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SOCIO-ECONOMIC FACTORS INFLUENCING THE PROSPERITY OF TOBACCO FARMERS IN PROBOLINGGO REGENCY: A BUSINESS MANAGEMENT PERSPECTIVE

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ABSTRACT

The income of tobacco farmers in Probolinggo Regency is often unstable due to fluctuations in the prices of production factors and tobacco products, impacting their earnings and socio-economic conditions. The objectives of this study were: (1) to analyze the income of tobacco farmers; (2) to identify the factors influencing their income; and (3) to examine their social conditions. The data analysis method employed was multiple regression analysis. The results of the study revealed that: (1) the average income of tobacco farmers in Probolinggo Regency is IDR 18,540,000 per hectare per planting season, with an R/C ratio of 1.6; (2) the factors influencing the income of tobacco farmers include the prices of seeds, urea, ZA (ammonium sulfate), and pesticides; (3) 83% of the tobacco farmers own their houses, which are made of permanent materials. Common household electronic items owned by the farmers include refrigerators, televisions, and mobile phones. Regarding transportation, 57% of the farmers use bicycles, 28% use motorcycles, and 14.29% use cars to commute to work and take their children to school. The average family size is three members, consisting of two children and one spouse. Tobacco farmers feel comfortable in their environment, as evidenced by their active participation in activities such as repairing irrigation systems, cleaning the surroundings, and building worship facilities and social spaces to foster community relationships. This indicates that the socio-economic conditions of tobacco farmers are adequate and prosperous.

Keywords: tobacco; farmers; socio-economic.

INTRODUCTION

The primary goal of long-term economic development in Indonesia is to achieve a balance between the agricultural and industrial sectors (Hill, 2000; Tambunan, 2017; Thorbecke & Van Der Pluijm, 1993; Woo et al., 1994). This balance can be attained when a robust agricultural sector supports a thriving industrial economy. As a driver of agricultural development, the agro-industry is expected to play a significant role in regional development activities to ensure equitable economic growth (Ahmad, 2020; Faqih et al., 2020). The presence of agro-industry in rural areas is anticipated to increase the demand for agricultural products. This is because the agro-industry sector transforms agricultural outputs into commodities beneficial for society's needs. Therefore, agricultural development related to the growth of the agro-industry needs to be oriented towards rural areas (Soekartawi, 2001).

Tobacco is a cross-sectoral commodity with a strategic position that attracts widespread attention. Despite not being native to Indonesia, tobacco has been appreciated and recognized by the population through its widespread use, transcending economic classes. Additionally, the geographical conditions of several regions in Indonesia, including parts of Probolinggo Regency, support an agriculture sector predominantly run by farmers. Tobacco plays a crucial role in the social, economic, and trade sectors (Mackay & Eriksen, 2002; Monge Bonilla, 2012; Warner, 2000; World Health Organization, 2017). Domestic demand for local tobacco is primarily driven by cigarette manufacturers. Fundamentally, the government must support and facilitate agricultural development and livelihood, including establishing tobacco-based industrial areas. Tobacco is a key agribusiness commodity that provides extensive employment opportunities and generates income for communities at every level of its agribusiness chain. It also supports the economy through the excise tax revenue it generates (Widoyo, 2003).

Probolinggo is one of the regencies in East Java known for producing high-quality tobacco. Almost all farmers in the seven districts, namely Kraksaan, Krejengan, Besuk, Kotaanyar, Paiton, Pakuniran, and Pajarakan, with either paddy fields or non-paddy land, strive to capitalize on the opportunity to plant tobacco, as it is considered highly profitable with a sufficiently high selling price if good quality tobacco is produced. However, many farmers feel that the tobacco commodity in Probolinggo Regency is not as favorable as it was in the past. In reality, tobacco farming in Probolinggo Regency experiences fluctuating production each year. Tobacco production is fundamentally influenced by climate, area size, and the number of plants cultivated based on the available land.

Table 1 below shows the tobacco production in Probolinggo Regency and its cultivation areas. Production fluctuates, and in some areas, it even declines yearly. The price of tobacco in Probolinggo Regency ranges between 40,000 to 45,000 IDR per kilogram. However, this price also experiences fluctuations, notably decreasing to around 30,000 IDR per kilogram in 2020. This situation has led to disappointment among tobacco farmers in Probolinggo Regency, resulting in a lack of motivation to continue tobacco farming due to losses and the inability to cover their farming expenses.

There are 26 tobacco processing industries spread across the seven major tobacco-producing districts in Probolinggo Regency. Among these, three major industries include PT. Surya Putera Eka Karunia in Paiton, PT. Gudang Garam Tbk in Paiton, and PT. HM. Sampoerna in Kraksaan. These industries rely on the tobacco produced in Probolinggo Regency.

Table 1. Tobacco Production in 7 Central Districts of Probolinggo Regency (2016-2020)

District	Description	2016	2017	2018	2019	2020
Pakuniran	Production (tons)	1,694.90	1,547.80	1,390.10	1,215.65	1,048.65
	Planting Area (Ha)	1,385	1,244	1,091	1,014	817
Besuk	Production (tons)	21	21.1	23.6	24.9	24.9
	Planting Area (Ha)	2,188	2,188	2,188	1,662	1,662
Krejengan	Production (tons)	3,893	3,711	4,406	3,899	2,147

	Planting Area (Ha)	2,169	2,068	2,455	2,172	2,147
Kotaanyar	Production (tons)	16.1	16.1	16.1	16.1	16.1
	Planting Area (Ha)	1,428	1,436	1,640	1,318	1,628
Paiton	Production (tons)	-	-	-	-	48.6
	Planting Area (Ha)	-	-	-	-	36
Kraksaan	Production (tons)	1,484.20	1,525	1,505.40	1,470.60	1,206.90
	Planting Area (Ha)	-	-	-	-	2,087
Pajarakan	Production (tons)	195	267	337.5	384	397.5
	Planting Area (Ha)	150	178	225	240	265

Source: Probolinggo Regency Agriculture Office, 2021

The government will establish a tobacco product industrial zone in one of the tobacco-producing areas in Probolinggo Regency. The development of this Tobacco Product Industrial Zone aims to advance the tobacco industry in Probolinggo Regency, which will, in turn, improve the welfare of tobacco farmers in the region. The Probolinggo Regency government also provides advice and supplies other agricultural needs such as seeds, seedlings, fertilizers, and additional support necessities. These efforts are targeted at the mentored tobacco farming groups. The income of tobacco farmers is influenced by the price of tobacco per kilogram, which is affected by certain factors.

METHODS

The Social Economic Research on Tobacco Farmers in Probolinggo Regency was conducted in 24 administrative districts, with sampling in 7 districts as the main tobacco production centers. The subjects used for data collection were the most reliable and up-to-date data from the local government and related agencies. The research utilized both qualitative and quantitative data, including secondary data such as records, reports, guidelines, papers, and statistics, as well as primary data collected through Focus Group Discussions (FGDs) with relevant agencies and field surveys.

The primary method employed in this study is the descriptive method, focusing on solving current problems to provide a systematic, factual, and accurate description of the phenomena being studied. Initially, the data is collected, organized, described, and then analyzed (Nawawi, 2015). Survey location determination was carried out using purposive sampling, where the sample is intentionally chosen to meet specific criteria (Wasito, 1992). The survey targeted tobacco farmers in the districts of Kraksaan, Krejengan, Besuk, Kotaanyar, Paiton, Pakuniran, and Pajarakan, which are the main tobacco production centers in Probolinggo Regency.

The sample determination method used the Snowball Sampling technique, where initial respondents provide information about other potential respondents, resulting in 10 potential tobacco farmers per district being selected. These farmers either own tobacco plantations or work in the area. Data collection methods included literature review, FGDs, and recording. The literature review identified the general and specific conditions in Probolinggo Regency, examining documents, records, and literature from various media. Basic data required included the general state of the region, poverty data

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from the Central Statistics Agency (BPS), the 2020 Regent Accountability Report, and relevant data from tobacco research in Probolinggo Regency. FGDs aimed to delve deeper into the socio-economic aspects of tobacco farmers, involving related agencies and using data tabulation instruments. Additionally, questionnaires were distributed to tobacco farmers, containing direct questions to obtain relevant and highly valid data.

The research variables were operationalized and measured as follows (Sugiyono, 2017):

Y = Income (Rupiah)
X1 = Land Rent (hectare)
X2 = Seed Price (per plant)
X3 = Urea Price (kg)
X4 = ZA Price (kg)
X5 = SP-36 Price (kg)
X6 = Pesticide Price (package)
X7 = Labor (package)

Data analysis was conducted using multiple regression analysis to predict the influence of two or more independent variables on one dependent variable. This analysis determines whether there is a relationship between independent variables (X1, X2, X3, ..., Xn) and the dependent variable (Y), and whether these relationships are positive or negative. The regression model is as follows:

$Y=a+b1X1+b2X2+b3X3+...+bnXn$

where Y is the dependent variable, X(1,2,3,...) are the independent variables, a is the constant, and b(1,2,3,...) are the regression coefficients.

Assumptions for regression analysis were tested as follows:

Normality Test:

According to Ghozali (2006), the normality test checks if residuals in a regression model are normally distributed. The Kolmogorov-Smirnov test was used, with the criteria that if the significance value is > 0.05, the residuals are normally distributed; if < 0.05, they are not.

Autocorrelation Test:

This test examines if there is a correlation between residuals at different times (Ghozali, 2006). A good regression model should be free from autocorrelation.

Multicollinearity Test:

This test checks if there is a correlation among independent variables (Poole & O'Farrell, 1971). The tolerance value and Variance Inflation Factor (VIF) were used, with tolerance > 0.10 and VIF < 10 indicating no multicollinearity.

Heteroskedasticity Test:

This test checks if the variance of residuals is consistent across observations (Mills & Mills, 2014). A good regression model should exhibit homoskedasticity, which was checked using a Scatterplot graph.

Model Fit and Determination Coefficient:

The coefficient of determination indicates how well the independent variables explain the dependent variable. A lower Standard Error of Estimate (SEE) suggests a better fit.

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F Test:

The F test determines the simultaneous effect of independent variables on the dependent variable. If the significance value is < 0.05, the independent variables significantly affect the dependent variable.

t Test:

The t test examines the partial effect of each independent variable on the dependent variable. If the significance value is < 0.05, the independent variable significantly affects the dependent variable.

RESULTS AND DISCUSSION

Analysis of Tobacco Farmers' Income

The land ownership status of farmers in Probolinggo regency is not always individual-owned. Farmers typically incur costs for land rental, amounting to Rp. 7,500,000 per hectare. The average selling price per kilogram for Grade A dried tobacco leaves is Rp 32,000, while Grade B dried tobacco leaves are priced at an average of Rp 25,267/kg, and Grade C dried leaves are priced at Rp 18,958/kg. Grade A tobacco consists of upper-grade leaves, representing the highest quality. Grade B tobacco consists of middle-grade leaves, indicating a standard quality lower than Grade A. Grade C tobacco comprises lower-grade leaves with comparatively lower quality and, consequently, a lower selling price compared to Grade A and Grade B tobacco.

Table 2. Total Costs, Total Production, Revenue, Profit, and R/C Ratio of Tobacco Farming in Probolinggo Regency, 2022

No.	Description	Price (Rp)	Volume	Total (Rp)
A.	Fixed Costs			
	- Land Rent	7,500,000	1 Ha	7,500,000
B.	Variable Costs			
	- Seeds	20,000	40 Bars	800,000
	- Fertilizers			
	SP-36	2,400	100 Kg	240,000
	ZA	1,700	100 Kg	170,000
	Urea	2,250	200 Kg	450,000
	- Pesticides	1,000,000	1 Package	1,000,000
	- Labor			
	- Tractor Rental	200,000	1 Package	1,200,000
	- Bed Making, Soil Cultivation	50,000	40 HOKp	2,000,000
	- Planting	40,000	30 HOKw	1,200,000
	- Weeding, Irrigation, Mulching	50,000	20 HOKp	1,000,000
	- Fertilization	50,000	20 HOKp	1,000,000
	- Pest and Disease Control	50,000	10 HOKp	500,000
	- Harvesting	50,000	70 HOKp	3,500,000
	- Transportation	150,000	6 Package	900,000

No.	Description	Price (Rp)	Volume	Total (Rp)
	- Packing	50,000	20 HOKp	1,000,000
	- Sorting	100,000	30 HOKp	3,000,000
	- Displaying	45,000	60 HOKw	2,700,000
	- Drying	50,000	40 HOKp	2,000,000
	- Packaging	50,000	20 HOKp	1,000,000
	- HIPPA	600,000	1 HOKp	600,000
Total Costs A + B				**25,160,000**
Total Production		1,600 Kg		
Revenue		32,000	**51,200,000**	
Profit			**18,540,000**	
R/C Ratio			**1.6**	

Source. PPL Probolinggo Regency

Factors Influencing Tobacco Farmers' Income

The analysis of factors influencing farmers' income begins with the classical assumption test. This test aims to analyze several assumptions of the regression equation generated to ensure its validity for prediction. According to Williams et al. (2019), regression analysis necessitates the fulfillment of several assumptions for the resulting regression equation to be valid for prediction. The discussion regarding these assumptions in regression analysis is as follows:

1. Normality Test

The normality test aims to determine whether in the regression model, the dependent variable, independent variable, or both, follow a normal distribution. To detect whether residuals follow a normal distribution, the Kolmogorov-Smirnov Test is employed.

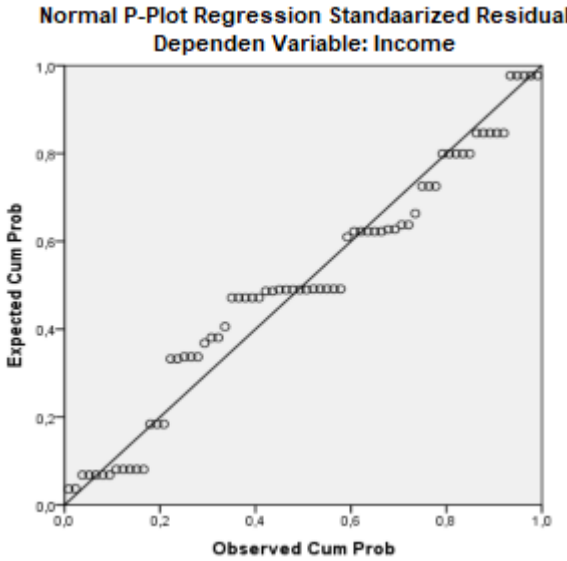

Figure 1. P – Plot Normality Test

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From the P-P plot graph above, it can be concluded that the points closely follow and approach the diagonal line, indicating that the regression model satisfies the assumption of normality, meaning the data are normally distributed. However, this graph may not necessarily reflect reality, and thus further verification is needed through statistical testing using the Kolmogorov-Smirnov test.

Table 3. Normality Test One-Sample Kolmogorov-Smirnov Test for Income

Parameters	Normal
Mean	49,564,285.71
Std. Deviation	17,561,874.865
Most Extreme Differences	
Absolute	0.183
Positive	0.183
Negative	-0.135
Kolmogorov-Smirnov Z	1.532
Asymp. Sig. (2-tailed)	0.018

a. Test distribution is Normal.
b. Calculated from data.
Source: SPSS output

The table above indicates that the significant value is 0.018, which is greater than 0.05. When the significant value is > 0.05, the residual value is normally distributed. Thus, based on the data analysis results, it can be concluded that the residual values above follow a normal distribution.

2. Autocorrelation Test

The purpose of the autocorrelation test is to examine whether there is correlation between the disturbance errors at period t and the disturbance errors at period t-1 or earlier periods in a linear regression model (Ghozali, 2011). If correlation exists, it indicates autocorrelation issues. A good regression model is one that is free from autocorrelation. In this study, the Durbin–Watson test (DW) is employed for this purpose.

Table 4. Autocorrelation Test (Model Summary)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.973	0.948	0.942	4244593.525	0.460

a. Predictors: (Constant), labor force, price of ZA, price of urea, land rent, price of SP-36, seed price, pesticide price
b. Dependent variable: income.

Autocorrelation detection is performed using the Durbin-Watson test. Seven independent variables were utilized, with 70 observations. The Summary model table indicates a Durbin-Watson value (dw) of 0.460. According to the Durbin-Watson decision rule, this value falls within the range dw (0.460) < dL (1.401), hence it can be concluded that positive autocorrelation exists.

3. Multicollinearity Test

The multicollinearity test aims to determine whether a regression model in a study exhibits correlations among independent variables. According to Ghozali (2011), the assessment of multicollinearity considers the tolerance value and the Variance Inflation Factor (VIF). The results of the multicollinearity test in this study are as follows:

Table 5. Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
Constant	-	-
Land Rent	0.148	6.766
Seed Price	0.131	7.611
Urea Price	0.358	2.792
ZA Price	0.533	1.876
SP-36 Price	0.212	4.727
Pesticide Price	0.083	12.046
Labor Price	0.252	3.969

a. Dependent Variable: Income
Source: SPSS Output

From the table above, several variables exhibit VIF values < 10, namely land rent 6.766, seed price 7.611, urea price 2.792, ZA price 1.876, and SP-36 price 4.727, indicating no multicollinearity. However, the VIF value for pesticide price is > 10, specifically 12.046, indicating multicollinearity. Meanwhile, the tolerance values for all variables in the table are > 0.10, signifying freedom from multicollinearity.

4. Heteroskedasticity Test

The purpose of the heteroskedasticity test is to examine whether there is variability in the regression model where the variables from one observation to another differ. If the variance of the residuals remains constant from one observation to another, it is called homoskedasticity; otherwise, it is called heteroskedasticity. A good regression model is one that exhibits homoskedasticity and lacks heteroskedasticity (Ghozali, 2006). The method used in this research involves examining the scatterplot graph. The results of the heteroskedasticity test can be observed in the scatterplot graph, as shown below:

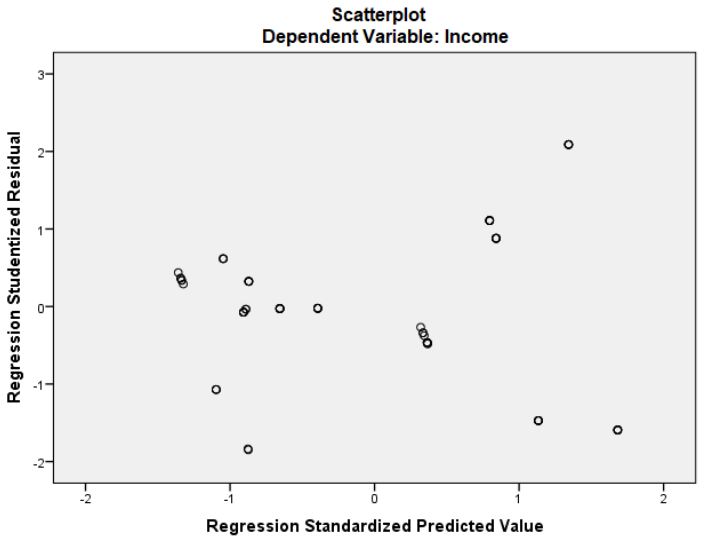

Figure 3. Heteroskedasticity Test

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In the above figure, it can be observed that the points' distribution does not form any specific pattern or trend. The data distribution resulting from regression analysis yields a random pattern. Thus, it can be concluded that there is no evidence of heteroskedasticity in the above model, or in other words, homoskedasticity is present.

5. Multiple Regression Analysis

Multiple regression analysis is a method used to predict the influence of two or more independent variables on a dependent variable. Simply put, it aims to determine whether there is a relationship between two or more independent variables, X1, X2, X3,...,Xn, on one dependent variable, Y. This analysis is conducted to ascertain the direction of the relationship between independent and dependent variables, whether each independent variable is positively or negatively related, and to predict the value of the dependent variable when the independent variables experience an increase or decrease. The equation for multiple regression is as follows:

$Y = a + b1X1 + b2X2 + b3X3 + ... + bnXn$

Table 6. Regression Coefficient

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	
(Constant)	-199,685.931	202,001.739		-0.099
Land Rent	0.853	0.678	0.095	1.259
Seed Price	138.238	13.757	0.807	10.049
Urea Price	-28.180	5.388	-0.254	-5.231
ZA Price	-22.666	2.325	-0.384	-9.637
SP-36 Price	9.336	7.013	0.084	1.331
Pesticide Price	224.475	57.120	0.397	3.930
Labor	-1.322	0.665	-0.115	-1.987

Notes:
B represents the unstandardized coefficient.
Std. Error represents the standard error of the unstandardized coefficient.
Beta represents the standardized coefficient.
t is the t-value for the hypothesis test.
Sig. (Significance) indicates the p-value.

The results of this multiple linear regression equation are as follows:

$Y=-199{,}685.931+0.853X1+138.238X2-28.180X3-22.666X4+9.336X5+224.475X6-1.322X7+eY.$

From the table above, the following conclusions can be drawn: (1) The coefficient b1 = 0.853 means that if the variable X1 (Land Rent) is increased, the farmers' income will increase by 0.853%; (2) The coefficient b2 = 138.238 means that if the variable X2 (Seed Price) is increased, the farmers' income will increase by 138.238%; (3) The coefficient b3 = -28.180 means that if the variable X3 (Urea Price) is increased, the farmers' income will decrease by 28.180%; (4) The coefficient b4 = -22.666 means that if the variable X4 (ZA Price) is increased, the farmers' income will decrease by 22.666%; (5) The coefficient b5 = 9.336 means that if the variable X5 (SP-36 Price) is increased, the farmers' income will increase by 9.336%; (6) The coefficient b6 = 224.475 means

that if the variable X6 (Pesticide Price) is increased, the farmers' income will increase by 224.475%; (7) The coefficient b7 = -1.322 means that if the variable X7 (Labor) is increased, the farmers' income will decrease by 1.322%; (8) The constant value of -199,685.931 means that if all variables X1 to X7 are equal to 0, the farmers' income will decrease by 199,685.931%.

Table 7. Model Fit Test with Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.973	0.948	0.942	4,244,593.525	0.460

a. Predictors: (Constant), Labor, ZA Price, Urea Price, Land Rent, SP-36 Price, Seed Price, Pesticide Price
b. Dependent Variable: Income

The coefficient of determination is used to measure how well the dependent variable can be explained by the variation in the independent variables. In this study, the detection of the coefficient of determination is done by looking at the R2R^2R2 value in the regression output. According to the study, the coefficient of determination is 0.948. This means that 94.8% of the variation in income can be explained by the seven independent variables: land rent, seed price, ZA price, urea price, SP-36 price, pesticide price, and labor costs. The remaining 100% - 94.8% = 5.2% is explained by other factors outside the model. The standard error of the estimate (SEE) is 81.14. The smaller the SEE, the more accurately the regression model predicts the dependent variable.

6. F-Test

The F-Test is conducted to determine whether there is a simultaneous effect of the independent variables (X) on the dependent variable (Y). The process of testing variables using the F-Test is as follows:

Table 8. F-Test Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	20,163,914,364,404,848.000	7	2,880,559,194,914,979.000	159.884	0.000
Residual	1,117,027,599,880,863.000	62	18,016,574,191,626.824		
Total	21,280,941,964,285,720.000	69			

Notes:
Dependent Variable: Income
Predictors: (Constant), Labor, ZA Price, Urea Price, Land Rent, SP-36 Price, Seed Price, Pesticide Price

The decision-making criterion is that if the significance value is less than 0.05, there is a simultaneous effect on income. From the analysis results shown in the table above, the significance value is 0.000, which is less than 0.05. Therefore, it can be concluded that x1,x2,x3,x4,x5,x6, and x7 are accepted, meaning all variables simultaneously affect income. In the F-test results, the calculated F value is 159.884, which is greater than the F table value of 2.159, confirming that all variables simultaneously affect income.

7. t-Test

The t-test is conducted to determine if there is a partial (individual) effect of the independent variables (X) on the dependent variable (Y). The t-test for the variables is as follows:

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e-ISSN: 2828-8718

Table 9. t-Test Results

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	
(Constant)	-199,685.931	2,021,001.739		-0.099
Land Rent	0.853	0.678	0.095	1.259
Seed Price	138.238	13.757	0.807	10.049
Urea Price	-28.180	5.388	-0.254	-5.231
ZA Price	-22.666	2.352	-0.384	-9.637
SP-36 Price	9.336	7.013	0.084	1.331
Pesticide Price	224.475	57.120	0.397	3.930
Labor	-1.322	0.665	-0.115	-1.987

Based on the results of the t-test, several insights can be drawn regarding the impact of various factors on income. The influence of land rent (X1) on income shows a significance value of 0.213, which is greater than 0.05. This indicates that the variable land rent does not significantly affect income. The t-test results show a t-value of 1.259, which is less than the critical t-value of 1.99 at a 0.5% error level. Therefore, land rent does not have a significant impact on income at a 99.5% confidence level. This could be because land rent is considered constant, as the cost depends on the size of the rented land.

Regarding the influence of seed price (X2) on income, the significance value is 0.000, which is less than 0.05. This means that the seed price significantly affects income. The t-test results show a t-value of 10.049, which is greater than the critical t-value of 1.99 at a 0.5% error level. Thus, seed price significantly impacts income at a 99.5% confidence level. High-quality or superior seeds greatly influence production, which in turn affects farmers' income. The impact of urea price (X3) on income indicates that the higher the urea price, the lower the income of tobacco farmers. The significance value of the urea price is 0.000, which is less than 0.05, indicating that the urea price significantly affects income. The t-test results show a t-value of -5.231, which is greater than the critical t-value of 1.99 at a 0.5% error level. Therefore, the urea price negatively affects income at a 99.5% confidence level. The dosage of fertilizer influences production, which ultimately affects the income of tobacco farmers.

The influence of ZA price (X4) on income reveals that the fluctuating prices of fertilizers can greatly impact income, especially when fertilizers are not available in the market. The significance value of ZA price is 0.000, which is less than 0.05, indicating that ZA price significantly affects income. The t-test results show a t-value of -9.637, which is greater than the critical t-value of 1.99 at a 0.5% error level. Hence, ZA price negatively affects income at a 99.5% confidence level. Similar to urea, the dosage of ZA fertilizer impacts production and income. The influence of SP-36 price (X5) on income shows a significance value of 0.188, which is greater than 0.05. This suggests that SP-36 price does not significantly affect income. The t-test results show a t-value of 1.331, which is less than the critical t-value of 1.99 at a 0.5% error level. Thus, SP-36

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price does not have a significant impact on income at a 99.5% confidence level. However, SP-36 price influences income at a 10% error level rather than 5%.

Regarding the impact of pesticide price (X6) on income, the significance value is 0.000, which is less than 0.05, indicating that pesticide price significantly affects income. The t-test results show a t-value of 3.930, which is greater than the critical t-value of 1.99 at a 0.5% error level. Therefore, pesticide price significantly impacts income at a 99.5% confidence level. Higher pesticide prices lead to lower income for tobacco farmers. Lastly, the influence of labor (X7) on income shows a significance value of 0.51, which is greater than 0.05, suggesting that labor does not significantly affect income. The t-test results show a t-value of -1.987, which is less than the critical t-value of 1.99 at a 0.5% error level. Hence, labor does not have a significant impact on income at a 99.5% confidence level. Labor costs do not affect farmers' income because labor prices are very stable in the study area.

Based on the previous analysis, it can be stated that tobacco farmers in Probolinggo Regency are comfortable with their environment. This is evidenced by their active participation in community service activities such as cleaning the village, repairing irrigation systems, maintaining the surroundings, and building worship facilities and social spaces to foster community relationships. The study revealed that 83% of the farmers' houses are privately owned and constructed with permanent materials, indicating adequate housing conditions. Farmers also own everyday electronic appliances such as refrigerators, televisions, and mobile phones. In terms of transportation, 57% of the farmers use bicycles, 28% use motorcycles, and 14.29% use cars to commute to work and take their children to school. The average family size is three members, consisting of two children and one spouse, which suggests the success of the family planning program. With fewer dependents, economic needs are less burdensome. Additionally, the income from tobacco farming, amounting to IDR 18,450,000 per hectare per planting season, indicates that the economic condition of tobacco farmers in Probolinggo Regency is generally good and prosperous.

CONCLUSIONS

The study on the Socio-Economic Determinants of Tobacco Farmers in Probolinggo Regency concludes that tobacco farming in this region is profitable, with an average income of IDR 18,540,000 per hectare per planting season and an R/C ratio of 1.6. This signifies that tobacco farming is viable for continued development. Factors affecting the income of farmers in Probolinggo Regency include the prices of seeds, urea, ZA (ammonium sulfate), and pesticides. Furthermore, the social and economic conditions of the tobacco farmers in the study area are adequate and prosperous.

This study faced several limitations that may affect the generalizability of the findings. Firstly, the sample size was limited to a specific region within Probolinggo Regency, which may not accurately represent the diverse conditions of all tobacco farmers in the area. Additionally, the data relied heavily on self-reported information from the farmers, which may introduce bias or inaccuracies. Seasonal variations and external economic factors, such as fluctuations in market prices and changes in agricultural policies, were not extensively accounted for, potentially impacting the overall income and economic stability of the farmers.

Future research should aim to include a larger and more diverse sample to provide a comprehensive understanding of the socio-economic conditions of tobacco farmers

across different regions. It is also recommended to incorporate longitudinal studies to observe the long-term impacts of external economic factors and agricultural policies on the farmers' income and well-being. Implementing training programs for farmers on sustainable farming practices and efficient resource management could further enhance their productivity and economic stability. Additionally, government support in terms of subsidies for essential farming inputs and access to better infrastructure could significantly improve the overall livelihood of tobacco farmers in Probolinggo Regency.

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