKP	= Agricultural Labor
PPSP	= Government Expenditure in the Agricultural Sector
$\beta_1$	= Coefficient of Rice Field Area
$\beta_2$	= Coefficient of Agricultural Labor
$\beta_3$	= Coefficient of Government Expenditure in the Agricultural Sector
$\mu$	= Error / Residual

## RESULTS

The outcomes of the test are as follows:

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**Table 1. Multiple Regression Analysis**

Variable	Coefficient
C	-45.29593
LLS	1.52E-05
TKP	3.30E-06
PPSP	1.43E-05

The outcomes of the regression equation obtained are as follows:

$$PE (Y) = -45.29593 + 1.52LLS + 3.30TKP + 1.43PPSP + e$$

a. Constant ( $\alpha$ )= -45.29593

This means that if the area of rice fields ( $X_1$ ), agricultural labor ( $X_2$ ), and government expenditure in the agricultural sector ( $X_3$ ) are considered constant, then economic growth (Y) will decrease by -45.29593

b. Coefficient of Rice Field Area ( $\beta_1$ ) = 1.52

This means that the area of rice fields has a positive effect on economic growth. That is, every time there is an increase in the Rice Field Area variable ( $X_1$ ) by 1 unit, Economic Growth will increase by 1.52 percent assuming that  $X_2$  and  $X_3$  are constant.

c. Coefficient of Agricultural Labor ( $\beta_2$ ) = 3.30

This means that agricultural labor has a positive effect on economic growth. That is, every time there is an increase in the Agricultural Labor variable ( $X_2$ ) by 1 unit, Economic Growth will increase by 3.30 percent assuming that  $X_1$  and  $X_3$  are constant.

d. Coefficient of Government Expenditure in the Agricultural Sector ( $\beta_3$ ) = 1.43

This means that government expenditure in the agricultural sector has a positive effect on economic growth. That is, every time there is an increase in the Agricultural Sector Government Expenditure variable ( $X_3$ ) by 1 unit, Economic Growth will increase by 1.43 percent assuming  $X_1$  and  $X_2$  are constant.

**Table 2. Determination Coefficient Results**

R-squared	0.834653
Adjusted R-squared	0.772647

The Coefficient of Determination ( $R^2$ ) value is 0.7726. This indicates a 77.26% explanation of the economic growth variable by the independent variables. Other factors not included in this study account for the remaining 22.74%.

**Table 3. F Test Results**

F-statistic	13.46099
Prob(F-statistic)	0.001713

The prob value (F-statistic) which is 0.001713 < 0.05, indicates the F test results. It means that the area of rice fields ( $X_1$ ), agricultural labor ( $X_2$ ), and government expenditure in the agricultural sector ( $X_3$ ) have a significant effect simultaneously on Economy Growth (Y).

**Table 4. t Test Results**

Variable	t-Statistic	Prob.
C	-3.027888	0.0164
LLS	2.297343	0.0507
TKP	3.064139	0.0155
PPSP	6.171869	0.0003

The probability value of the variable displays the t test results, if it is smaller than 0.05 then the variable is declared to have a significant effect (Ghozali, 2020). Table 4 shows that the variable paddy field area ( $X_1$ ) partially has no significant effect on economic growth, while the variable agricultural labor ( $X_2$ ) and government expenditure in the agricultural sector ( $X_3$ ) partially has a significant effect on economic growth in East Java Province

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## **DISCUSSION**

### **The Influence of Rice Field Area on Economic Growth**

The East Java Province's Economic Growth is not positively and significantly influenced by the rice field area variable. The variable rice field area has no influence on economic growth in East Java Province. This is due to the increasing conversion of agricultural land due to the development of industry, housing, and infrastructure which is then used for settlements, factories, toll roads, and so on. This study is consistent with that of Rizqi (2018) who claims that since the area of agricultural land is shrinking because of land conversion for development outside the agricultural sector, the area of rice fields has no bearing on the gross domestic product (GRDP), a measure of economic growth.

Apart from that, there are still many idle lands that need to be improved in their physical and chemical conditions which are still spread across several areas. Efforts to utilize unused land for agricultural land need to be made to overcome the problem of food security and the natural crisis (Alfian, Darmawan, 2018). However, apart from that, the government and society also need to innovate together in the production and management process so that they can continue to carry out agricultural activities optimally even though agricultural land is decreasing (Dewantoro, 2021).

### **The Influence of Agricultural Labor on Economic Growth**

The East Java Province's Economic Growth is positively and significantly influenced by the Agricultural Labor variable. Sukirno (2016) explains that population growth can either support or impede economic growth. An increasing population will increase the number of workers, and this increase will allow the country to increase production. In short, every production activity carried out will certainly require labor (Budihardjo et al., 2020).

East Java Province has the highest number of agricultural workers in Indonesia. This large amount will be very useful in the production process and processing of agricultural products. Bearing in mind that agricultural products not only function as staple household food but can also be used as raw materials by other economic sectors. Moreover, amidst the increasing population in Indonesia, which increasingly requires food commodities, increasing agricultural labor can help the agricultural sector meet market needs and improve the economy for local communities, and encourage regional economic growth.

These results are in line with Yunita & Sri Ulfa's (2019) research findings which stated that increasing the number of workers is one of the supporting factors for economic growth, so increasing the number of workers will contribute to faster economic growth.

### **The Influence of Government Expenditure in the Agricultural Sector on Economic Growth**

The East Java Province's Economic Growth is positively and significantly influenced by the government expenditure in the agricultural sector variable. Mangkoesobroto (2014) stated that government expenditure will always be needed in the economic growth stage. This is because increased government expenditure will stimulate local economic growth and activity.

East Java Province is a part of a developing nation, and the private sector's ability to support economic growth is still insufficiently strong and stable. As a result, government expenditure is allocated in order to prevent market failure (Sayifullah & Emmalian, 2018). In order to achieve efficiency, the government must actually constantly strive to prevent and address market failures. Government expenditure in the agricultural sector can be used for various purposes such as financing economic activities, services, and extension, as well as helping to provide infrastructure and public transportation for the mobility of farmers and other agricultural business actors in carrying out economic activities which will then also spur regional economic growth. According to research by Kaharudin et al., (2019) states that the effective use of government expenditure to carry out productive activities will help support increased economic growth.

## **CONCLUSION**

The research results indicate that the area of rice fields, agricultural labor, and government expenditure in the agricultural sector have a simultaneous influence on economic growth in East Java province. Then, according to partial test results, it has been determined that the area of rice fields has no influence on economic growth, while agricultural labor and government expenditure in the agricultural sector have a positive and significant influence on economic growth in East Java province. As well as the influence of rice field area, agricultural labor, and government expenditure in the agricultural sector on economic growth of 77.26%.

## **SUGGESTION**

It is hoped that the government can increase government expenditure for the agricultural sector which can then be allocated to improve the quality and welfare of agricultural sector workers through efforts to improve wage levels, provide extension services,

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help with fertilizers and pesticides, and improve transportation facilities. Apart from that, there is also a need to increase efforts to implement policies related to the protection of Protected Rice Land (Lahan Sawah Dilindungi) as well as the restoration and management of abandoned idle land.

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