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ANALYSIS OF DECISION FACTORS OF FARMERS IN HORTICULTURAL BUSINESS IN PERJAYA BARAT VILLAGE

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ABSTRACT: This research was conducted in Perjaya Barat Village, Ogan Komering Ulu Timur Regency. The method used in this research is a survey method. This study aims to: 1. Analyzing the comparison of the average income obtained by farmers from vegetable farming with 4 commodities with the average income of 2 commodities in Perjaya Barat Village, Martapura District 2. The datain this study used primary and secondary data. Primary data is data obtained by researchers directly from the original source. And processed with an analytical tool, namely SPSS 16. The method used in this study was proportionate stratified random sampling. The proportionate stratified random sampling method is the study population is divided into several strata or sub-groups and separate samples are taken from each sub-group. The way to take the sample is to know in advance the number of subjects in each sub-group or in this study is to know the number of subjects in each class. Then the percentage of the sample size isdetermined from the entire population. The results of this study indicate that the amount of the comparison of income obtained by farmers from vegetable farming in Perjaya Barat Village who cultivates 4 commodities and 2 commodities is Rp. 1,253,000. The factors that influence the decision of farmers to continue farming horticulture in Perjaya Barat Village are income and capital, while the factors of land area and price have no significant effect on farmers' decisions to continue farming horticulture.
Keywords: decisio farmer, farming, horticulture

I.   INTRODUCTION

Indonesia is an agricultural country that has diverse food crops and horticulture. Horticultural commodities are agricultural commodities that have high economic value and huge agribusiness potential to be developed, especially to increase income for the community, especially small-scale to large-scale farmers. Horticultural products have several advantages, both high selling value, diversity of species, and absorption of domestic and foreign markets. The Ministry of Agriculture has determined that in 2015 horticultural agriculture statistics, horticultural commodities include 90 commodities, consisting of 26 types of seasonal vegetables and fruit, 25 types of annual vegetables and fruit, 15 types of medicinal plants and 24 types of ornamental plants.

One of the provinces that is the center of vegetable production in Indonesia is the province of South Sumatra. Vegetable crops that are mostly cultivated by farmers in the province of South Sumatra are scattered in every district and city in the form of lowland vegetable crops such as red beans, eggplant, beans, large chilies, cayenne pepper, kale, spinach, long beans, and cucumbers as well as highland crops such as potatoes. , leeks, cabbage, carrots, and mustard greens (Publikasi et al., 2019). In 2019, the total production ofHorticultural crops in Ogan Komering Ulu Timur was 1,091 tons of long beans, 1,062 tons of cucumbers, 1,112 tons of kale and 541 tons (BPS, 2019).

Table 1. Number of Horticultural Farmers in Martapura District

No	Village	Number of Farmers
1.	Kota Baru	40
2.	Pasar Martapura	-
3.	Dusun Martapura	100
4.	Paku Sekunyit	-
5.	Bukit Sari	189
6.	Kota Baru Barat	30
7.	Kota Baru Selatan	15
8.	Sungaituha Jaya	20
9.	Tanjung Kemala	24
10.	Tanjung Kemala Barat	87
11.	Trukis Barat	16
12.	Trukis Rahayu	25
13.	Vetra Jaya	123
14.	Keromongan	70
15.	Perjaya Barat	289
16.	Perjaya	120
17.	SukoMulyo	95

Source: East OKU Agriculture Service 2019 (processed)

From the table above, it can be seen that the largest number of farmers is in Perjaya Barat Village with a total of 289 farmers. Farmers in West Perjaya Villagedo farming such as vegetable farming.

The decision of farmers to cultivate the types of vegetables in Perjaya Barat Village is determined by several factors. This is in line with previous research conducted by (Manalu, 2019) that the decision factors are influenced by land area,age, gender, education level. According to (Santika et al., 2014) there are several factors that influence decision making, namely income factors, education, number of family members. From the results of the background above, it is interesting to study the analysis of decision factors for horticultural farmers in Perjaya Barat Village.

Based on the background that has been described, the formulation of the problem in this study is:

1.   What is the ratio of the average income obtained by farmers from vegetable farming of 4 commodities to the average income of 2 commodities in Perjaya Barat Village, Martapura District?

2.   What are the factors that influence the farmer's decision to continue horticultural farming in Perjaya Barat Village, Martapura District?

II.   CONCEPTUAL MODEL AND HYPOTHESIS

Horticulture from the syllable hortus with culture cultivation, this term is often used to describe the systematics of production to serve the fulfillment of daily life such as fresh commodities from vegetables, fruits, and ornamentalplants. So that horticulture is the cultivation of plants in the garden or in the residence or yard. All plants both in the form of ornamental plants and vegetables that are planted around the house or yard can be referred to as horticulture(Winarni, 2012).

Hypothesis: It is suspected that income, land area, price and capital factors influence farmers' decisions in cultivating vegetables in Perjaya Barat Village.

III.   RESEARCH METHODS

The research method used in this study is a survey method, where this method is used to search for existing data in the field with a large population category, samples taken from a population with a questionnaire as a tool to collectdata.

To answer the first problem formulation regarding the analysis of the magnitude of the income ratio obtained by farmers from vegetable farming in Perjaya Barat Village using the formula:

$Pn = Y . Py$

Comparison of income = Average income of 4 commodities – Average income of

2 commodities

Where:

Pn   = Net income

Y   = production quantityPy   = Price

Gross farm income is defined as the value of the total farm product within a certain period of time, both sold and unsold. Total farm expense is defined as the value of all inputs that are used up or expended during production. The difference between gross income and total farm expenditure is referred to as net income. Revenue is the difference between revenue and total costs.

$$Pn = TR - TC$$

Comparison Pn = Average income of 4 commodities – Average income of 2commodities

Where:

Pd   = income

TR   = Net Income

TC   = Total Cost

To answer the farming decision factors, the second problem formulation uses a formula for vegetable analysis in Perjaya Barat Village using a logistic regression formula. Since K (farmer's decision in vegetable farming) varies in value from 1 and 0, then predict the equation of the logit model with the following formula:

$$\text{Log} |pi/(1-pi)| = \beta_0 + \beta_1 \log X1 + \beta_2 \log X2 + \beta_2 \log X3 + \beta_4 \log X4 + U$$ Where:

K   = Farmer's decision (value 1 if farmer's decision to do

kale, spinach, long beans and cucumber farming, worth 0if the farmer's decision to cultivate kale and spinach)

Pi   = Decision opportunities ($0<p<1$)β_0 = Intercept coefficient

X1   = Income (Rp) X2   = Land area (Ha)X3   = Price (Rp)

X4   = Capital (Rp)

U   = Error or nuisance

The hypotheses to be tested are as follows:

$H_0 : \beta_1 = \beta_2 = ...\beta_k = 0$

H_1 : at least one $\beta_j = 0$ (j 1,2,3.   k)

Furthermore, to find out which determinant variables significantly determine the decisions of farmers in vegetable farming, a t-student test was carried out with the hypothesis being tested as follows:

$H_0 : \beta_1 < 0$$H_1 : \beta_i > 0$

The formula for calculating the value of t used is:

$|r|count = i/(Se(\beta_i))$, where $Se(\beta_i) = \sqrt{(\text{Variable } (i))}$

Decision rule:

1.   If tcount < ttable , then H0 is rejected and H1 is accepted. This means that there is a real partial effect between the independent variable and the dependent variable.

2.   If ttable > tcount then H0 is accepted and H1 is rejected. This means that there is no real effect in real terms between the independent variables and the related variables.

IV.   RESULTS AND DISCUSSION

1.   Analysis of the Comparison of Income Obtained by Farmers from Horticultural Farming in Perjaya Barat Village

Farming income will be different for each farmer, this difference is caused by differences in production factors, production levels produced, and selling prices. Revenue is defined as the remainder of the reduction in the value of receipts and expenses incurred. Net farm income measures the rewards obtained by farming families from the use of production factors. Production is an activity carried out by humans to create new value so that it can meet human needs. In carrying out production, costs are needed including fixed costs and variable costs. The following are the production costs of horticultural plant farmers in Perjaya Barat Village.

The total cost of production for horticultural farmers is 4 commodities(spinach, kale, cucumber and long beans) with an average total cost of all samplesof Rp. 1.090.000. Farming costs are the value of the use of production

facilities and others that are charged to the product in question. Farming costs are classified based on their nature, namely fixed costs and variable costs. Fixed costs are costs that are relatively fixed in number and are not influenced by the number of goods produced, farmers must continue to pay regardless of the number of commodities produced by their farm. Variable costs or variable costs are costs whose amount changes according to the amount of production, for example, the wider the area planted with chilies by farmers, the higher the cost of fertilization. The total cost of production of horticultural farmers for 2 commodities (spinach and kale) with an average total cost of all samples is Rp. 519,000.

Revenue is defined as the remainder of the reduction in the value of receipts and expenses incurred. Net farm income measures the rewards obtained by farming families from the use of production factors. The success or failure of a farm can be seen from the amount of income obtained by farmers in managing a farm. The average income of each horticultural farmer is 4 commodities (spinach, kale, cucumber and long beans) with an average income of Rp. 2,905,000.

The average income of each horticultural farmer is 2 commodities (spinach and kale) with an average income of Rp. 1,652,000. From the results of the average income so that a comparison of income can be obtained by subtracting the average income between the income of horticultural farmers of 4 commodities (spinach, kale, cucumber and long beans) and the income of horticultural farmers of 2 commodities (spinach and kale) as follows:

Comparison = Average income of 4 commodities – Average income of 2Commodity
=Rp. 2.905.000 - Rp. 1.652.000
= Rp 1.253.000

So that it can be obtained a comparison of income between horticultural farming of 4 commodities (spinach, kale, cucumber and long beans) with 2 commodities (spinach and kale) of Rp. 1,253,000.

2. Factor analysis of farmer's decision to keep farming horticulture in Perjaya Barat Village

The factors that influence the decision of farmers to continue farming horticulture are influenced by several factors such as income (X1), land area (X2), price (X3) and capital (X4). In this research study, SPSS 25 was used and then processed using logistic regression analysis.

Table 2. Logistics Regression Outputs/Decision Factors for Horticultural Farmers

No	Model	B	Exp (B)	Sig	Taraf Nyata
1	Pendapatan (X1)	18,720	1,009	0,000	A
2	Luas lahan (X2)	0,006	0,225	0,937	TN
3	Harga (X3)	1,950	1,011	0,163	C
4	Modal (X4)	42,653	220,554	0,000	A
5	Constant	-0,205	0,815	0,476	A

Source: Processed primary data in 2021Information :
R square : 0.747 or 74.7%
C square : 67.417 = 0.05TN:Influence is not real
A: Significantly affect the level of 0.05B: Significantly affect the level of 0.1 C: Significantly affect the level of 0.2

Addressing the value of Rquare 0.747 or as much as 74.7% so that it can be said that the contribution of income variables (X1), land area (X2), price (X3) and capital (X4). Affecting the estimation of farmers' decisions to continue horticulture farming in Perjaya Barat Village by 74.7%.

Y= -0,205+ 18,720 (X1)+ 0,006 (X2)+ 1,950 (X3)+ 42,653 (X4)

Factors that influence the decision of farmers to cultivate horticulture:

a. Income variable (X1)

Based on the results of the logical regression test, the income variable with acoefficient of 18.720 was tested with a significant level of 0.00. These results indicate that the income variable is significant with =0.05. Look at the sign of a positive coefficient, every time it generates 1% of income, it will increase revenue

by Rp. 18,720. This is in line with research (Rachman et al., 2014) with research on the factors that underlie the decision making of cabbage farmers and thedevelopment strategy of cabbage farming with the conclusion from this study that the dominant factors underlying the decision making of cabbage farmers are the highest income. , geographical suitability among the highest income factors, ease of marketing, high cabbage prices, long experience of farmers, ease of cultivation and geographical suitability.

It is reinforced by the opinion of horticultural farmers about the decision of farmers to cultivate horticulture which can be from the interview results that the higher the income, the decision of farmers to cultivate horticulture will also be higher because with the increase in income, the level of welfare of horticultural farmers is also higher.

b.   Variable Land area (X2)

Based on the results of the logical regression test, the land area variable witha coefficient of 0.006 was tested with a significant level of 0.937. These results indicate that the variable land area is not significant with =0.2. Look at the sign of a positive coefficient, every time it produces a land area of 1% it will increase the land area by 0.06 m2. In line with research (Santika et al., 2014) with a study entitled analysis of factors that influence farmers' decision making to do long bean seed farming in Andongsari Village, Ambulu District, Jember Regency said that the factors that significantly influence the decision making to carry out Long bean seed farming in Andongsari Village, Ambulu District, Jember Regency is experience while other factors, namely income, education, age, number of family members, and land area have no significant effect.

Reinforced the opinion of horticultural farmer respondents obtained from interviews in the field said that land area does not affect the decision of horticultural farmers to cultivate farming because horticulture is cultivated by farmers only as a side business, while the main business is rice plants so that the area of land to plant horticultural crops is strengthened. is narrow.

c.   Price Variable (X3)

Based on the results of the logical regression test, the price variable with a coefficient value of 1.950 was tested with a significant level of 0.163. These results indicate that the price variable is not significant with =0.1. Look at the signof the coefficient is positive, every time it produces a price of 1% it will increase the price by Rp. 195.50. This is in line with the opinion of farmers who were carried out from the results of field interviews saying that if prices rise or fall, horticultural farmers continue to grow vegetables because horticultural crops are only a side business.

d.   Variable Capital (X4)

Based on the results of the logical regression test of the capital variable, the coefficient value of 42.653 was tested with a significant level of 0.00. These results indicate that the modal variable is significant with =0.05. Look at the sign of the coefficient is positive, every time it generates 1% of capital it will increase the price by Rp. 426.53. This agrees with the research (Siswadi et al., 2019) with a study entitled factors that influence the decision of farmers to switch lowland rice farming to corn with the conclusion that the factors that influence farmers' decisions to switch from lowland rice farming to corn farming are the number of members. family, capital, labor, and land area.

It is reinforced by the opinion of horticultural farmers about the farmers' decisions on horticultural farming which can be from the interview results that thehigher the capital but the lower the income, the farmers suffer losses.

IV.   CONCLUSION

Based on the results of the discussion, it can be concluded that: The amount of difference in income obtained by farmers from vegetable farming in Perjaya Barat Village which cultivates 4 commodities and 2 commodities is Rp. 1,253,000. in West Perjaya Village, namely income, price and capital, while the land area factor has no significant effect on farmers' decisions to continue horticultural farming.

REFERENCES

[1]   BPS, S. (2019). *Luas panen dari dinas pertanian melalui laporan statistik pertanian tanaman pangan, palawija. Produktivitas dari survei ubinan tanaman pangan.*

[2]   Manalu, E. V. A. A. (2019). *HORTIKULTURA SAYURAN (Study Kasus :Kelompok Tani Kelurahan Sri Padang , Kecamatan Rambutan Kota Tebing Tinggi) SKRIPSI OLEH : PROGRAM STUDI AGRIBISNIS FAKULTAS PERTANIAN UNIVERSITAS MEDAN AREA MEDAN HORTIKULTURA SAYURAN (Study Kasus : Kelompok Tani Ke.*

[3]   Publikasi, K., Provinsi, B. P. S., & Selatan, S. (2019). *BPS provinsi sumatera selatan.*

[4]   Rachman, N., Januar, J., & Sudarko. (2014). Faktor-Faktor yang Mendasari Pengambilan Keputusan Petani Berusahatani Kubis dan Strategi Pengembangan Usahatani Kubis. *Berkala Ilmiah Pertanian*, 1–11.

[5]   Santika, N., Suwandari, A., & Agustina, T. (2014). Analisis Faktor-Faktor yang Mempengaruhi Pengambilan Keputusan Petani untuk Melakukan Usahatani Benih Kacang Panjang di Desa Andongsari Kecamatan Ambulu Kabupaten Jember. *Berkala Ilmiah Pertanian*, *10*(10), 1–7.

[6]   Siswadi, B., Hindarti, S., Program, M., Agribisnis, S., Pertanian, F., Islam, U.,Program, D., Agribisnis, S., Pertanian, F., & Islam, U. (2019). *Faktor-faktor yang mempengaruhi keputusan petani beralih usahatani padi sawah ke jagung*.

[7]   Winarni, I. (2012). Ruang Lingkup dan Perkembangan Hortikultura. *Jurnal Hortikultura*, 1–43.