EFFECT OF INTERNAL AND EXTERNAL FACTORS OF AGAINST SUGARCANE FARMERS INCOME IN NGIMBANG LAMONGAN

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ABSTRACT

This study aims to determine the effect of internal factors (culture techniques, cane varieties, fertilizer / fertilization, costs) and external factors (yield, price) to the sugarcane farmers' income and at the same time to determine the factors that most influence the sugarcane farmers' income in the subdistrict Ngimbang Lamongan.Moreover, The independent variables examined in this study consisted of technical culture (X1), varieties of sugarcane (X2), fertilizer / fertilization (X3), costs (X4), yield (X5), price (X6), and the affected variable is the income of sugarcane's farmer (Y). Technical culture has five indicators, that include land selection (A-1), cropping patterns (A-2), tillage (A-3), plant maintenance (A-4) and the optimization of cutting and hauling (A-5). Sugarcane varieties has five indicators, that include seed quality optimization standards (B-6), production potential optimization (B-7), varieties composition arrangement(B-8), growing season (B-9), seed certification program (B-10). fertilizer / fertilization has four indicators, that include, fertilization timeliness (C-11), Exact fertilizer dose (C-12), Exact fertilizers application (C-13), and exact fertilizer type (C-14). Cost has three indicators, that include the cost of production inputs (D-15), labor costs (D-16), the cost of capital (D-17). The yield of having three indicators, that include the potential of sugarcane varieties (E-18), maturity or sugarcane's age (E-19), and the quality of cane raw materials (E-20). Price has two indicators, that include the price of sugar (F-21) and the price of sugarcane (F-22). Sugarcane farmers' income has three indicators, which are internal factor (G-23), external factors (G-24), net profit (G-25). The analytical tool used in this study is the analysis of quantitative data and qualitative data analysis. In quantitative data analysis multiple linear regression is use for analytical function. The population in this study are all cane farmers in the Ngimbang subdistrict at Lamongan, who manages his own cane on land as well as land leased and has been farming sugarcane more than one growing season (1 year). While the sample used amounted to 116 respondents with a random sampling technique. Based on the analysis that has been made in which all factors (technical culture, varieties, fertilizer / fertilization, cost, yield and price) has a significant effect on the sugarcane farmers income in Ngimbang Lamongan. While, the price factor is the biggest influence on the sugarcane farmers income in Ngimbang Lamongan, followed by technical culture factors, cost factors, fertilizer / fertilization, yield factors and varieties.

Keywords: Technical Culture, Varieties, Fertilizer / Fertilization, Cost, Yield, And Price

INTRODUCTION

Indonesia has experienced the glory of sugar industry in the 1930s. This can happen due to the ease of obtaining fertile land, cheap labor, irrigation priorities, and discipline in the technology application (Susila, 2005: 1)

As a country with growing purchasing power, Indonesia has the potential to become one of the world's largest sugar consumer. In accordance with research Sugiyanto (2007) Indonesian sugar consumption in 2014 reached 11.47 kg per capita/year and will increase to 13.06 kg per capita/year by 2020, this figure is still below the average of world sugar consumption that have been reach 20 kg per capita per year (Sugiyanto, 2007: 114).

Government and sugar industry stakeholder in Indonesia should aware of business opportunities above and take proper action. Indonesia was known as the leading world sugar producer in the past. The main production center of sugarcane plantations in Indonesia are located in: East Java, Central Java, Lampung, West Java and DI Yogyakarta, reaching 99.28% contribution to the total production of sugarcane plantations in Indonesia.

Sugarcane (*Saccharum officinarum Linn.*) Is a strategic commodity as the main raw material for the sugar manufacturer (Asmara and Nurholifah, 2010: 109). Demand increment for sugar should be able to provide the opportunities for sugarcane farmers to do farming. Sutrisno (2009: 155) says that agriculture and farming today not merely as a "*way of life*" but also has become the real business. Therefore, the farmers have to consider the business cost and income, including the income of farmers in managing the business.

Empirical data shows drop in sugar prices impact on farmers for their losses (read: a decrease of the farmers income), followed by shrinkage of sugarcane area, especially in the region that are highly dependent on sugarcane farmers, such as in East Java. As a matter of fact, in 2002 when the price of sugar fell from Rp 3,400 to Rp 2,600 per kg, sugar cane area in East Java in 2003 shrank as many as 11 thousand hectares. The sugar price reduction not only reducing sugarcane plantation area but also decreasing crop productivity, as farmers are reluctant to maintain good cane. Proven in 2002 averages the crystal (sugar) dropped from 5.27 tons per hectare to 5.17 tons per hectare (Toharisman, 2013). The low price of sugar is not the only one that affects the level of income of farmers. But is also influenced by factors in the sugar mills and cane growers quality (off farm and on farm).

The low yield and production of crystal sugar by Sutrisno (2009) due to the lack of proper technical culture, especially in terms of the selection of land, cropping pattern, soil tillage, crop maintenance, harvesting and transport optimization. Cultivation and management of sugarcane varieties that have not been in accordance with the planting season, is also a cause of low yield and production of crystal sugar.

In addition to the above problems, the determination of HPP (basic price) sugar policy in 2014 by the government through the Minister of Trade Regulation No. 25/2014

Benchmark Pricing White Crystal Sugar Growers in 2014 amounted to Rp 8,250 per kg was considered too low, where as the results based on yield calculations APTRI (farmers organizations) including Cost of Goods Manufactured (BPP) and the land lease should be Rp 9,500 per kg (Sunanto and Musyawir in Azizah, 2014).

From the description above, Internal Factors (teknnis culture, cane varieties, fertilizer / fertilizer, and costs) and External Factors (yield and price) simultaneously or partially can affect sugarcane farmers' income in Indonesia (Sutrisno, 2009 and Yanutya, 2013) including east of Java, Lamongan and Ngimbang. On the basis of the above problems, then a study entitled: "Effect of Internal and External Factors for Sugarcane Farmers Income in Ngimbang Lamongan", was performed.

Identification and Formulation of Problem

1. Are there affect of technical factors, cane varieties, fertilizer / fertilization, cost, yield, and price of against income cane farmers in Ngimbang Lamongan?
2. what is the most factor influential of incomes against sugarcane farmers in Ngimbang Lamongan?

Research Objectives

1. To determine the influence of technical culture, cane varieties, fertilizer / fertilization, cost, yield, and price of against income cane farmers in Ngimbang Lamongan.
2. To determine the most factor influential of incomes against sugarcane farmers in Ngimbang Lamongan.

Technical culture

According Kuntorohartono in Sutrisno (2009) technical culture is defined technically as a set of activities required to prepare the environmental conditions for the growth and development of sugarcane. Selection technique of field such as irrigated land done on the pattern A (May-July), while the rain-fed land, must follow the pattern B (September-November). Tillage aims to create the best conditions for the growth and development of sugarcane roots. Plant maintenance including fertilization, cultivation, weeding, pest control and disease, irrigation or drainage, and leaf stripping, should be intensively done and on time. Optimization of cutting transport associated with the age and maturity of the cane. Because transport is very complex cutting jobs, the amount of supply of cane every day, the availability of logging, transportation, the readiness of the road, cutting transport infrastructure, etc. Technical culture of sugar cane is often regarded as a pre-condition to support the response of fertilizer, improved varieties, irrigation, weed and pest control of the cooking process or filling the sugar in cane stalks (Sutrisno, 2009).

Sugarcane varieties

Variety is defined as a collection of plants which have genetic and phenotypic properties of the same. Yielding varieties is a collection of the same plant and have certain superior properties (Sugiyarta in Sutrisno, 2009). Some important things to note

associated with sugarcane varieties, are as follows: Optimization of seed quality standards through seed certification test. Optimization of the production potential by ensuring as much as possible so that the full potential of a superior varieties can be realized. Efforts to optimize the production potential of each variety can be a way to meet all the requirements to grow the best. Structuring varieties namely arranging varieties to match the maturity level of each variety of sugar cane and adapted to the harvest period. Planting season is the perfect time to perform activities of sugarcane cultivation.

In a study Sutrisno (2009) found that varieties very significant effect on sugarcane farmers income, it is reinforced by research Pratiwi and Priest (2003) which says that the contribution to the production of sugar varieties can reach 60%.

Fertilizers and Fertilization
Fertilizers are solids, liquids or gases containing nutrients that plants require, non toxic and can be administered through soil (Ismail in Sutrisno 2009). Applications and fertilization know-how is very important to produce optimal sugarcane yield (Nazir. Et.al, 2013). Research results Hussain and Khattak in Dlamini and Masuku (2012) found that increased use of chemical fertilizers can increase sugarcane productivity if applied on time, right dose, right methode of application, and the exact type of fertilizer used. Timely means fertilization when plants need extra nutrients. Fertilization should be done several stages according to the phases of sugarcane growth. This is consistent with that proposed by Sandara in Chidoko and Chimwai (2011) that timely aplicated fertilizer will produce the most good plant growth. Mean dose to the exact fertilizer application should be in accordance with the results of soil analysis. Exactly how the application means the application of fertilizer should be done the right way. The goal is that the fertilizer applied is not lost (especially nitrogen fertilizer) and also fertilizers are not easily swept away in the flow of surface water. The right kind of fertilizer meant for the use of fertilizers that have the exact nutrient content.

Cost
Cost is around the sacrifices or the input value used for farming process. Costs are grouped into: production cost, labor costs, and capital costs. Cost of production, are consisted of all supporting facilities costs that is related to sugarcane cultivation, these include: the cost of fertilizers, agricultural chemical costs, and others. Labor costs, which are expenses incurred to pay the wages of all workers or laborers for sugarcane cultivation activities. The capital costs associated with the additional amount of interest from each source of funds borrowed and used by farmers in the farm. Research Sutrisno (2009) found that the cost factor affects the income of farmers in sugar cane plant of Mojo Sragen.

Yield
Yield is sugar content in sugarcane expressed in percentage. Mochtar in Sutrisno (2009) yield is sugar produced from each quintal of sugarcane. Yield of sugarcane is strongly influenced by: the variety, maturity (sugarcane age) and quality of raw materials from the field until the sugar cane milled (Marjayanti 2006 in Sutrisno, 2009). Several factors that affect the yield are as follows: The potential varieties or any variety characters in

addition to the technical culture, climate factors influence on the yield of sugarcane, Maturity and age related to the future sugarcane planting. If the cane is planted in the right age and maturity of the obtained optimal cane. The quality of raw materials associated with slash transport process. Harvested cane must be sweet, clean and fresh. The results of the study Sutrisno (2009) that the yield factor biggest impact on farmers income in the plant cane sugar Mojo Sragen.

Price

Price is the amount of money exchanged for a product or service. Price is the amount of value exchanged for a number of consumer benefits by having or using a product or service. The common perception is that it applies a high price reflects its high quality (Tjiptono 2008 in Yanutya, 2013). Sugar price despite market affecting its mechanism, but HPP (basic price) of sugar from the government remain as the benchmark. Yanutya Research (2013) find that the price has a positive and significant relationship to the sugarcane farmers income in Japon Blora.

Sugarcane Farmers Income

Rahim in Yanutya (2013) says that farm income is the difference between revenue and all costs incurred in farming. Revenues and costs of farming can be influenced by internal and external factors. Internal factors that affect farmers' income include: technical culture, varieties, fertilizers, and farming costs. External factors that affect farmers' income, including: the yield and price of sugarcane. Gross receipts is the result obtained by multiplying production by selling price in the sugar cane milling season (in Yanutya Rahim, 2013). Net profit (income) is the difference between total revenue and total cost incurred in the production process, in which all inputs family-owned calculated as production costs (Sukirno in Yanutya, 2013).

Hipotesis

H1   : The technical culture would affect sugarcane farmer's income
H2   : The sugarcane varieties would affect sugarcane farmer's income
H3   : The fertilizer / fertilization would affect sugarcane farmer's income
H4   : The cost factor would affect sugarcane farmer's income
H5   : The yield of sugarcane would affect sugarcane farmer's income
H6   : The price of sugarcane would affect sugarcane farmer's income

Research approach

This study was a quantitative descriptive survey method. To confirm and clarify the results of quantitative research, qualitative research was also conducted using in-depth interviews with some farmers selected respondents. Interviewed farmers should be able to represent the overall sugarcane farmers, as well as having extensive knowledge and insight about the sugar cane farming. Both studies quantitative and qualitative conducted in the same population, ie sugar cane farmers who are sub district of Ngimbang Lamongan. This method is said to be suitable Sugiyono (2014: 83) that the survey method used to obtain the data from a particular place is conventionally using the data collection instrument or in the form of questionnaires and interviews.

Sampling Method

The sampling method with probability sampling, the sampling techniques that provide equal opportunities for every member of the population to be elected as members of the sample. The population in this study were all cane farmers in the district who are Ngimbang Lamongan, has made farming more than one growing season. The sample is part of a population whose characteristics are considered representative of the population.

Data Collection Method

1. Quantitative Data Collection

Questionnaire used in the data collection according Likert scale, which is commonly used to measure attitudes, opinions, and perceptions of a person or group of people about the phenomenon. The Likert scale gradation, as follows: (4) Strongly Agree, (3) Agree, (2) Disagree, (1) Strongly Disagree. Before being used to retrieve data, such instruments will be tested for validity and reliability.

2. Qualitative Data Collection

Qualitative data was collected by conducting in-depth interviews (indept interview) against three farmers (informants) were purposefully selected and has advantages compared with other farmers. And the data were extracted from the interview revolves around the statements contained in the instrument (questionnaire) from quantitative research.

Quantitative Data Analysis

1. Multiple Linear Regression Analysis

Multiple linear regression analysis formula, as follows:

$$Y = a + b_1 x_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + €$$

Y = income of farmers
X1 = technical culture
X2 = sugarcane varieties
X3 = Fertilizer / fertilization
X4 = Cost
X5 = Yield of
X6 = Price
A = constant Numbers
b1 = regression coefficient of the variable X1
b2 = regression coefficient of variable X2
b3 = regression coefficient of variable X3
b4 = regression coefficient of variable X4
b5 = Regression coefficient variable X5
b6 = regression coefficient of variable X6
€ = Error (error term).

2. Testing Parameters

2.1. Individual Significance Test (Test Statistically t)
Aiming to compare whether two samples are from the same population or not. According Kuncoro (2013: 244) t statistical test basically shows how far the influence of the individual independent variables in explaining the affected variable variation.

2.2. Accuracy Test Model
2.2.1. Simultaneous Significance Test (Test Statistic F)
F statistic test shows whether all the independent variables included in the model have jointly effecting the dependent variable.

2.2.2. The coefficient of determination (R2)
Determination coefficient (R2) measures how far the model's ability to explain variation in the dependent variable. Determination coefficient is between zero and one. Value close to one means that the independent variables provide almost all the information needed to predict the dependent variable (Kuncoro, 2013: 246).

2.2.3. Coefficient of Partial Determination (Partial R2)

Partial determination coefficient (R2 partial) aims to determine the most influential independent variable on the dependent variable. The independent variables that have the largest partial R2 values are independent variables that the most influence to the dependent variable.

Qualitative Data Analysis
According Creswell in Sugiyono (2014: 347) says that qualitative research means the process of exploration and understanding the meaning of the behavior of individuals and groups, describing social problems or problems of humanity.

Results of Multiple Linear Regression Analysis

Table 1: Results of Multiple Linear Regression Analysis

Variable	Coefficient Regression	Coefficient Beta	t	Sig
Constante	-1,687		-2,535	0,013
Technical culture (X1)	0,141	0,209	2,259	0,026
Cane Varieties (X2)	0,109	0,145	2,115	0,037
Fertilizer/pertilization (X3)	0,159	0,162	2,464	0,015
Cost (X4)	0,171	0,178	2,557	0,012
Yield (X5)	0,154	0,145	2,431	0,017
Price (X6)	0,332	0,241	3,636	0,000
F_{hitung} = 69,793 R^2 = 0,793 Sig. F = 0,000				

Sources: Statistical analysis of research data

1. Test Accuracy Parameter Estimates (t-test)

In testing the accuracy of parameter estimators (t test) showed variable technical cultures obtained t value of 2.259 > 1.984 means technical culture has a positive and significant effect on the income of farmers. Varieties obtained t value 2.115> 1.984 means that the varieties have a positive and significant effect on income of farmers. Fertilizer/fertilization obtained t value 2.464 > 1.984 means that the fertilizer has a positive and significant effect on income of farmers. Costs obtained t value of 2.557 > 1.984 means that the cost has a positive and significant effect on the income of sugarcane farmers. The yield of obtained t value of 2.431 > 1.984 means that the cost has a positive and significant effect on the income of sugarcane farmers. Price obtained t value of 3.636 > 1.984 means that the price has a positive and significant effect on income of farmers.

2. Test Model Accuracy

2.1. Test F
Results of F statistical analysis of the obtained results calculated F   69.793 with a significance of 0.000. Calculated F value is greater than 2.18 (69.793 > 2.18) means that there is an influence jointly between the independent variables (technical culture, varieties, fertilizer / fertilization, the cost of yield and price) of the variable income of farmers. The results of the regression analysis show that the model is correct.

2.2. The coefficient of determination (R2)
The coefficient of determination is used to determine how much the independent variables can explain the dependent variable. R2 value of 0.793 indicates the selection of the independent variables in explaining the variation in revenue of 79.3%, the remaining 20.7% is determined by other variables outside the model. Thus the selected explanatory variables are able to explain the variation in income.

2.3. Coefficient of Partial Determination (Partial R2)
Based on the analysis of the data found that the independent variable has a value price largest partial R2, is equal to 0.241 This means the greatest effect on the dependent variable Y (sugarcane farmers income). Followed by variable technical culture = 0.209; variable costs = 0,178; variable fertilizer / fertilization = 0.162 and variable yield and sugarcane varieties respectively = 0.145

Discussion

1. Effect of Technical Culture Against Farmers Income
Technical culture positive and significant effect on income of sugarcane farmers in Ngimbang Lamongan. This means determine the technical culture of sugarcane farmer's income. The more intensive cultivation of the technical implementation of sugarcane production and farmers income will be higher. It is appropriate that the Kuntorohartono in Sutrisno (2009) said that the technical culture is a set of activities required to prepare the environmental conditions for growth and development that is good for the plant cane, then Dlamini and Masuku (2012) says that a good technical culture is very important to increase production sugarcane farmers, so as to increase the income of farmers. This fits well with one of said cane farmers in Ngimbang named: Ismuntoyo, in an interview with the researcher, as follows:

"...... we have to increase farmer awareness in proper cane cultivation" (02 / IS / II / 20-22).

With regression coefficient of the variable X1 (b1) is equal to 0.141 means that if another state does not change then any changes and increase agronomic treatments led to an increase in farmers' income of up to 14.1%.

2. Effect of Varieties Against Farmers Income
Sugarcane varieties grown by farmers has positive and significant effect on their income. If the other variables does not change, then the proper selection of varieties of sugar cane, can increase revenue by as much as 10.9% compared to the previous. The importance of selecting appropriate varieties of sugar cane Sutrisno (2009) said that the varieties of very significant effect on sugarcane farmers income, it is reinforced by research Pratiwi and Priest (2003) which says that contribute to the production of sugar varieties can reach 60%. However, the actual implementation is not fully utilize. This is similar to sugar cane growers say (informant) Ngimbang named Soli, as follows:

"While this plant was no pack is how it fits great varieties in dry land was still difficult, which many here is the only BL, the BL is susceptible to dry, well yes indeed the yield is low" (01 / SL / III / 4 -6).

In addition, local sugar factory should become farmers advisor in each sugar cane development region.But in the otherhand, they failed to perform this role actively, this is in accordance with the farmers Ismuntoyo statements:

"Composition ... varieties, we should get important guidance with intensive counseling, insight to our farmers more detail maybe we can arrange it, however sugar factories previously was not prioritizing varieties depiction, in this point, early, middle end "(02 / iS / III / 29-33)

3. Effect of Fertilizer / fertilization Against Farmers Income

Fertilizer/fertilization positive and significant impact on the sugarcane farmers income. If the other variables does not change, then the fertilization is done on time, exact dose, exact methode and the right type of fertilizer, it will be able to increase the sugarcane farmers income up by 15.9% from the previous state. This is in accordance with Hussain and Khattak in Dlamini and Masuku (2012) that the increased use of chemical fertilizers can increase sugarcane productivity if applied on time, right dose, right way of application, and the exact type of fertilizer used. Similarly, Sandara said in Chidoko and Chimwai (2011) that timely fertilizers application will produce the most good plant growth. But the influence of Fertilizer/fertilization especially in Ngimbang should still be improved. Because of interviews with informants, sugar factory has not given intensive counseling and sustainable sugarcane farmers surrogate; as well as the procurement of fertilizer for farmers is also not maximized. It is appropriate that said farmer (informant) Ismuntoyo:

"During this time, you may ask all farmers and you might be wondering maybe sugar factory does not exist here, only vast sugar cane plantation, the sugar factory management does not educate us on how to cultivate good cane quality with high yield" (02 / IS / IV / 17-20).

"as the time goes, it is more difficult to find fertilizer in lamongan and the price become more expensive every year. If there are no more choices, farmers sometime buy non-subsidized fertilizer. I feel pity to our farmers,"(02 / IS / IV / 26-31).

Farmers sometimes do not get the full subsidized fertilizer quota , therefore aiming for the right dose also became an obstacle. This situation is reinforced by Soli farmers statement, as follows:

"It is correct that sugar factory itself never facilitate the needs of farmers. For example one ha, one ha can use up to to one and a half-ton, but it is sometimes only seven hundred were sent"(01 / SL / IV / 26-29)

4. Effect of Costs Against Income Farmers

The cost factor farming positive and significant impact on farmers income. From the results of this study demonstrated that with the proper allocation of costs could increase farmers income of up to 17.1% (other conditions being equal). This is supported by the results of the same research Sutrisno (2009) in Mojo sugar mill in Sragen, that is very influential factor in the cost-to-income farmers. consistently Soli (informant) also stated:
"Highly influential pack (read: fertilizer), and a lot of capital, probably added big maybe" (01 / SL / V / 31-32)
Similarly Ismuntoyo say about this cost issue, as follows:

"certainly influencing the income, if we're managing the cost properly then we would be able to lower the cost. (02 / IS / V / 4-10).

5. Effect The yield Against of Farmers Income

The sugarcane yield would positively and impacting singnificantly on the sugarcane farmers income. Any increase in yield can affect farmers income by 15.4% (if the other state does not change). This is in contrast to research Sutrisno (2009) in Mojo Sragen, where it says the greatest influence; however not the case in Ngimbang. This is probably caused by differences in the region and the condition of farmers in each of these regions. Effect of the yield to the income of farmers is also justified by the farmer Ahmad Basoni, as follows:

"The Sugar cane variety can affect yield and quality" (03 / BS / VI / 3-5)

6. Effect the Price of Against Farmers Income

Posisitif factors influence the price and very significant compared to other factors. If other conditions remain, so if there is an increase in sugar prices by the government and or increase in sugarcane prices for farmers as a result of market mechanisms; then the situation can increase farmers income by 33.2%. This situation is in line with the results of the research Yanutya (2013) in the sub district Japon Blora, that price has a positive and significant relationship to the sugarcane farmers' income. Toharisman in "20th Asia International Sugar Conference 25-28 August 2014" in Jogjakarta, also reinforces this situation, as follows: "Price reflecting sugar policy. Sugarcane (sugar) production, productivity and area were strongly affected by the relative price of sugar (farmer benefits)" One of the farmers in Ngimbang (Soli) related to the issue price also says:

" Yes, It would affected (read: price)" (01 / SL / VI / 5)
"expensive labor, transportation also getting more expensive" (01 / SL / VI / 7)

"The price is really low, currently already reached Rp8,200,-/kg" (01 / SL / VI / 9-10)

Then the same thing is said by farmers Ismuntoyo and Ahmad Basoni related to the issue price, as follows:

"Definetely , sugar price decrease so the sugarcane price during the action will also fall. While the cost for maintenance, cuting and transportation cost are getting more expensive each day. This made farmers lose hope "(02 / IS / VI / 7-10)

"Yes obviously, with the current pricing issue, we could not survie" (03 / AB / VI / 5-6)

7. Effects of All Variables Against Farmers Income

Based on multiple linear regression analysis it is known that the regression coefficients of each independent variable is positive, so that said variable technical culture, varieties, fertilizer / fertilization, cost, yield, and price jointly positive effect on sugarcane farmers income.

From the analysis of the above data, the value of the coefficient of determination (R2) of 0.793. This means that the relative contribution provided by a combination of variable technical culture, varieties, fertilizer / fertilization, yield, and price to earnings

sugarcane farmers in Ngimbang Lamongan amounted to 79.3% while the rest is influenced by other variables.

Among all independent variables were tested, it is known that the variable X6 has the greatest value of the beta coefficient: 0.241. Thus it can be said, that the price factor is the biggest impact among the six other factors, especially in Ngimbang Lamongan.

Conclusion

Based on the analysis of data and the above discussion it can be concluded as follows:

1. The internal factors (technical culture, sugarcane varieties, fertilizer / fertilization, and costs), respective positive and significant effect on farmers income. Furthermore, external factors (yield and price) of each positive and significant impact on the sugarcane farmers income.
2. Contributions sixth variable (technical culture, varieties, fertilizer / fertilization, cost, yield, and price) to the sugarcane farmers income reached 79.3%; while the remaining 20.7% determined by variables outside the model.
3. Price factors is the biggest factor influence on sugarcane farmers income in Ngimbang Lamongan.

Suggestion

1. For academics, further research needs to be conducted to determine other factors that may affect sugarcane farmers income.
2. For the government it is advisable to focus more on policy determines the price of sugar, as this is the most decisive factor in the sustainability of farmers trying to farm sugar cane.
3. For the sugar factory recommended providing intensive and ongoing counseling to reduce the cost of farming. Thus, the sugarcane farmers' income could be increased.

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