



Influence of Profile, Education Level, and Business Scale on Productivity of Business Actors in the Coconut Sugar Production Process in Lojejer Village, Wuluhan District

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ABSTRACT

This study reveals the effect profile business, educational level and scale of the productivity of coconut sugar farm businesses is to analyze the factors affecting the production process on the productivity of coconut sugar farm businesses. In this study reveals the influence of the factors profiles of business, education, and business scale either jointly or partially, and include also the dominant factors that influence the productivity of coconut sugar farm businesses, particularly businesses coconut sugar Lojejer village, Wuluhan district. The analytical tools used in this research is the analysis of multiple linear regression. Overall the results of this study it can be concluded that the factors profiles of business, education level, and scale simultaneously affect the productivity of coconut sugar farm businesses. Partially, profile entrepreneurs, business scale, while the level of education have a significant effect on productivity is insignificant coconut sugar farm businesses. For the dominant factors affecting the productivity of farm businesses palms sugar is the profile of entrepreneurs.

Keywords — factors of production, productivity, business actor, levels of education, business scale

1. Introduction

Rural industry is known as an additional source of family income and also as a support for agricultural activities which are the main livelihood of most rural communities [1]. Rural industrial development has an important meaning in efforts to reduce poverty levels in rural areas. Because of this role of rural industry, the development of rural industry has an important meaning in efforts to reduce the level of poverty in rural areas, in other words it is hoped that it can improve the welfare of rural communities.

The development of coconut sugar business, apart from having a positive impact on income and employment for coconut farmers, also has strategic significance, namely helping to provide a national staple resource. Judging from the condition of the sap raw material, several

facts were found, that there were differences in the volume of sap from morning taps and afternoon taps, afternoon taps collected in the morning were generally more abundant than morning taps taken in the afternoon, variations in tap yields also depended on the fertility/condition of the plant and differed between seasons. rain and dry. These differences in sap yield will affect coconut sugar productivity. Likewise, differences in labor productivity can cause a high increase in production, thereby affecting business which in turn encourages an increase in labor. Production can reduce unemployment in rural areas, especially in Lojejer village, Wuluhan subdistrict.

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abundant than morning taps taken in the afternoon, variations in tap yields also depended on the fertility/condition of the plant and differed between seasons. rain and dry. The dry season generally produces less sap than the rainy season, but it is clearer and thicker with a higher yield.

These differences in sap yield will affect coconut sugar productivity. Likewise, differences in labor productivity can cause a high increase in production, thereby affecting business which in turn encourages an increase in labor. Production can reduce unemployment in rural areas, especially in Lojejer village, Wuluhan subdistrict.

These differences are thought to be influenced by the profile of business actors, level of education and business scale. The profile of the business actor can influence productivity because the profile of the business actor explains the condition, position and description of the farming business actors. The level of education can influence productivity because it is a conscious and planned effort made by business actors to equip themselves with the intelligence, knowledge, skills and personality needed by themselves, society, nation and state. Business scale can influence productivity because it is the ability possessed by business actors by looking at the number of workers used and how much income business actors earn in one period.

2. Method

The research design used in this research is explanatory research, namely research that explains the causal relationship between variables through hypothesis testing [2]. Meanwhile, the method used in this research is survey research with a purpose to determine the influence of business actor profile, education level, business scale partially and simultaneously on the productivity of coconut sugar business actors in Lojejer village, Wuluhan subdistrict.

A survey is research that takes samples from a population and uses questionnaires as the main data collection tool [2].

The population of this research is all coconut sugar business actors in Lojejer Village, Wuluhan District . The sampling method in this research was accidental sampling or random sampling, where this sampling was carried out on

coconut sugar farming actors. The minimum number of samples used was 30 respondents. So in this study the researchers used 40 respondents considering limited time, funds and energy [2].

The main instrument used in this research was a questionnaire shown to all coconut sugar business actors in Lojejer Village, Wuluhan District. Before being distributed to all coconut sugar business actors as primary data or actual respondent data, the questionnaire was first tested for validity and reliability.

A questionnaire is a survey research tool that contains a list of written questions, which aims to obtain responses and information from people or groups selected as samples [2]. This information can be obtained by giving a score or weight to each answer to each question item in the questionnaire. Scoring in this questionnaire uses a Likert scale system and a differential semantic scale.

The Likert scale is a scale that measures the respondent's level of agreement or disagreement with a series of statements that measure an object. The alternative choices used are 1 to 5 answers to questions with the following conditions:

Score 5: Answer A means very productive

Score 4: Answer B means productive

Score 3: Answer C means quite productive

Score 2: Answer D means less productive

Score 1: Answer E means unproductive

Meanwhile, for the differential semantic scale, it is a measurement scale where the answer items are adjusted to the question items (semantics). Besides that, another characteristic is that the answer items are bipolar, namely from the negative pole to the positive pole.

In principle, research is taking measurements, so there must be good measuring instruments. Measuring tools in research are called research instruments. So, a research instrument is a tool used to measure observed natural and social phenomena.

This research was carried out in Lojejer Village, Wuluhan District . The research period is 3 months according to the permission given. The choice of research location was carried out deliberately based on the consideration that coconut sugar business in Lojejer Village, District Wuluhan There is a need for business development because raw materials are abundant



and it is the business of the majority of the community, so it is necessary to identify and analyze the factors that influence coconut sugar production so that the number of coconut sugar products increases every year.

The stages before collecting field data, namely conducting observations and preliminary research on coconut sugar business actors in Lojejer Village, Wuluhan District.

Primary data collection stages using the interview method, namely directly interviewing coconut sugar business actors or parties related to the coconut sugar business in Lojejer Village, Wuluhan District to obtain supporting information for this research.

Secondary data collection stages, in this stage there are two types of data collection stages taken, namely:

- Secondary data obtained from libraries, literature and previous research reports (published or unpublished) relating to the profile of business actors, education level, business scale and productivity of business actors.
- Secondary data obtained from companies contains data or reports related to the profile of business actors, education level, business scale and productivity of business actors.

The data analysis method is a method in the form of formulas that can be used to analyze the data that has been collected. The data analysis used in this research is multiple regression analysis with validity and reliability testing

Validity test Formula:

$$r = \frac{a. \quad n(\sum xy) - (\sum x)(\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} [n \sum y^2 - (\sum y)^2]}$$

Information:

r = correlation value (comparison test with critical table of r values)
 n = number of respondents
 x = respondent's answer score per question
 y = total score of answers to all questions for a respondent

Reliability Test Formula:

$$a = \frac{k.r}{1+(k-1).r}$$

Where :

k = number of items

r = average correlation between items

The data analysis used in this research is multiple linear regression analysis with the F test and t test, where in this research the calculation technique is assisted using SPSS Windows software. The formula for multiple linear regression analysis is as follows:

$$y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + \dots e$$

Information:

y = dependent variable (purchasing decision)

a = Constant

b_1, b_2, b_3, b_4, b_5 = regression coefficient

e = confounding variable

x_1, x_2, x_3, x_4, x_5 = independent variables [3]

The coefficient of determination is used to measure how far the model's ability to explain variations in the dependent variable. The value of the determinant coefficient is between zero and one. If there is only one independent variable then R^2 is used, but if there is more than one independent variable then adjusted R^2 is used, thus this measurement uses adjusted R^2 . For every additional independent variable, R^2 will definitely increase no matter whether that variable has a significant effect on the dependent variable. Meanwhile, the adjusted R^2 value can increase or decrease if one dependent variable is added to the model.

$$Adjust R square = \frac{1 - (n - 1)}{(n - k)(1 - R^2)}$$

Information :

R^2 = Coefficient of multiple determination

n = Number of respondents

k = Number of independent variables

F test analysis is used to test whether or not there is an influence of the independent variables consisting of (culture, social, personal, psychology and marketing strategy) together on



the dependent variable (purchasing decisions). Where the F test formula is as follows:

$$F = \frac{R^2 / k}{(1 - R^2) (n - k - 1)}$$

Information:

F = simultaneous testing

R² = coefficient of multiple determination

k = number of independent variables

n = number of samples [4]

By comparing the calculated F (F calculated) with the critical F (F critical) at a significance level of $\alpha = 0.05$, the following interpretations can be made: If F calculated $\geq$ F critical, the null hypothesis (H₀) is rejected in favor of the alternative hypothesis (H₁). This indicates that the variations in the regression model successfully explain the overall variations in the independent variables and their influence on the dependent variable. Conversely, if F calculated $<$ F critical, the null hypothesis (H₀) is not rejected. This suggests that the regression model does not adequately explain the variations in the independent variables concerning their influence on the dependent variable.

Additionally, the significance of the calculated F value can be assessed by comparing its probability value with the predetermined significance level ($\alpha = 0.05$). If the probability value of F calculated $< \alpha = 0.05$, the null hypothesis (H₀) is rejected, indicating that the independent variable (X) has a significant partial effect on the dependent variable (Y). Conversely, if the probability value of F calculated $> \alpha = 0.05$, the null hypothesis (H₀) is not rejected, suggesting that the independent variable (X) does not have a significant partial effect on the dependent variable (Y).

T test analysis is used to determine how far each independent variable influences the dependent variable. The t test formula according to [2] is:

$$t = \frac{b_k}{Sb_k}$$

Information:

t = individual testing

b_k = Partial Correlation

Sb_k = Number of Samples

Through the t-test, the calculated t (t calculated) is compared with the critical t value (t table) at a significance level of $\alpha = 0.05$. If the results show that t calculated $\geq$ t table, the alternative hypothesis (H₁) is accepted. This indicates that the variation in the independent variable explains the variation in the dependent variable, and there is a significant relationship between the two variables. Conversely, if t calculated $<$ t table, the alternative hypothesis (H₁) is rejected, meaning that the variation in the independent variable does not explain the variation in the dependent variable, and no significant relationship is observed between the variables.

A second method is to compare the probability value of the calculated t with the significance level ($\alpha = 0.05$). If the probability value of t calculated $< \alpha = 0.05$, the alternative hypothesis (H₁) is accepted, indicating that the independent variable (X) has a significant partial effect on the dependent variable (Y). Conversely, if the probability value of t calculated $> \alpha = 0.05$, the alternative hypothesis (H₁) is rejected, suggesting that the independent variable (X) does not have a significant partial effect on the dependent variable (Y).

3. Discussion

Table 1. Multiple Linear Regression Analysis Between Independent Variables (x1 , x2 , and x3) and Dependent Variable (y).

Coefficients ^a					
Model		Unstand. Coef		Stand . Coef	Sig
		B	Std. Error	Beta	
1	(Const ant)	8.590	.732		11.731 .000
	X1	.186	.036	.544	5.211 .000
	X2	.135	.060	.218	2.261 .030
	X3	.198	.063	.336	3.151 .003

Based on the results of calculations using SPSS 17.0 shown in table 1.1 , the multiple linear regression equation is:



$$Y = 8.590 + 0.186X_1 + 0.135X_2 + 0.198X_3 + e$$

A detailed explanation of the multiple linear regression equation above is as follows:

The Constant Value is 8,590 units

A constant with a positive value means that if there are no factors: Business Actor Profile (X1), Education Level (X2) and Business Scale (X3), then the value of the productivity of coconut sugar farming business actors (Y) is 8.590. So this shows that if the factors Business Actor Profile (X1), Education Level (X2) and Business Scale (X3) are equal to 0 (zero), then the productivity of coconut sugar farming business actors will remain at 8,590.

3.1. The Business Actor Profile Coefficient Value (X1) is 0.186 units

coefficient (X1) shows a positive influence of 0.186, meaning that if the Business Actor Profile (X1) increases by 1 unit it will result in an increase in the productivity of coconut sugar farming business actors by 0.186 assuming the factors Educational Level (X2) and Business Scale (X3) is considered fixed (constant).

3.2. The Education Level Coefficient (X2) value is 0.135 units

The Education Level coefficient (X2) shows a positive influence of 0.135, meaning that if the Education Level (X2) increases by 1 unit it will result in an increase in the productivity of coconut sugar farming business actors by 0.135 assuming the factors Business Actor Profile (X1) and Business Scale (X3) considered fixed (constant).

3.3. The Business Scale Coefficient (X3) value is 0.198 units

The Business Scale Coefficient (X3) shows a positive influence of 0.198, meaning that if the Business Scale (X3) increases by 1 unit it will result in an increase in the productivity of coconut sugar farming business actors by 0.198 assuming the Business Actor Profile (X1) and Education Level (X2) factors. considered fixed (constant).

3.4. Determination Coefficient Analysis (Adjusted R²)

The Correlation Coefficient of Determination (Adjusted R²) is used to determine the correlation or closeness of the relationship between the independent variables business actor profile (X1), education level (X2) and business scale (X3), with the dependent variable namely the productivity of coconut sugar farming business actors (Y) together can be found using SPSS version 16.0 calculations which are presented in Table 2

Table 2. Analysis of the coefficient of determination (Adjusted R²) between the independent variables (X1, X2, and X3) and the dependent variable (Y)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.828 ^a	.685	.659	.52888

R is a measure used to measure the level of closeness of the relationship between the independent variables, namely the profile of business actors (X1), education level (X2) and business scale (X3), and the dependent variable, namely the productivity of coconut sugar farming business actors (Y) in Lojejer area, Wuluhan District, Jember Regency. In table 5.17, the R value is written at 0.828, meaning that the profile of business actors (X1), education level (X2) and business scale (X3) have a strong coefficient level on the productivity of coconut sugar farming business actors (Y).

The coefficient of determination adjusted R² is used to determine whether the relationship between the independent variable and the dependent variable is close or to determine the contribution of the coefficient of the independent variable, namely the profile of the business actor (X1), level of education (X2) and scale of business (X3) to the dependent variable, namely the productivity of the business actor. coconut sugar farmer (Y). From the results of the analysis, the value of the coefficient of determination adjusted R² is obtained of 0.659 or



65.9%. This means that 65.9% of changes in the dependent variable productivity of coconut sugar farming business actors (Y) are caused by changes in the independent variables, namely the profile of business actors (X1), level of education (X2) and scale of business (X3), while the remaining 0.341 or 34.1% is caused by other factors not included in the model or called error factors.

3.5. Hypothesis Test I (F Test)

This test is intended to determine the influence of the independent variables business actor profile (X1), education level (X2) and business scale (X3) on the dependent variable productivity of coconut sugar farming business actors (Y) simultaneously or together. This test is carried out by comparing the magnitude of the Calculated F value with Critical F value. If the Calculated F value is greater than Critical F value, then H_a is accepted, which means that all independent variables simultaneously have a significant effect on the dependent variable (Y).

The second way is to calculate the probability value F, if the probability value F is smaller than the level of significance ($\alpha = 0.05$), then H_a is accepted, which means that all independent variables simultaneously have a significant effect on the dependent variable (Y). On the other hand, if the probability value F is greater than the level of significance ($\alpha = 0.05$), then H_a is rejected, which means that all independent variables have no significant effect on the dependent variable. The results of the F test can be seen in table 1.3

Table 3. F Test Results on Simultaneous Regression Coefficients

Cal F Value	Crit F Value	Prob.	Sig	Note
26,104	2,87	0,000	0,005	Significant

Based on Table 1.3, using the first method, the results of the multiple linear regression analysis show a calculated F value of 26.104, which is greater than the critical F value of 2.87. Therefore, the alternative hypothesis (H_1) is accepted. This indicates that the independent variables, namely business actor profile (X1),

education level (X2), and business scale (X3), have a significant simultaneous effect on the dependent variable, which is the productivity of coconut sugar farming business actors (Y).

3.6. Hypothesis Test II (t Test)

The partial regression coefficient test is conducted to examine whether each independent variable, namely business actor profile (X1), education level (X2), and business scale (X3), has a partial effect on the dependent variable, which is the productivity of coconut sugar farming business actors (Y). This test is performed using the same approach as the F test, by comparing the calculated t value (t calculated) with the critical t value (t table). If t calculated is greater than t table, the alternative hypothesis (H_1) is accepted, indicating that the independent variable has a significant partial effect on the dependent variable. Conversely, if t calculated is smaller than t table, the alternative hypothesis (H_1) is rejected, meaning that the independent variable does not have a significant partial effect on the dependent variable.

Another method is to compare the probability value of t calculated with a significance level of $\alpha = 0.05$. If the probability value of t calculated is smaller than the significance level ($\alpha = 0.05$), the alternative hypothesis (H_1) is accepted, indicating that the independent variable has a significant partial effect on the dependent variable. On the other hand, if the probability value of t calculated is greater than the significance level ($\alpha = 0.05$), the alternative hypothesis (H_1) is rejected, meaning that the independent variable does not have a significant partial effect on the dependent variable.

Table 4. Results of the t test on partial regression coefficients

Var	Cal T Value	Crit T Value	Prob.	Note
X1	5,211	2,02	0,000	Significant
X2	2,261		0,030	Significant
X3	3,151		0,003	Significant

Based on the results of multiple linear regression analysis in Table 4 above, it can be explained as follows:

The independent variable, business actor profile (X1), has a calculated t value of 5.211, indicating that t calculated is greater than t table, which is 2.02. The business actor profile as an independent variable (X1) also has a t probability value of 0.000, which is smaller than the significance level ($\alpha = 0.05$). This indicates that the business actor profile (X1) has a significant effect on the productivity of coconut sugar farming business actors (Y), leading to the acceptance of the alternative hypothesis (H_1).

The independent variable, education level (X2), has a calculated t value of 2.261, showing that t calculated is greater than t table, which is 2.02. Education level as an independent variable (X2) also has a t probability value of 0.030, which is smaller than the significance level ($\alpha = 0.05$). This means that education level (X2) has a significant effect on the productivity of coconut sugar farming business actors (Y), and thus, the alternative hypothesis (H_1) is accepted.

The independent variable, business scale (X3), has a calculated t value of 3.151, demonstrating that t calculated is greater than t table, which is 2.02. The business scale as an independent variable (X3) also has a t probability value of 0.003, which is smaller than the significance level ($\alpha = 0.05$). This signifies that business scale (X3) has a significant effect on the productivity of coconut sugar farming business actors (Y), resulting in the acceptance of the alternative hypothesis (H_1).

Based on the results above, it can be seen that the business actor profile variable (X1) is the variable that has the most dominant influence among the other variables on the productivity of coconut sugar farming actors.

Based on the results of research conducted in the Lojejer area, Wuluhan District, Jember Regency regarding the influence of business actor profile (X1), education level (X2) and business scale (X3) on the productivity of coconut sugar farming business actors, this simultaneously has a significant effect on the productivity of business actors (Y). This shows that coconut sugar production depends on the productivity factors of coconut sugar farming actors which consist of the profile of the business

actor, education level and business scale. Likewise, the partial test of all the variables chosen in this research has a significant effect on the productivity of coconut sugar farmers.

Variable (X1) has a significant effect on the productivity of coconut sugar farming business actors (Y). This shows that the stronger the profile that coconut sugar farming business actors have, the productivity of coconut sugar farming business actors will increase. In the Lojejer area, Wuluhan District, Jember, the productivity of coconut sugar farming business actors is more likely to be influenced by age. This is related to the characteristics of farmers who make coconut sugar who need labor as their main resource. Thus, as the age of farmers making coconut sugar increases, their energy tends to decrease and becomes an obstacle in climbing coconut trees. Apart from the age, the productivity of coconut sugar farming actors is also influenced by land ownership status and experience. The longer coconut sugar farming actors work, the more experience, knowledge, skills and intelligence they gain, which will increase their work productivity. So this research is consistent with previous research which states that title "The Influence of Education Level, Motivation, Age and Work Experience on the Work Productivity of Nursing Section Employees at PKU Muhammadiyah Hospital Surakarta" states that age and work experience together provide significant influence on the work productivity variable of nurses in hospitals. PKU Muhammadiyah Surakarta [5].

Variable (X2) partially has a significant effect on the productivity of coconut sugar farming business actors (Y). In the Lojejer area, Wuluhan District, Jember, the majority of coconut sugar farming business actors have attended formal education, although the formal education they have attended does not reach high school and college levels. However, there are a small number of coconut sugar farmers who have not completed elementary school. This means that it is quite encouraging because it turns out that coconut sugar farmers in Lojejer village, Wuluhan subdistrict, are not illiterate. Apart from that, how to make coconut sugar comes from family, sibling or neighbor education. So coconut sugar makers learn to make coconut sugar not only from education, but also from

knowledge gained from family, relatives or neighbors, or also from their experience in making coconut sugar. So this research is consistent with previous research The title " The Influence of Experience, Education and Age on Labor Productivity at the Ngembat Padas Gemolong Sragen Gas Station" stated that education has a simultaneous effect on the work productivity of Ngembat Padas Gemolong Sragen gas station employees [6].

Variable (X3) partially has a significant effect on the productivity of coconut sugar farming business actors (Y). In the Lojejer area, Wuluhan District, Jember. Business scale is a very important factor in measuring the productivity of coconut sugar farming business actors because ownership of capital, labor, production equipment and the number of coconut trees will create high productivity. The greater the amount of capital managed by coconut sugar farming actors will result in an increase in the productivity of coconut sugar farming actors in Lojejaer village, Wuluhan subdistrict. Likewise with the number of workers used by farming actors, the more workers available will increase the productivity of coconut sugar farming actors in Lojejer village, Wuluhan subdistrict. Likewise, the number of production tools (pans) used and the number of coconut trees tapped by coconut sugar farming actors for the production process will influence the productivity of the farming actors. The greater the number of production tools (pans) and the number of trees tapped will further increase the productivity of the farmers. coconut sugar farming business in Lojejer village, Wuluhan subdistrict. So this research is consistent with previous research "Analysis of broiler farming business productivity with management company partnership patterns in Kandat sub-district, Kediri district" stated that business scale, length of business and number of workers have a strong relationship [7].

4. Conclusion

Based on the results of the data analysis and discussion that has been carried out, the following conclusions can be drawn: Simultaneous regression testing has proven that business actor profile (X1), education level (X2)

and business actor profile (X3) has a significant effect on the productivity of coconut sugar farming business actors.

Partial regression testing proved that the profile variable of business actors had a significant effect on the productivity of coconut sugar farming business actors , the educational level variable had a significant effect on the productivity of coconut sugar farming business actors and tshe business scale variable had a significant effect on the productivity of sugar farming business actors.

Business actor profile has the most dominant influence on the productivity of coconut sugar farming business actors compared to the productivity variables of other coconut sugar farming business actors.

5. References

- [1] H. A. Sangadah, M. Machfud, and E. Anggraeni, "Business Model Development of a Fresh Milk Agro-Industry in Rural Areas," *Jurnal Manajemen dan Agribisnis*, Jul. 2021, doi: 10.17358/jma.18.2.131.
- [2] S. Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R & D*. Alfabeta, 2019. [Online]. Available: <https://books.google.co.id/books?id=0xmCnQAACAAJ>
- [3] S. Santoso, *Aplikasi SPSS pada Statistik Multivariat*. Jakarta: PT. Elex Media Komputindo, 2012.
- [4] I. Ghozali, *Aplikasi Analisis Multivariate Dengan Program IBM SPSS 25 (Sembilan)*. Semarang: Badan Penerbit Universitas Diponegoro, 2018.
- [5] D. Ariyanto, "The Influence of Education Level, Motivation, Age and Work Experience on Work Productivity of Nursing Department Employees at PKU Muhammadiyah Hospital Surakarta," Muhammadiyah Surakarta University, 2007.
- [6] N. A. Kurnia, "The Influence of Wages, Years of Service, Formal Education, and Age on Labor Productivity. Empirical Study in the Rambak Aduhai Cracker Small Industry, Mangli, Jember.," Muhammadiyah Surakarta University, 2018.
- [7] Rohmad, "Analysis of factors that influence the work productivity of employees in the nursing department at PKU Muhamamdiyah Hospital, Surakarta," Muhammadiyah Surakarta University, 2018.

