THE EFFECT OF PRODUCTION COSTS, PRODUCTION CAPACITY AND PRICES ON THE INCOME OF MELINJO CHIPS CRAFTSMEN IN PIDIE REGENCY

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Abstract

This research aims to determine the effect of production costs, production capacity and prices on the income of melinjo chips craftsmen in Pidie Regency. The sample in this study amounted to 100 respondents melinjo chips craftsmen. The data were analyzed using multiple linear regression and the results show that production costs $(X1)$ and prices $(X3)$ have a positive and significant effect on the income of melinjo chips craftsmen in Pidie Regency, while production capacity $(X2)$ has a negative and significant effect on the income of melinjo chips craftsmen in Pidie Regency. Thus, this research contributes to the development of the income of melinjo chips craftsmen. The implication of this research is the need for craftsmen to control production costs effectively and set competitive selling prices so that income can increase optimally.

Keywords: Craftsmen's Income, Price, Production Capacity, Production Cost.

INTRODUCTION

Business progress in a region can be seen from economic growth and regional income (Siregar, 2021). In the context of micro and small businesses, business progress is often a benchmark for local economic development and the welfare of the communities involved. One sector that contributes to this progress is the food processing industry. Processed foods are any form of processing carried out on food ingredients to produce ready-to-eat products, taking into account food safety and nutritional value (Mardiyah, 2021). Melinjo chips are a processed food product made from melinjo seeds and are very popular among the public. Melinjo chips also have significant economic value for the community, especially in areas where melinjo trees are abundant, such as in Aceh Province. Pidie Regency is one of the regions in Aceh Province that has significant potential in food processing, especially melinjo chips. Pidie has many melinjo chips craftsmen who have been running this business for generations. This food is not only popular among the local community, but also has a wide market outside the region. The production of melinjo chips is one of the micro businesses widely run by the community in this area, which contributes significantly to the local economy and the welfare of the artisans.

Many people in Pidie Regency depend on the melinjo chips business for their livelihood, either as a side business or as their main source of income for the lower-middle class (Azzahra, 2023). The abundance of melinjo trees in this area provides an opportunity for the community to make the most of their natural resources. Melinjo chips craftsmen in Pidie Regency have great economic potential, but still face various challenges in increasing their income, such as high raw material costs that affect business sustainability. Chips craftsmen still use traditional production methods, which limits the amount of chips craftsmen that can be produced. The price of melinjo chips craftsmen is uncertain and influenced by various factors. Therefore, this study analyzes the effect of production costs, production capacity, and price on the income of melinjo chips craftsmen in Pidie Regency.

LITERATURE REVIEW
Production Cost

Production costs are the costs incurred in managing raw materials into products that are commonly used to calculate the cost of finished products and the cost of products that are still in process at the end of the accounting period (Nadiah et al., 2022). According to Ahyari in Dani Rachman (2020), production costs in a narrow sense are the sacrifice of economic resources to obtain assets, while in a broad sense, production costs are the sacrifice of economic resources measured in monetary units, which are carried out for specific purposes. According to Mulyadi in Widyawati (2020), production cost indicators are as follows:

1. Raw material costs.
2. Direct labor costs.
3. Factory overhead costs.

Production Capacity

Capacity is the level of a company's production capability for a good or service with the support of available facilities in the form of labor and equipment, and is usually expressed in terms of the amount of output that can be produced in a given period (Rani, 2019). Capacity is the maximum amount of output that a production facility can produce within a certain period of time. (Sugiatna, 2021). The indicators of production capacity are:

1. Maximum amount of output produced
2. Amount of resources owned
3. Work time and efficiency

Price

Price is the amount of money (possibly plus some goods) needed to obtain a combination of a product and its accompanying services (Suhartini, 2021). Sunyoto (2020) argues that price is the amount of money charged for a particular product. Meanwhile, selling price is the amount of compensation (money or goods) required to obtain a combination of goods or services.

According to Tjiptono in Anggraeni (2020), price perception is measured using the following indicators:

1. Affordability
2. Price suitability in relation to product quality.
3. Price suitability in relation to benefits.
4. Competitive pricing.

Craftsmen's Income

Income is the largest amount that a person can spend during a period of time while anticipating that conditions will remain the same at the end of that time with the same prices (Ekonomi et al., 2021). Harnanto (2019) states that income is an increase or addition to a company's assets and a decrease in its liabilities as a result of the procurement of goods/services for consumers in particular. According to Tjiptono in Fitria (2019), income indicators are as follows:

1. Increase in sales.
2. Production volume.
3. Net profit.

METHOD

The object of this study is melinjo chips craftsmen in Pidie Regency, with the research location in Peukan Baro District, Pidie Regency. The population of this study is melinjo chips craftsmen in Peukan Baro District, Pidie Regency, whose number is unknown (infinite population). This study uses non-probability techniques and purposive sampling methods. The sample was taken using the Cochran formula, which amounted to 100 respondents. The data collection technique involved conducting interviews and distributing questionnaires to melinjo chips craftsmen. The data was measured using a Likert Scale. The data was analyzed using multiple linear regression. Measurements of the analyzed data were conducted by assigning indicators to each question asked using an interval scale, which had five assessment categories: strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1).

RESULTS AND DISCUSSION

Validity Test

Validity testing is conducted to ensure that the research instruments used actually measure the variables that should be measured. To measure the validity of the data being studied, a comparison can be made between the calculated r and the table r for the degree of freedom (df = n-2) 0r 98 with a margin of error of 0.05. If the calculated r value is greater than the table r, then the test is valid, whereas if the calculated r value is less than the table r, then the test is not valid. The validity test was conducted using the SPSS 27.0 program with the following results:

Table 1. Validity Test Results

Variable	No. Item	Calculated r value	Table r value	Description
Production Costs (X1)	1	0.731	0.196	Valid
	2	0.743	0.196	Valid
	3	0.775	0.196	Valid
Production Capacity (X2)	1	0.802	0.196	Valid
	2	0.843	0.196	Valid
	3	0.861	0.196	Valid
Price (X3)	1	0.710	0.196	Valid
	2	0.745	0.196	Valid
	3	0.694	0.196	Valid
	4	0.727	0.196	Valid
Craftsmen's Income (Y)	1	0.813	0.196	Valid
	2	0.917	0.196	Valid
	3	0.823	0.196	Valid

Based on the table above, the results of the data analysis show that all r-count results are greater than r-table, which is 0.196 with a significance level (a) = 5% or 0.05. Thus, all items used in the questionnaire regarding production costs (X1), production capacity (X2), price (X3), and Craftsmen's Income (Y) are valid.

Reliability Test

Reliability testing is a method used to measure the consistency of a set of statements in a questionnaire that serve as indicators of a variable. A questionnaire is considered reliable if respondents' responses to the statements are stable or consistent even when tested two or more times under similar conditions and measurements. This reliability test is conducted using the Cronbach Alpha method. An instrument is considered reliable if the Cronbach Alpha coefficient value is > 0.60 (Sugiyono, 2016).

Table 2. Reliability Test Results

Variable	Cronbach's Alpha Calculated Value	Description
Production Costs (X1)	0.603	Reliable
Production Capacity (X2)	0.793	Reliable
Price (X3)	0.686	Reliable
Craftsmen's Income (Y)	0.806	Reliable

Based on the table above, it shows that the Cronbach's Alpha level of the variable is > 0.60, so the indicators in the questionnaire used can be trusted to measure a variable in this table, which is declared reliable because the Cronbach's Alpha value is greater than the established reliability standard of 0.60.
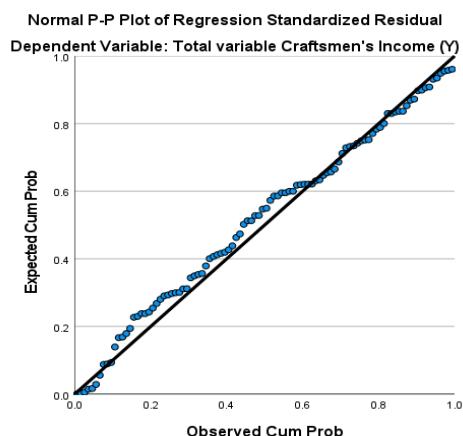
Normality Test

The normality test aims to assess the extent to which the standardized residual data in a regression model is normally distributed. In this study, researchers used the One-Sample Kolmogorov-Smirnov Test, where data is declared normally distributed if the significance value is greater than 0.05 (Ghozali, 2018).

Table 3. Normality Test Results
One Sample Kolmogorov Smirnov

			Unstandardized Residual
N			100
Normal Parameters	Mean		.0000000
	Std. Deviation		1.88144012
Most Extreme Differences	Absolute		.074
	Positive		.037
	Negative		-.074
Test Statistic			.074
Asymp. Sig. (2-tailed)			.200
Monte Carlo Sig. (2-tailed)	Sig.		.196
	99% Confidence Interval	Lower Bound	.186
		Upper Bound	.206

Based on the table above, the Asymp.Sig significance value is 0.200, which is higher than 0.05. Therefore, it can be concluded that the data is normally distributed. The assumption or requirement for normality in the model has been met.

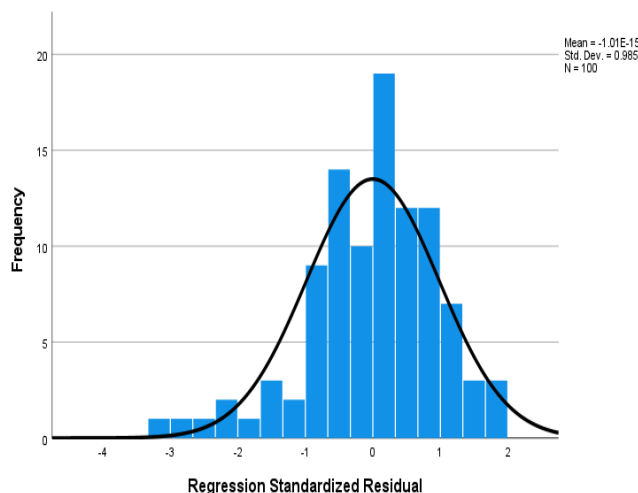The following results of the graph and histogram tests can be seen below:

Based on the image, the data is spread around the diagonal line and follows the direction of the diagonal line, so it can be concluded that the data in the regression model of this study is normally distributed.

Normality can also be seen through a histogram. If the histogram shows a bell-shaped shape, then the data can be concluded to be normally distributed.

Figure 2. Histogram

Based on the image, it shows that the data is bell-shaped, so it can be concluded that the data in this regression is normally distributed.

Multicollinearity Test

This measurement aims to determine whether there is a high correlation between the independent variables in the regression model formed. The regression model is declared free of multicollinearity if the TOL value is > 0.10 and the VIF value is < 10.
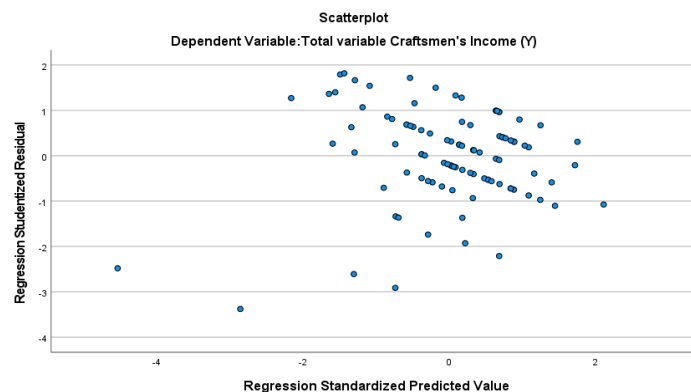
Table 4. Multicollinearity Test

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	5.281	1.849		2.857	.005		
Total variable production costs (X1)	.236	.092	.223	2.559	.012	.986	1.014
Total variable production capacity (X2)	-.185	.088	-.185	-2.104	.038	.972	1.029
Total variable price (X3)	.415	.083	.443	5.019	.000	.963	1.039

Based on the table, it can be seen that the three independent variables have a tolerance value greater than 0.1 and a VIF value less than 10. So it can be stated that the regression model in this study does not experience multicollinearity problems.

Heteroscedasticity Test
The heteroscedasticity test is a test carried out to determine whether in the regression model there is inequality in the variance of the residuals from one observation to another.

Figure 3. Heteroscedasticity Test

Based on the figure above, it can be concluded that there is no heteroscedasticity in this study. This is based on the graph, where the points in the graph do not form a clear pattern and are scattered above and below the number 0 on the Y-axis.

Multiple Linear Regression Test

Table 5. Multiple Linear Regression Test
Coefficients[a]

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	5.281	1.849		2.857	.005
Total variable production costs (X1)	.236	.092	.223	2.559	.012
Total variable production capacity (X2)	-.185	.088	-.185	-2.104	.038
Total variable price (X3)	.415	.083	.443	5.019	.000

Based on the results of multiple linear regression using SPSS 27, the regression equation is:

$$Y = 5{,}281 + 0{,}236X1 - 0{,}185X2 + 0{,}415X3 + e$$

From this equation it can be explained that:
1. The constant value of the above equation is 5.281, which means that if the values of the variables Production Cost (X1), Production Capacity (X2), and Price (X3) are zero, then the value of Craftsmen's Income (Y) is 5.281.
2. The Production Cost variable (X1) has a positive regression coefficient value of 0.236. A positive coefficient value indicates that production costs have a positive effect on Craftsmen's income. This means that if there is an increase of 1, production costs will increase by 0.236, assuming that other independent variables remain constant.
3. The Production Capacity variable (X2) has a negative regression coefficient value of -0.185. A negative coefficient value indicates that production capacity has a negative effect on income. Thus, production capacity illustrates that if there is an increase of 1, production capacity decreases by -0.185, assuming that other independent variables remain constant.
4. The Price variable (X3) has a positive regression coefficient value of 0.415. A positive coefficient value indicates that price has a positive effect on income. Thus, price indicates that if there is an increase of 1, the price will increase by 0.415, assuming that other independent variables remain constant.

Partial Significance Test (t-Test)

The test was conducted with a significance level of 5% and degrees of freedom $(df) = n - k - 1 = 100 - 3 - 1 = 96$, resulting in a t-table value of 1,984.

Table 6. Partial Significance Test (t-Test)

Coefficients^a

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	5.281	1.849		2.857	.005
Total variable production costs (X1)	.236	.092	.223	2.559	.012
Total variable production capacity (X2)	-.185	.088	-.185	-2.104	.038
Total variable price (X3)	.415	.083	.443	5.019	.000

The results of the partial test (t-test) based on the table above show:
1. The production cost variable (X1) has a positive and significant effect on craftsmen's income (t count 2.559 > 1.984; sig. 0.012 < 0.05), therefore H1 is accepted.
2. The production capacity variable (X2) has a negative and significant effect on craftsmen's income (t count -2.104 < 1.984; sig. 0.038< 0.05), therefore H2 is accepted.
3. The price variable (X3) has a positive and significant effect on craftsmen's income (t count 5.019 > 1.984; sig. 0.000< 0.05), therefore H3 is accepted.

Coefficient of Determination (R^2) Test

The coefficient of determination (R2) aims to determine how much an independent variable can explain its dependent variable. The results of the coefficient of determination test can be seen in the following table:

Table 7. Coefficient of Determination (R^2) Test

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.528	.278	.256	1.911

Based on the table above, the coefficient of determination R2 of 0.278 shows that the income of melinjo chips craftsmen in Pidie Regency is influenced by production costs, production capacity, and prices by 27.8%. Meanwhile, the remaining 72.2% can be influenced by factors not examined in this study.

Discussion
The Effect of Production Costs on Craftsmen's Income

The hypothesis test results show that production costs have a positive and significant effect on craftsmen's income (t count = 2.559 > 1.984; sig = 0.012 < 0.05), thus H1 is accepted. These results are in line with studies conducted by Sabrina Utami et al (2024), Rizma Faiqotul Laili (2023), and Haqiqi F. (2020).

The Effect of Production Capacity on Craftsmen's Income

The hypothesis test results show that production capacity has a negative and significant effect on craftsmen's income (t count = -2.104 < 1.984; sig = 0.038< 0.05), so H2 is accepted. In this study, production capacity has a negative coefficient value in the regression model and shows that there is a significant relationship between the variables tested. However, this does not necessarily mean that the relationship is positive or beneficial. This contradicts a study conducted by Dopas (2020), which states that production capacity has a positive or significant effect on income.

The Effect of Price on Craftsmen's Income

The hypothesis test results show that price has a positive and significant effect on craftsmen's income (calculated $t = 5.019 > 1.984$; $sig = 0.000 < 0.05$), so H3 is accepted. These results are in line with research conducted by Yuyum Suminar et al. (2024) and Hikmah, A. S (2018).

CONCLUSION

Based on the results of the analysis and discussion, it can be concluded that:

1. Production costs have a positive and significant effect on the income of melinjo chips craftsmen in Pidie Regency. By managing and optimizing the costs of raw materials, labor, and supporting materials, artisans can improve production efficiency, thereby increasing the income of melinjo chips craftsmen.
2. Production capacity has a negative and significant effect on the income of melinjo chips craftsmen in Pidie Regency. Increased production capacity also leads to higher operational costs, such as raw materials, labor, and energy, which in turn reduces profits. This causes the selling price of products to decline and has a negative effect on craftsmen's income.
3. Price has a positive and significant effect on the income of melinjo chips craftsmen in Pidie Regency. Using the right pricing strategy can increase the income of melinjo chips craftsmen.

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