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Determinant Analysis of Corn Production in Lengkiti District, Ogan Komering Ulu Regency

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A B S T R A C T

The purpose of this research was to find out the factors that affect corn production and the economic efficiency of corn farming in Lengkiti District, Ogan Komering Ulu Regency. This research was located in Bandar Jaya Village, Fajar Jaya, Karang Endah, Pagar Dewa and Umpam Lengkiti District, Ogan Komering Ulu Regency. Respondent farmers are corn farmers in Bandar Jaya, Fajar Jaya, Karang Endah, Pagar Dewa, and Umpam villages selected by a simple random sampling method of as many as 135 people. The factors of production are analyzed by the Cobb-Douglas equation method which is processed into multiple linear regressions with SPSS applications where the dependent variables are y as production and the variables and free or independent variables are X1 land area, X2 Seedlings, X3 Fertilizers, and X4 Labor for the efficiency of corn Farming Economy are analyzed with technical efficiency and price efficiency data processed with frontier applications. The results showed that the factors of seed production, fertilizer, and labor had a simultaneous effect on corn production, while partially variables of land area and fertilizer production facilities had a significant effect on corn production in Bandar Jaya, Fajar Jaya, Karang Endah, Pagar Dewa, and Umpam villages. The results of the technical efficiency analysis showed that the efficient means of 0.10 is said to be inefficient in the use of factors because it is much close to 1. The price efficiency of corn farming, which is 7.438 shows that corn farming in Bandar Jaya, Fajar Jaya, Karang Endah, Pagar Dewa, and Umpam villages is not priced efficient. As for the economic efficiency of corn farming in Bandar Jaya, Fajar Jaya, Pagar Dewa, Karang Endah, and Umpam villages, which amounted to 0.7438 this shows that corn farming is not economically efficient.

1. INTRODUCTION

1.1. Research Background

Corn is the second source of carbohydrate commodities after rice which is a staple food in Indonesia besides that corn can also be used as a raw material for animal feed, industrial raw materials, and also various other kinds. Corn is also the main horticulture commodity in Indonesia, judging from the aspect of entrepreneurship and the use of its results, namely as food and feed raw materials. This makes the need for corn continue to increase as the demand for food raw materials increases[1]. Indonesia's agricultural development journey until now has not been able to show maximum results if you look at the level of welfare of farmers and their contribution to national income [2].

South Sumatra has 17 regencies/cities, each of which has an area for corn farming business. In Ogan Komering Ulu Regency, the corn production area amounted to 12,321 ha with a production of 67,766 tons in 2018 Ogan Komering Ulu Agricultural Office 2021.

Based on a review at the Central Statistics Agency of South Sumatra in 2020, corn commodities experienced a fairly high increase in harvest area of 152,265 hectares. This proves that the agricultural area for corn is increasing every year, and the demand for corn is always there every year.

Lengkiti district has the highest harvest and production area. The development of the corn farming sector in South Sumatra province, especially in the Ogan Komering Ulu area of Lengkiti Subdistrict, is the development of traditional plantation crop commodities that have strategic opportunities in the plantation business system both economically and socially.

Based on the potential of natural resources in Lengkiti District, Ogan Komering Ulu Regency above which supports corn plantation activities that have the potential to be developed, the development of production results and a high enough land area in the Lengkiti District area of Ogan Komering Ulu Regency becomes the scope of research based on the goals to be achieved.

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Based on data from the Ogan Komering Ulu Regency Agricultural Office [3], corn productivity in Ogan Komering Ulu Regency is 5.5 tons/hectare. When developed and utilized technology and the use of quality seeds. Productivity is influenced by a combination of many factors including land area, fertilizer, and use of plant seeds. The area of land planted, will affect the number of plants that can be planted.

According to the Maros Sulawesi Cereal Food Crop Research Center [4], corn productivity can reach 6.08-7.03 tons/ha. This is when compared to corn productivity in Ogan Komering Ulu Regency which is only 5.5 tons/ha. Various efforts have been made through agricultural intensification and extensibility programs. In supporting corn farming productivity in Ogan Komering Ulu Regency, the Ogan Komering Ulu Regency Government assists in the form of seeds aimed at increasing farmers' income efficiency. Data from the Ogan Komering Ulu District Agricultural Office for seed assistance in 2020 was 51,600 kg with a land area of 3,440 Ha, spread across several sub-districts in Ogan Komering Ulu Regency. The corn seed assistance program in Ogan Komering Ulu Regency has been running for the past 5 years, both in the form of assistance from the State Revenue and Expenditure Budget and the local Regional Revenue and Expenditure Budget, this seed assistance is enough to have an impact on farmers' productivity, especially in areas that receive seed assistance can be seen in table 1 which is above productivity is increasing every year both from 2015 to 2020.

1.2. Research objective

This research focuses on what factors influence corn production in Lengkiti District, Ogan Komering Ulu Regency, and the Efficiency test is used to see whether corn farming is efficient or not. Efficiency tests include technical efficiency, price efficiency, and economic efficiency.

1.3. Literature Review

1.3.1. Corn Farming

According to Sarasutha [1], corn farming carried out by farmers is a business manager that considers the ability of the resources they master (resources endowment) which includes land, labor, capital, and time. The goal is to produce products to meet the family's food needs and obtain cash income to finance their daily needs.

In addition, agricultural science is usually interpreted as a science that studies how a person allocates existing resources effectively and efficiently to obtain high profits at a certain time. It can be said to be effective when farmers can allocate the resources they have (controlled) as well as possible, and it is said to be efficient when the utilization of these resources produces output (output). In terms of development, the most important thing about farming is that farming should always change, both in size and in its composition, to take advantage of the period of agricultural business that is always developing more efficiently [5]

1.3.2. Corn Farming Production

In general, we interpret production as the transformation of inputs (goods purchased by companies) into output (goods sold). According to Karmini[6], production is the activity of utilizing /allocation of factors of production to increase the usefulness or produce goods and or services to meet human needs.

So it can be said that production is any business that creates or enlarges the usefulness of goods, then production of course cannot be done if there are no materials (inputs) that allow the production process itself.

1.3.3. Factors of Corn Farming

Soekartawi [5] said that the factors that affect production can be 2 groups, namely, 1) Biological factors, such as agricultural land with its variety and fertility rate, seeds, varieties, fertilizers, medicines, pests, and so on; 2) Socio-economic factors, such as production costs, prices, labor, education level, income level, risk and uncertainty, institutional, availability of credit and so on.

According to Ref. [6] Production factors (inputs) consist of 2 groups based on changes in production levels, namely: 1) Fixed input is a production factor whose amount cannot be changed quickly if the market conditions require changes in production levels such as machinery and buildings. A factor of production includes a fixed factor of production if the user is unable to control/regulate or change the rate of use during the production period. For example, agricultural land for a farmer is a fixed factor of production; 2) Variable input factors are production factors whose amount can be changed in a relatively short time according to the amount of product produced such as labor and raw materials. A factor of production includes variable production factors if the user can control/regulate or change the level of use. For example, farmers can regulate the amount of fertilizer distributed on their farmland.

1.3.4. Production Function

Production results (output) produced by producers, among others, are influenced by the number of production factors (inputs) used [6]. The physical relationship between input and output is called the input-output relationship (FR). Beattie and Taylor [5] define the function of production as a mathematical or quantitative description of the various possibilities of technical production faced by a company.

According to Ref. [5], the function of production is the physical relationship between the variable described (dependent variable) or y and the variable that describes (independent variable) or x. The variable described is usually an output and the variable that describes it is usually input. Mathematically the relationship can be written as follows:

$$y = f(x) \quad (1)$$

where:

y = production output (output);

x = the number of production factors (inputs) used.

Most production processes require several factors of production, so the function of production becomes:

$$y = f(X1, X2, X3, X4, \ldots, Xn) \quad (2)$$

where:

y = production result/production rate or number of products produced (output), is the variable described / variable affected by production factors;

X1,X2,X3,…..Xn = the number of uses of production factors (inputs), is a variable that describes / variables that affect y.

According to Ref.[5] the function of production is the technical relationship between the described variable (Y) and the variable that describes (X). The variables described are

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commonly called output variables and variables that describe are commonly called input variables. The function of production is a mathematical statement which means the level of production of a good and or service depending on the number of factors of production used (land, labor, capital, and management/expertise) and other socio-economic factors such as education level, income level, skill level, and so on. Thus, the production function is useful for showing the relationship between x and y as well as the relationship between variables [6].

Increased production can be done by:

Increase the use of one of the inputs so that the production function becomes

$(y + y) = f (X1+x1 \mid x2,..., xn)$……...…….(3)

which means y is affected by x1 or additional x1 provided x2, x3, ...,xn is fixed (ceteris paribus).

Increase the use of multiple inputs so that the production function becomes

$(y +\Delta y) = f ((X1+\Delta X1),(X2+\Delta X2),...,(Xn +\Delta Xn))$.....(4)

1.3.5. Factors Affecting Corn Production

Land. Land (covering land, water, and contained therein) is one of the elements of agriculture or also called factors that have an important position. The land is also one of the absolute conditions for farmers to be able to produce, therefore by owning this land farmers will carry out the production process.

According to Ref. [7] economically, land has a different level of productivity between one agroecosystem and another agroecosystem or location-specific. Ownership of land is also the first thing that needs to be considered if you want to do farming.

Land ownership is the first thing to consider if you want to do farming [7]. Based on the source of ownership, the land is divided into seven, namely:

1) Buy, the land that has been purchased island with property rights.
2) Rent, rent can be interpreted as a transaction that allows others to work on or manage farmland to be utilized according to the needs of tenants by paying a fixed rent after harvest, every month, or every year.
3) Sakap land island or land owned by a person and has been approved to be done or managed by others or farmers.
4) Granting by the state, The granting of land or land rights by the state is the determination of the government that grants a right to the land of the state.
5) Inheritance, Inheritance land is a heritage land that following religious law is given to its heirs.
6) Waqf, land that has been granted property rights to other parties for social purposes.
7) Clearing their land, land clearing itself usually occurs in communities that hold customary laws over certain areas that are their environment, including the right to use land, forests, and water and their contents.

Based on research conducted by Ref. [2]variable capital and land area positively affect corn production in West Lenteng Village. According to him, the more land owned or used, the more corn production can be produced.

Sufficient land area supported by fertile soil conditions and weather will be able to increase corn production. In addition, this study also refers to research conducted by Ref. [8] where according to him, land area is a very real influence on corn production at a confidence level of 99 percent.

Seed. Seeds according to the Law of the Republic of Indonesia Number 12 of 1992 concerning Plant Cultivation System Chapter I General Provisions Article 1 paragraph 4 as follows: "Plant seeds hereinafter referred to as seeds are plants or parts of them that are used to multiply and /or breed plants.

A seed is defined as a cooked ovule or a reproductive unit formed from a fertilized ovule, consisting of an embryo, a food reserve, and protective skin A hybrid is the first breed (F1) resulting from the crossing of two or more elders (pure strain or inbred line). The hybrid variety is F1 which has heterosis properties. Based on the number of inbred strains used grouped into three crossing methods, namely:

1. Single cross (single cross) is a cross between two lines inbred A x B
2. Doublecross (A X B) X (C X D)
3. Three-way cross (three lanes) is a cross involving three lines inbred A x (BxC)

The problem with hybrid seed production is that pollination must be fully controlled and in pollinating plants themselves, emasculation is a problem for hybrid seed production. The solution to overcome this is the use of barren males (CMS = cytoplasmic male sterile). How to pollinate manually, namely Inbred lines A and B are planted on rows intermittently. Before the male flower blooms, the inbred line used as a female elder must be cut (detasseled). Seeds used for hybrid seeds are seeds from female elders. Superior varieties released by the government consist of hybrid varieties and free-grain varieties. Hybrid varieties include BISI1 and semar, while free-grain varieties are Arjuna and Bima.

According to Ref. [9] three variables affect the efficiency of the use of production factors in corn farming businesses in Grobogan regency, the three variables are land area production factors, seedling production factors, and fertilizer production factors.

The proportion of the use of seedlings for the corn farming business should also be reduced. Because the use of seedlings that are too excessive with a limited land area will only interfere with the growth of corn seeds. Plant growth will not be optimal, because a limited area of land planted with too many seedlings will only make many seedlings that cannot grow well and damage soil conditions. In addition, this study also refers to research conducted by Ref. [8], according to him Seeds affect corn production, where the confidence level is 85 percent. Corn farmers in the research area use hybrid seeds. Hybrid seeds have several advantages that are high productivity, resistance to diseases, and fast harvesting life.

Fertilizer. According to Ref. [10], fertilizer is the main source of nutrients that determines the growth rate and production of plants. One of the efforts of farmers to increase agricultural production is through fertilization. Fertilizer is a material given into the soil both organic and inorganic to replace the loss of nutrients from the soil and aims to increase crop production in good environmental conditions [11].

Fertilizer is a material added to planting media or plants to meet the nutrient needs needed by plants so that they can produce well, the material can also be organic and non-organic. Fertilizer has an important role in soil fertility because the fertilizer given

into the soil contains one or more nutrients needed to replace nutrients that have been used by plants for the process of plant growth and development.

This research is supported by JonhTtomy research [12] namely factors that affect the production of corn farming in Sindue District, Donggala Regency. Where according to him, fertilizer variables have a real effect on corn production and its use can be added to increase corn production. Other research related to the use of fertilizers that affect corn production was also conducted by Ref. [9].

Workforce According to law No. 13 of 2003 on Manpower, what is meant by labor is every person who can do work to produce goods or services both to meet their own needs and for the community. Labor can also be interpreted as several residents that can be used in production activities. In farming, labor comes from the farmer's own family, namely the father as the head of the household, and the wife and children of the farmer.

This study refers to research conducted by Amir Hamzah [2] Labor has a positive influence and significantly affects corn production in West Lenteng Village. In addition, according to Ref. [12], the workforce has no real effect in Sindue District, Donggala Regency.

2. RESEARCH METHODOLOGY

This study uses quantitative descriptive techniques methods, which are analyses used to reveal or describe something about the circumstances that correspond to the facts and are accurate from the place studied. And following the prevailing and recognized theory. This technique is to find out the factors that affect corn farming production in Lengkiti District, Ogan Komering Ulu Regency.

In this study, the form of sampling used is probability sampling, where there is no discrimination in sampling, anyone who is a member of the population can be selected to be a research sample. ampel in this study is all corn farmers in Bandar Jaya Village, Fajar Jaya, Karang Endah, Pagar Dewa, Umpam in Lengkiti District, Ogan Komering Ulu Regency. Taking into account the time, and area of research so that the author in determining the number of samples of 10% of the total population in each village that has the potential as a sample. So, the sample for this study was 135 respondents.

The analysis model to be used in this study is a multiple linear regression analysis models. Regression analysis is used to determine the influence of land area, seeds, fertilizers, and labor, on the amount of corn production in Bandar Jaya Village, Fajar Jaya, Karang Endah, Pagar Dewa, and Umpam which are expressed in the form of the following functions:

y = f (X 1,X 2,X3, X4)..... (5)
where:
y = farmer's production
X1 = Land area (ha/MT)
X2 = seedling(kg/MT)
X3 = fertilizer used (kg/MT)
X4 = Labor (HOK/MT)

Furthermore, the function is transformed into its econometric form as follows:

$LnY=\beta o+\beta 1LnX1+\beta 2LnX2+\beta 3LnX3+\beta 3LnX4+\mu$..... (6)

Where:
Y = Farmer's production (Kg)
βo = intercept
β1 = Regression coefficient
β2 = Coefficient of land area
β3 = Coefficient of seedlings
β4 = Fertilizer coefficient
β4 = Labor Coefficient
X1 = Land area (ha/MT)
X2 = Seedling(kg/MT)
X3= Fertilizer(kg/MT)
X4=Labor (HOK/MT)
μ = Term Error

Efficiency tests are used to see if corn farming is efficient or not. Efficiency tests include technical efficiency, price efficiency, and economic efficiency.

2.1. Technical Efficiency

This research uses stochastic frontier using the Maximum Likelihood (MLE) guessing method. Independent variables of this production function are land area (X1), seeds (X2), fertilizer (X3), pesticides (X4), and labor (X5). The character of the technical efficiency test based on this frontier test tool is that the closer it is to 1 the data is considered technically efficient. Technical efficiency analysis can be measured using the following formulas:

TEi = Yi/Yi* ……..….(7)
Where:
TEi = Technical efficiency of the 1st farmer
Yi = actual production
Yi* = potential production

2.2. Price Efficiency

According to Ref. [5] price efficiency is achieved when the comparison between the marginal production value (NPM) of each input, with the input price equal to 1 (one). This condition requires NPM, equal to the price of the X production factor.

NPM = Px.....(8)
Where:
NPM=Marginal Production Value
Px Price of production factors

The marginal product value (NPM) of corn, can be written as follows:

NPM=b.Y.PyX.Px.....(9)
Where:
b = elasticity of corn production
Y = income (Y)
Py = corn production price (Rp/kg)
X = number of corn production factors (Kg)
Px = price of corn production factor (Rp)

According to Ref. [5] the actual reality of the equation above its value is not equal to 1 (one), which often happens is:

1) (NPM/Px) > 1, this means that the use of x production factor is not yet efficient, to achieve efficiency, then the use of x production factor needs to be increased.

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2) (NPM / Px) < 1 this means that the use of x production factor is inefficient, so it is necessary to reduce x production factors to achieve efficiency.

2.3. Economic Efficiency

Economic efficiency is a combination of technical efficiency and price efficiency, therefore economic efficiency can be achieved if technical efficiency and price efficiency are achieved.

EE = ET x EH.....(11)
Where:
EE = Economic Efficiency
ET = Technical Efficiency
EH = Price Efficiency
With criteria, namely:
1) If EE = 1, then the use of production factors is efficient
2) If EE > 1, then the use of production factors has not been efficient
3) If EE < 1, then the use of production factors is inefficient

3. RESULTS AND DISCUSSION

3.1. Influence of Land Area, Seeds, Fertilizers, and Labor on Corn Farming Production

3.1.1. Coefficient of Determination (R2)

The coefficient of determination value (R^2) ranges from $0 < R^2 < 1$, with the test criteria being R^2 which is getting higher (close to 1) indicating the model formed can explain the diversity of bound variables, and vice versa. Table 1 will be displayed the values R, R^2, Adjusted R^2, and Standard Error of the Corn Production Summary Model

Table 1. Corn Production *Summary* Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.871[a]	.758	.751	1133.309

The results of the estimate show that the value of the determination coefficient R^2) obtained is 0.758. This suggests that the 75.8% variable variation tied to corn production can be explained by the variables of free land area, seeds, fertilizers, and labor. The remaining 24.2% is influenced by free variables or other factors that have not been incorporated into the model.

3.2. F-Statistical Test

F-test is a test simultaneously (simultaneously) the significance of the effect of changes in independent variables on dependent variables. This means that the parameters X1, X2, X3, and X4 are simultaneously tested whether they have significance or not. Estimates show that the significance level F is 0.000 (<α0.05). This shows that variables free of land area, seeds, fertilizers, and labor simultaneously have a real effect on variables tied to corn production.

3.3. T-Statistical Test

The t-test is a partialS test of the influence of an independent variable on a dependent variable used to find out whether a free variable has a partial effect or not on the bound variable. The degree of significance (α) used in test t is 0.05 with the following test criteria: Based on the significance value (α = 0.05)

1. If the significance value >α then H0 is accepted
2. If the significance value ≤ α then H1 is rejected

This section is displayed the coefficient values b0 and b1, t count as well as the level of significance. From the table above, it is obtained as follows:

Y = 9.531 + 0.724X1 + 0.264X2 -0.274X3 + 0.033X4
Where:
Y = Income (IDR/Ha)
X1 = Land Area (IDR/Ha)
X2 = Seed (IDR/Ha)
X3 = Fertilizer (IDR/Ha)
X4 = Labor (IDR/Ha)

3.4. Testing Process (Land Area) against Y (Production)

The results of the estimate showed that the regression coefficient value (parameter) of the land area free variable was marked positively at 0.0724. This shows theoretically that for every increase in the amount of land area by 1 Ha, there will be an increase in production by 0.0724 Kg. It can be said that the increase in the land area will be followed by an increase in production supported by the theory expressed by Ref. [13] which states that the success of an increase in agricultural production depends on increasing land area with land use planning following its land capabilities.

3.5. Testing Process (Seedlings) against Y (Production)

The estimation results showed that the regression coefficient value (parameter) of the seed-free variable was marked positively at 0.264. This shows theoretically that for every increase in the number of seeds by 1 Kg, there will be an increase in production by 0.449 Kg. It can be said that the increase in the number of seeds will be followed by an increase in production.

3.6. Testing Process (Fertilizer) against Y (Production)

The results of the estimate showed that the regression coefficient value (parameter) of the fertilizer use-free variable was negatively marked at 0.274. This shows theoretically that for every increase in land area costs of IDR 1 / Ha, there will be a decrease in the production of IDR 0.274 / Ha. This shows that the increase in fertilizer use will be followed by a decrease in corn production in the research area..

3.7. Testing Process (Labor) against Y (Production)

The results of the estimate showed that the regression coefficient value (parameter) of the labor-free variable was positively marked at 0.033. This shows theoretically that for every increase in the number of workers by 1 Working day/person, there will be an increase in production of 0.033 Kg. This shows that any increase in the number of workers will be followed by an increase in the number of workers will be followed by an increase in production.

The estimated results show that the value of land area significance (0.000 < 0.05), and fertilizer (0.019 < 0.05), then for the production factor H0 is rejected or H1 is accepted. This shows that the means of fertilizer agricultural production partially have a real effect on corn rice production. However, the results of the estimate show that the value of seed significance (0.066 > 0.05), and labor (0.752 > 0.05), then for the production factor H0 is accepted or H1 is rejected.

This shows that the means of producing seeds and labor partially have no real effect on corn production in Bandar Jaya, Fajar Jaya, Karang Endah, Pagar Dewa, and Umpam villages. Allegedly due to excessive use of labor, as well as improper use of seeds. But simultaneously the area of land, seeds, fertilizers, and labor has a real effect on corn production with a yield of significance F of 0.000 (<α0.05).

3.8. Level of Technical Efficiency, Price Efficiency, and Economic Efficiency in Corn Farming

3.8.1. Technical Efficiency

The level of technical efficiency of the use of corn production factors in Balla Village, Baraka District, and Enrekang Regency can be known from the results of technical efficiency calculations through frontier 4.1c data processing and obtained the following results:

Table 2. Frontier Production Function Estimation results of the final estimates are :

No	Variable	Coefficient	Standard-Error	T-Ratio
1.	Beta o (Production)	0.35917485E+04	0.23391785E+01	0.15354743E+04
2.	Beta 1 (Land Area))	0.37445571E+04	0.17155673E+0	0.21826931E+04
3.	Beta 2 (Seed)	0.13739768E+03	0.60625188E+0	0.22663465E+01
4.	Beta 3 (Fertilizer)	-0.10169221E+02	0.27482356E+01	-0.37002726E+01
5.	Beta 4 (Workforce)	0.32356267E+02	0.83723171E+01	0.38646729E+01
6.	sigma-squared (σ2)	0.15287983E+07	0.10000077E+01	0.15287865E+07
7.	Gamma	0.30368910E+00	0.14269731E+00	0.21282047E+01
8.	mu	-0.57371735E+00	0.61556799E+01	-0.93201296E-01
	Mean Technical Efficiency	0.10000000E+01		

Source: Primary Data after processing, 2021.

The results of the estimate using the help of Frontier Software 4.1c showed that the respondents who tried to grow corn studied were 135 respondents and obtained an average technical efficiency score of only 0.10 as seen in Table 2. The technical efficiency value gives the meaning that the average respondent farmer can reach 10 percent of the production potential obtained from a combination of sacrificial production factors. The average value of technical efficiency is still far below 1, meaning that corn farming carried out by respondent farmers is still inefficient, there is still a potential opportunity of 90 percent to increase corn production in the research area. If the technical efficiency is close to 1 then the higher the level of technical efficiency achieved in farming. In Table 2, it can also be seen that fertilizer variables have a negative influence on production.

3.8.2. Price Efficiency

Price efficiency explains the relationship between cost and output. Price efficiency is achieved if we can maximize profits by equating NPM of Every factor of production with its price. Mathematically the price efficiency formula used is as follows:

NPM=b.Y.PyX.Px

Where b is the elasticity of production, Y is production, Py is the production price, X is the number of production factors and Px is the price of production factors.

The calculation of the efficiency of corn farming prices is as follows:

EH=NPM1+NPM2+NPM3+NPM44

After doing the NPM calculation for each production factor, where the price efficiency is calculated from the addition of NPM price efficiency for each production factor. Then the value of its price efficiency is:

NPM=NPM1+NPM2+NPM3+NPM44=
NPM=1.25+4.99+-0.002+1.204=7.438

The price efficiency value reaches 7. 438 means that the use of production factors is inefficient and needs to reduce the quantity of production input usage.

3.8.3. Economic Efficiency

Economic efficiency is the result of a combination of technical efficiency and price efficiency. From the results of calculations, it is known that the amount of technical efficiency is 0.10 and price efficiency is 7,438. Where economic efficiency can be achieved when technical efficiency and price efficiency have been achieved. Then it can be calculated the amount of economic efficiency as follows:

EE=ET. EH

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EE=0.10 . 7.438=0.7438

So the amount of economic efficiency in corn farming in the research area, namely Bandar Jaya Village, Fajar Jaya, Karang Endah, Pagar Dewa, and Umpam amounted to 0.7438. This means that corn farming in the research area is not economically efficient because the value is less than 1. Thus the use of production factors in the research area must be added so that corn farming can achieve economic efficiency.

4. CONCLUSION

Based on the results and discussions about the efficiency of corn farming in Bandar Jaya Village, Fajar Jaya, Pagar Dewa, Karang Endah, and Umpam, it can be concluded as follows: (1) Factors of production of seeds, fertilizers, and labor have a simultaneous effect on corn production, while partially variable means of land area and fertilizer production have a real effect on corn production in Bandar Jaya, Fajar Jaya, Karang Endah, Pagar Dewa, and Umpam villages; (2) The results of the technical efficiency analysis showed that the efficient means of 0.10 is said to be inefficient in the use of factors because it is much close to 1. The price efficiency of corn farming, which is 7,438 shows that corn farming in Bandar Jaya, Fajar Jaya, Karang Endah, Pagar Dewa, and Umpam villages is not priced efficient. As for the economic efficiency of corn farming in Bandar Jaya Village, Fajar Jaya, Pagar Dewa, Karang Endah, and Umpam, which amounts to 0.7438, this shows that corn farming is not economically efficient.

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