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Analysis of Farmers Attitude In Canning And Bululawang Sugarcane Business Variety

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ABSTRACT

This study was conducted to determine the differences in income, level of feasibility and level of enthusiasm or attitude of farmers in cultivating sugarcane varieties of Canning and Bululawang. The research was carried out in Badang Village, Ngoro District, Jombang Regency from May to July 2021. The research method used was descriptive analysis method, which means analyzing income that has been ongoing or based on reality. In addition, the multi-attribute fishbein model is also used to calculate the interest or attitude of sugarcane farmers to plant canning and Bululawang varieties. The results showed that the income obtained from sugarcane farming of the Canning variety was Rp. 24.522.620,- while the sugarcane of Bululawang variety was Rp. 18.438.820,-. Sugarcane farming of the canning variety in Badang Village, Ngoro District, Jombang Regency is feasible to be cultivated with an R/C Ratio of 1.61. Meanwhile, the Bululawang variety of sugarcane farming is also feasible with an R/C Ratio of 1.49. Based on fishbein analysis, it was found that the attitude of sugarcane farmers in Badang Village, Ngoro District, Jombang Regency (Ao) towards the canning variety was 37,28. It is interpreted that the farmer's total attitude (Ao) towards the canning variety is in the third range (36-51) which is agree (S). So it can be concluded that sugarcane farmers in Badang Village, Ngoro District, Jombang Regency prefer canning sugar cane to Bululawang sugarcane varieties.

Keywords: Canning variety, Bululawang, Feasibility of Farming, Fishbein

1. INTRODUCTION

Sugarcane (*Sacharum officinarum*. L) is a plant grown for sugar as raw material. Sugarcane can be grown in tropical climates. In Indonesia, sugar cane is widely cultivated on the islands of Sumatra and Java. In East Java, sugar cane is the leading commodity of plantations. Until 2019, the area of sugar cane in East Java based on data from the Plantation Service of East Java Province reached 175.632 Ha, with sugarcane production of 12.975.595 tons and sugar production of 1,046.856 tons (Fitriyani, 2012 in Kadarwati, 2015).

According to Sugiyarta (1994), there are many varieties of sugarcane that have been planted by Indonesian farmers. Like the sugarcane farmers in Ngoro District, Jombang Regency - East Java, the sugarcane varieties developed are BL (Bulu Lawang), PS 864, PS 862, TLH 01, Canning 6222, PSJT 941 and many more. Proper cultivation of sugarcane has an important role in overcoming the low productivity of sugarcane and crystal productivity, one of which is the arrangement of varieties (Nisak et al., 2017). Changes in the point of view of sugarcane farmers on

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the basic reference for choosing varieties are needed. Because it is thought to have an effect on two sides, namely sugarcane farmers (income) and sugar factories (where sugar cane is milled). It is suspected that the optimal yield has not been achieved because the rehabilitation program (unloading the ratoon) does not include a mission for structuring varieties.

Arrangement of varieties is directed to achieve the ideal composition between early, middle and late or late ripening, namely 30-40-30%. However, the ideal composition for each PG can be different and a maximum slow cooking composition of 30% is recommended (Kadarwati, 2015).

The following are some of the advantages and disadvantages of Canning and Bululawang (BL) sugarcane varieties, which are summarized from the descriptions of each variety:

Table 1. Advantages and Disadvantages of Canning and Bululawang Varieties

No	Description	Canning Varieties **	Bululawang Variety (BL) *
1	Advantages	<ul style="list-style-type: none"> - High yield potential - Resist HPT attacks - Easy maintenance - Time to reach optimum cooking about 8 to 10 months 	<ul style="list-style-type: none"> -High productivity -Easy maintenance - Resistant in all typologies land
2	Deficiency	<ul style="list-style-type: none"> - Productivity is not too high -Not all typologies suitable land 	<ul style="list-style-type: none"> - It takes more than 12 months to reach its optimum maturity -Low yield potential Lots of HPT attacks

Source : * Ministry of Agriculture, (2004) *in* Prakoso, S (2018)

** Ministry of Agriculture, (2010) *in* Ikka, N. D. A (2021)

Research purposes

1. Knowing the difference in the income of sugarcane farming of canning and Bululawang varieties in Badang Village, Ngoro District, Jombang Regency - East Java.
2. Knowing the difference in the feasibility level of sugarcane farming of Canning and Bululawang varieties in Badang Village, Ngoro District, Jombang Regency - East Java.
3. Knowing the level of enthusiasm or attitude of farmers in Badang Village, Ngoro District, Jombang Regency to plant canning and Bululawang varieties of sugarcane.



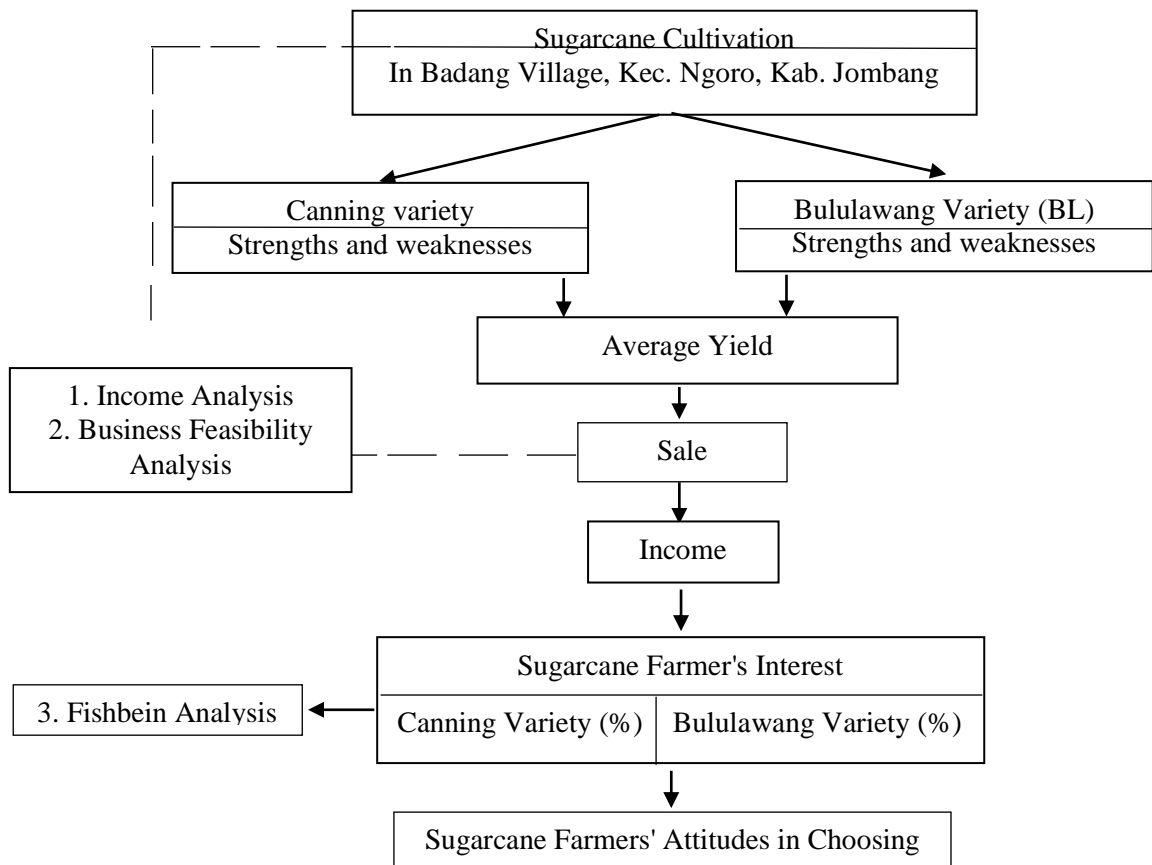


2. RESEARCH METHODS

This research was conducted in Badang Village, Ngoro District, Jombang Regency, the area is the dominant area in developing sugarcane varieties of canning. This research will be carried out for three months starting from May to July 2021. The research was conducted based on descriptive analysis method, which means analyzing current income or based on reality. The focus of the research is: Analysis of Farmers' Attitudes in Sugar Cane Farming of Canning and Bululawang Varieties (Case Study in Badang Village, Ngoro District, Jombang Regency).

In this study, the sampling technique used was snowball sampling because by using this technique, the researcher in addition to obtaining detailed information or data, the research respondents. According to Alfindasari (2014), as a concept, snowball sampling is a labeling (naming) of an activity when researchers collect data from one respondent to another respondent who meets the criteria, through in-depth interviews and stops when there is no new information, replication or repetition of information variation, experiencing information saturation point. This means that the information provided by the next informant is the same as what was given by the previous informants. Due to using the in-depth interview method in this study,

The research framework chart can be presented in Figure 1.



**Figure 1.** Research Implementation Workflow (Primary Data Processed, 2021)**Data analysis method****1. Farming cost analysis**

The first assumption to analyze Revenue. According to Soemarso, (2014) in Utomo, B. (2020), income is an increase in the number of assets or a decrease in liabilities arising from the delivery of goods and services or other business activities in a period. Data analysis methods used in this study include: The total cost of sugarcane farming is the sum of fixed costs and variable costs, including all costs incurred for sugarcane farming during one growing season calculated in units of rupiah (Soekartawi, 2006).

$$TC = FC + VC$$

Information :

TC = total cost (total cost)

FC = fixed cost (fixed cost)

VC = variable cost (variable cost)

2. Farming revenue analysis

Sugarcane farming revenue is all income from the sale of sugar cane, so that revenue is obtained from the multiplication of the total production or harvest in one growing season with the selling price, calculated in units of rupiah (Soekartawi, 2006).

$$TR = Q \times P$$

Information :

TR = total revenue (total acceptance)

Q = yield (ku)

P = selling price (Rp/ku)

3. Farming income analysis

According to Zaman, N, *et. al.* (2021), Income is the difference between revenue and costs incurred for factors of production. Meanwhile, Soekartawi, (2006), argues that the income of sugarcane farming is the difference between the income earned in one growing season and the total costs incurred for sugarcane farming.

$$\pi = TR - TC$$

Information :





π = farm income, unit Rp/Ha

TR = total revenue (total revenue)

TC = total cost (total cost)

4. Farming feasibility analysis

The second assumption is to analyze the feasibility of farming in terms of two things, namely the R/C Ratio with the following formula:

$$\text{R/C Ratio} = \text{TR/TC}$$

Information :

R/C Ratio = Return/cost Ratio

TR = Totalrevenue, unit Rp/Ha

TC = Totalproduction cost, unit Rp/Ha

5. Fishbein Analysis

Fishbein Method

The third assumption to analyze the attitude or level of enthusiasm of farmers can be used by the multi-attribute or Fishbein method. This method is used to measure consumer attitudes and behavior and describes a structured design to measure the relationship between consumers and products which refers to product attributes. According to Engel *et. al.* (1993) in Utomo, B. (2020), the Fishbein model illustrates that consumer attitudes towards a product or brand are determined by two things, namely: (1) trust in product attributes (*bi*) and (2) evaluation of the importance of attributes on the product (*ei*). Symbolically, the Fishbein multi attribute method can be seen in the following formula:

$$A_o = \sum_{i=1}^n b_i \cdot e_i$$

Information:

Ao : Attitude towards object

bi : The level of consumer confidence in the attribute i

ei : Evaluation of the consumer's level of importance (evaluation) of the attribute to i

n : Number of salient attributes





3. RESULTS AND DISCUSSION

Fixed Cost (TFC)

Fixed costs in sugarcane farming are obtained from capital interest (bank interest), tractor rental and taxes in an average amount per hectare which is usually calculated within a year in the first crop category.

Table 2. Fixed Cost Components of Canning and Bululawang Sugarcane Farming

No	Description	Average Amount Per hectare	
		Canning	Bululawang
1	Bank interest	1.336.380	1.362.180
2	Tractor (Rental)	2.100.000	2.100.000
3	Land tax	80.500	80.500
	Average Amount per Hectare	3.516.880	3.542.680

Source: Data Analysis, 2021

Variable costs (TVC)

Variable costs are costs incurred and have a direct effect on the resulting production, in this case production facilities, such as seeds, fertilizers, herbicides and labor which include planting, embroidery, fertilizing, irrigation, weeding, hoarding, klentek and transport cutting.

Table 3. Variable Costs of Sugarcane Farming for Canning and Bululawang Varieties

No	Description	Average Amount Per hectare	
		Canning	Bululawang
1	Sugarcane Seeds	4.900.000	4.550.000
2	Fertilizer	2.360.000	3.140.000
3	Herbicide	653.000	653.000
4	Labor	12.260.000	12.260.000
5	Cutting and Transport	16.800.000	18.200.000
	Average Amount per Hectare	36.973.000	38.803.000

Source: Data Analysis, 2021

Total cost (TC)

Total costs are the total costs incurred during the production process obtained by adding up the fixed costs or Total Fixed Cost (TFC) and variable costs or Total Variable Cost (TVC). The total cost of sugarcane farming of Canning and Bululawang varieties is presented in table 4. The



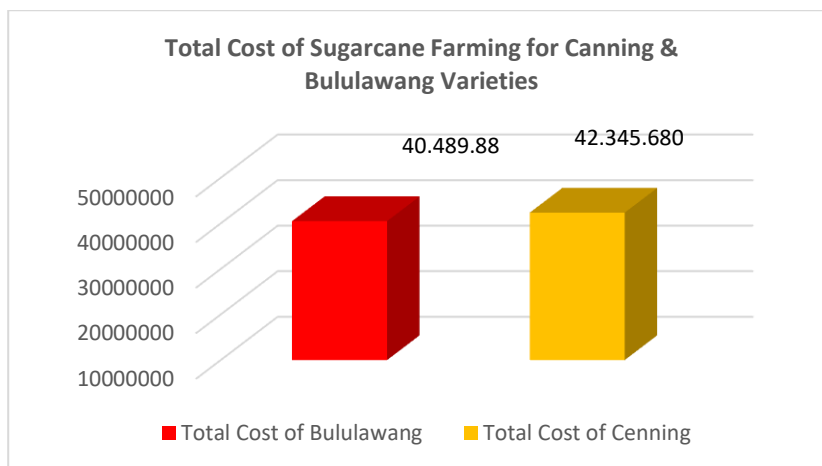


result is Rp. 40.489.880 for sugarcane farming of Canning varieties and Rp. 42.345.680 for Bululawang varieties.

Table 4. Analysis of Sugar Cane Farming Per Ha in the First Crop Category

No	Description	Average Amount Rp/Ha	
		Canning	Bululawang
1.	Fixed cost	3.516.880	3.542.680
2.	Variable cost	36.973.000	38.803.000
3.	Total cost	40.489.880	42.345.680
4.	Total Receipt	64.932.000	62.790.000

Source: Data Analysis, 2021



Graph 1. Comparison of Total Cost of Sugarcane Farming for Canning and Bululawang Varieties

Total revenue (TR)

Total revenue or Total Revenue (TR) is obtained from the total production or yield (Y) multiplied by the selling price of the product or Price yield (Py). The selling price of sugarcane in 2021 for the current 7th yield from the Jombang Regency area to PG. PT Kebun Tebu Mas is Rp. 69.000/ku while the yield of 8 is 77.300/ku. The average production of canning variety sugarcane





per hectare in Badang Village is 1.200 quintals for the first crop category, with an average yield achieved of 8 so that the total average revenue per hectare is Rp. 64.932.000,-. In sugarcane farming of Bululawang variety (BL) the average production per hectare is 1.300 quintals, with an average yield of 7, the total revenue obtained is Rp. 62.790.000,-.

Income

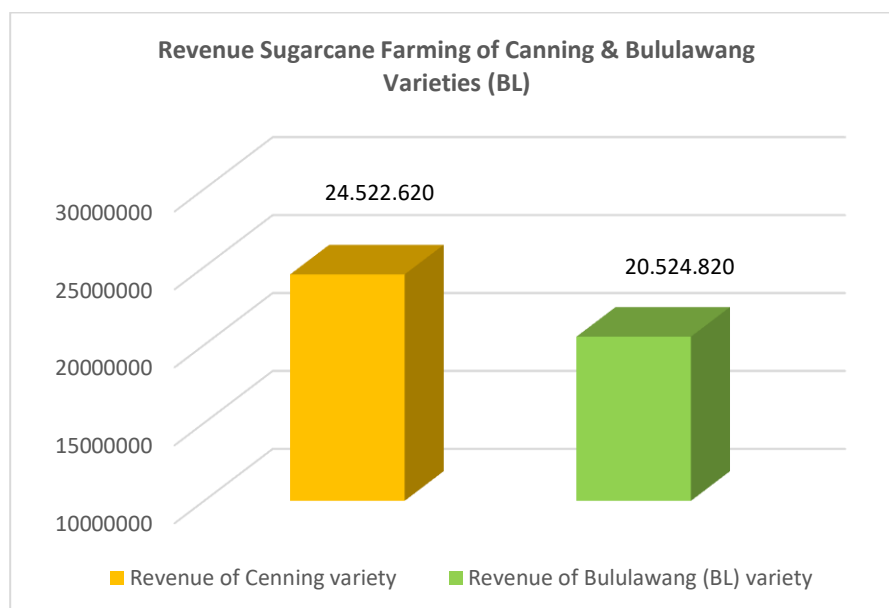
Income is the difference between farm income and the total cost of production, or income is the total revenue minus the total cost.

Table 5. Average Sugarcane Farming Income of Canning and Bululawang Varieties (BL)

No	Description	Canning variety	Bululawang Variety (BL)
1	Admission (TR)	64.932.000	62.790.000
2	Total Cost (TC)	40.489.880	42.345.680
3	Income (π)	24.522.620	20.524.820
	Income Difference		3.997.800

Source: Data Analysis, 2021

The income of farmers who use the canning variety is greater than that of the farmers who grow the Bululawang (BL) variety, this is because the yield achieved by the canning variety cane is higher than that of the Bululawang variety. The difference of one yield point has an effect on the amount of farmers' income.



Graph 2. Comparison of Sugarcane Farming Income of Canning and Bululawang (BL) Varieties



Calculation of R/C Ratio

Revenue per Cost Ratio is the ratio between farm income and total production costs. In order to determine the feasibility of sugarcane farming of Canning and Bululawang varieties, it is presented in the following table:

Table 6. Calculation of R/C Ratio in Sugarcane Farming of Canning and Bululawang Varieties Per Ha First Plant

No	Description	Canning	Bululawang (BL)
1	Admission (TR)	64.932.000	62.790.000
2	Total Cost (TC)	40.409.380	42.345.680
R/C Ratio		1.61	1.49

Source: Data Analysis, 2021

Because the R/C Ratio is both > 1 , it means that sugarcane farming of the two varieties is feasible to cultivate, but the R/C ratio of sugarcane farming of the Canning variety (1.61) is greater than that of the Bululawang variety (BL) (1.49), so it can be described that growing sugarcane with the canning variety is more profitable than growing sugarcane with the Bululawang (BL) variety.

Analysis of farmers' interest with the fishbein method

Based on the results of the analysis of the level of trust and the level of importance can be displayed as follows:

Table 7. Results of Fishbein's Multi-attribute Attitude Analysis for Canning Varieties of Varieties Bululawang

No Attribute	Interest Score (<i>ei</i>)	Confidence Score (<i>bi</i>)	Farmer's Attitude (<i>Ao</i>)
1. yield	3.31	3.38	11.19
2. Productivity	3.31	2.56	8.47
3. Cultivating Cost Efficiency	2.81	3.13	8.80
4. Plant Pest and Disease Resistance (HPT)	2.94	3.00	8.82
<i>ei x bi</i>			37.28 (Agree)

Source: Primary Data Processed, 2021

Sugarcane farmers feel that an assessment (evaluation) of the yield of a sugarcane variety is the most important thing in forming attitudes towards sugarcane varieties, followed by an evaluation of plant pest and disease resistance, cultivation cost efficiency and productivity.



**Table 8.** Range of Total Attitude Values (Ao)

Scale	Interpretation
4 - 19	Strongly Disagree (STS)
20 - 35	Disagree (TS)
36 - 51	Agree (S)
52 - 64	Strongly Agree (SS)

Source: Primary Data Processed, 2021

It can be seen that the attitude of farmers (Ao) of the canning variety to the Bululawang variety is 37.28. This is in the third range (scale 36-51) which is Agree (S). Therefore, sugarcane farmers in Badang Village, Ngoro District, Jombang Regency tend to prefer to plant canning variety sugar cane than Bululawang sugar cane.

4. CONCLUSIONS

Sugar cane farming with canning variety is Rp. 24.522.620,- which is more profitable in terms of farmer's income compared to sugarcane farming of Bululawang variety, Rp. 18.438.820,-. Sugarcane farming of the canning variety and the Bululawang variety are both feasible to cultivate, with R/C Ratio values of 1.61 and 1.49. Interpretation of farmer's attitude (Ao) towards the canning variety is in the third range (36-51) which is agree (S). So it can be said that sugarcane farmers in Badang Village, Ngoro District, Jombang Regency prefer canning sugar cane to Bululawang sugarcane varieties.

Suggestion

Until now, many new sugarcane varieties have been developed which also have high yield and productivity potential, so it is necessary to investigate the feasibility of farming and the attractiveness of sugarcane farmers to plant these new varieties to support the variety arrangement program launched by the Sugar Factory in Java. East.

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