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## **The Effect of Production and Sales Costs on Financial Performance (Study at One Agroindustry Company in Medan City)**

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### **ABSTRACT**

*Production costs incurred to process raw materials into finished products ready for sale. Sales are revenue transactions in the form of goods or services sent by customers to get cash to appreciate the obligation to pay. This study aimed to determine the effect of production and sales costs on an agro-industrial company in Medan City. This study uses a quantitative method, which uses data from the income statement and cost of goods sold from 2017 to 2019. This research uses primary data sources and secondary data. Primary data comes from the original or first source, and secondary data is already available so that it can search and collect data. Researchers obtained data which were then analyzed using the classical assumption test, normality test, multicollinearity test, autocorrelation test, multiple linear regression, partial test, simultaneous test, and R-square test of the coefficient of determination. The results of the study concluded that the value of production costs count > t table (-3.859 > 2.03452) and sig < 0.05 (0.01 < 0.05), so production costs have a negative and significant effect on financial performance. Then H<sub>0</sub> is accepted, and H<sub>a</sub> is rejected. For sales, t count > t table (2.146 > 2.03452) and sig < 0.05 (0.01 < 0.05), it can be concluded that sales have a positive and significant effect on financial performance. Then H<sub>0</sub> is accepted H<sub>a</sub> is rejected.*

*Keywords: Production Cost, Sales, and Financial Performance*

### **INTRODUCTION**

To develop, companies must go through struggles from support with careful planning in dealing with various problems and obstacles that arise, such as operational, financial problems and competition problems between companies of the products produced. Competition problems between companies require companies to improve quality continuously—services and efficiency in reducing production costs so that product sales prices remain competitive. (Anghelache et al., 2019; Piran et al., 2021)

The company's main activity is to process raw materials into finished materials that are ready for further processing to be sold and consumed by the public. Costs consist of raw

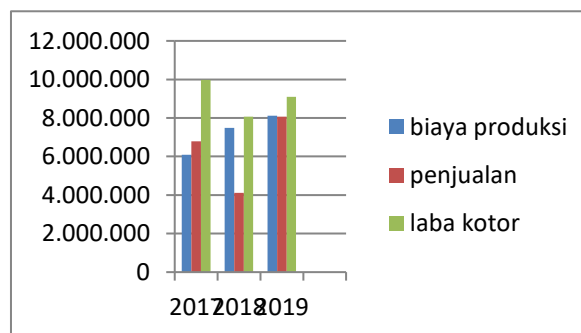
material, labor, and factory overhead costs. In its production activities, the company incurs various production costs that will affect sales and profits earned at the end of a period. (Markonah et al., 2020; Weygandt et al., 2020)

Sales also affect the company's income. This condition is because sales can be said to be the life of a company; without sales, there is no revenue and profit, so there is no company. This condition is only possible with the sales level of the company's operating results. (Kumar et al., 2020; Mauris & Rizal, 2021; Samo & Murad, 2019)

The company's performance at the end of the period must be evaluated to determine the development of the company and also determine the maximum profit. Because with the existence of profits, the company can ensure the continuity of business activities and financial performance goes well. (Samo & Murad, 2019; Wulandari et al., 2020) Companies use financial performance measurements to improve operational activities to compete with other companies. (Arsyad et al., 2021; Kusmawati et al., 2022)

PT. Perkebunan Nusantara IV (Persero) Medan is a company engaged in the plantation business, processing, and marketing of plantation products; the company's business activities include the cultivation and processing of oil palm plants. Of course, this company is trying to achieve maximum profit. In obtaining maximum profit, the company increases the activity or volume of production and sales.

On the other hand, if the production volume increases, the production costs required to make the product will be higher. Therefore, the increase and the amount of production costs incurred by the company are expected to decrease sales and profits.



Source: Data from an Agro-industry Company in Medan City

**Figure 1. Graph of Production Costs, Level of Sales, and Gross Profit at an Agro-Industry Company in Medan City in 2017-2019**

Based on the graph above, it can be seen that from 2017 to 2019, there were fluctuations in sales and production costs of palm oil in the form of increases or decreases.

The table and graphic explanation above shows that the decrease and increase in sales cannot be predicted due to the decrease and increase in production costs. For example, from 2017 to 2018, there was only a slight increase in production costs incurred.

In 2018, sales and gross profit decreased while production costs increased. The size of the sales received by the company can be determined by the costs used in the production process because production costs are a significant factor in increasing the company's

income and profits. Efforts to create and increase income and profits can also be carried out by reducing production costs (raw material costs, direct labor costs, factory overhead costs) to a minimum. To what extent is the relationship between production and sales costs on the company's financial performance will be analyzed in this study.

Based on the description above, the researcher is interested in conducting a research entitled Influence of production and sales costs in one of the agro-industrial companies in Medan City.

## **METHOD**

The present study utilizes quantitative research methods. Based on the positivism philosophy, quantitative research examines specific populations or samples. Data collection involves using research instruments, and data analysis is conducted quantitatively or statistically to test the formulated hypotheses.

The population refers to a general area comprising objects or subjects with specific qualities and characteristics determined by the researcher for the study and subsequent conclusions. In this research, the population consists of the financial statements of an Agro-industrial Company located in Medan City.

The sample represents a portion of the population and possesses similar characteristics. The sampled companies include three-year reports on production costs and sales results from one of the Agro-industrial Companies in Medan City.

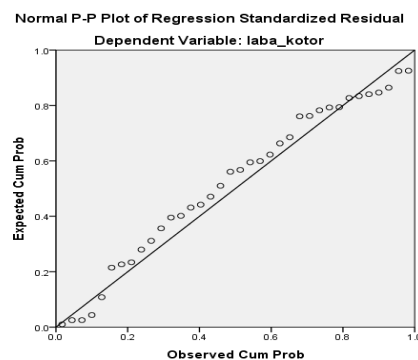
This research utilizes secondary data sources, not directly providing data to the data collectors but through other people or documents. On the other hand, the primary data source directly provides data to the data collectors. The quantitative data sources for this study include production cost reports, sales reports, and financial reports. The observation period spans from 2017 to 2019, and the research was conducted at one of the Agro-industrial Companies in Medan City.

The data collection method employed in this study is the observation method, where the researchers directly observe the research subjects to collect data instead of conducting interviews. Interviews, on the other hand, involve a question-and-answer process with parties related to the research object to gather accurate data. Documentation is used to obtain data and information from various sources, such as books, archives, documents, writings, numbers, and pictures, in the form of reports and information supporting the research. This study uses documentation to collect and review data, including production cost reports, sales reports, and financial reports. Furthermore, assessing data quality involves conducting classical assumption tests, followed by applying the multiple regression analysis methodology for analysis.

## **RESULTS AND DISCUSSION**

The conventional assumption test is employed to evaluate the outcomes of data quality assessment, specifically the normality test, which ascertains whether the data under consideration conforms to a normal distribution. A regression model that conforms to a

standard or approximately normal distribution is considered high quality. The normality probability plot is a graphical technique employed to evaluate the normality of data. Identifying normality entails examining the distribution of data along the diagonal axis of an entire graph to arrive at conclusions: The regression model fulfills the normality assumption if the data distribution is dispersed along the diagonal line and conforms to its orientation. Suppose the observed data exhibits deviation from the diagonal line or fails to conform to its orientation. In that case, it can be inferred that the regression model does not satisfy the normality assumption.



**Figure 2. Normality Test**

The figure depicts the results obtained from the P-P Regression Plot Standardized Residual section of SPSS version 22. The alignment of data points along a straight diagonal line indicates that the data in this study conforms to a normal distribution. The autocorrelation test aims to identify potential deviations from the classical autocorrelation assumption. Autocorrelation issues should be avoided in a dependable regression equation to ensure its appropriateness for precise prediction. The Durbin Watson (DW) value of 1.045 has been calculated based on the obtained estimation results. This parameter denotes the lack of autocorrelation. Consequently, the issue of autocorrelation is absent.

In order to evaluate the presence of multicollinearity, a statistical examination was performed to determine if a correlation exists between the independent variables within the regression model. The presence of multicollinearity can be inferred from the existence of a correlation. A strong correlation suggests that the independent variables measure similar constructs. An optimal model should exhibit a tolerance threshold greater than or equal to 0.1 and a variance inflation factor (VIF) less than or equal to 10. Hence, a model must possess a tolerance value exceeding 0.10 and a VIF value below 10 to address the multicollinearity issue.

Based on the calculation results, the tolerance value is more significant than 0.10 ( $0.983 > 0.10$ ), and the variance inflation factor (VIF) value shows that the independent variable is not more than 10 ( $10 < 1.017$ ). So, there is no multicollinearity between the independent variables so the regression model can use.

After testing all the classical assumptions, it can conclude that the regression model can be used to determine the effect of the coefficient of variable X on variable Y, so the next step for regression analysis can be seen from the table by the SPSS data as follows:

**Table 1. Multiple Linear Regression Calculation Results**

| Model          | Unstandardized Coefficients |            | Standardized Coefficients | T      | Sig. | Collinearity Statistics |       |
|----------------|-----------------------------|------------|---------------------------|--------|------|-------------------------|-------|
|                | B                           | Std. Error | Beta                      |        |      | Tolerance               | VIF   |
| (Constant)     | 896.953                     | 69.315     |                           | 12.940 | .000 |                         |       |
| biaya_produksi | -.380                       | .099       | -.547                     | -3.859 | .001 | .983                    | 1.017 |
| Penjualan      | .163                        | .076       | .304                      | 2.146  | .039 | .983                    | 1.017 |

a. Dependent Variable: gross profit  
 Source: Data processed with SPSS version 22

The provided table indicates that the equation for multiple linear regression is  $Y = 896.953 - 0.380X_1 + 0.163X_2 + e$ . The constant value of 896.953 can be derived by applying multiple linear equations. Consequently, in the scenario where  $X_1$  and  $X_2$  are simultaneously assigned a value of zero, the numerical output of  $Y$  is 896.953. The regression analysis reveals that the production cost variable has a negative coefficient of -0.380. This condition suggests that a unit increase in production costs will result in a corresponding decrease of -0.380 in the value of  $Y$ , all else being equal. The regression analysis reveals that the sales variable has a regression coefficient of 0.163, indicating that a unit increase in sales will result in a corresponding increase of 0.163 units in the value of  $Y$  while holding all other independent variables constant.

The partial test involves conducting a multiple regression analysis to ascertain the potential partial impact of the independent variables, production and sales costs, on the dependent variable  $Y$ . The criteria can be determined based on the significance values obtained from the Statistical Package for the Social Sciences (SPSS) output: If the Sig value  $< 0.05$ , then the independent variables (Production and Sales Costs) significantly affect financial performance. If the Sig value  $> 0.05$ , then the independent variables (Production and Sales Costs) do not affect financial performance.

Criteria based on  $t_{count}$  and  $t_{table}$  values are: If the value of  $t_{count} > t_{table}$ , then the independent variables (Production and Sales Costs) affect financial performance. If the value of  $t_{count} < t_{table}$ , then the independent variables (Production and Sales Costs) do not affect financial performance.

The partial t-test calculation results show that: Effect of Production Costs on Gross Profit Based on the table showing the results of the t-test for the production cost variable with a value of  $t_{count} X_1 = -3.859$  and  $t_{count} X_2 = 2.146$ , it is significant to calculate the table value, namely  $df = n - k = 36 - 3 = 33$  so  $t_{table} = 2.03452$ . If the value of  $t_{count} > t_{table}$ , then the independent variable affects the dependent variable. If the sig value is  $<$ , then the independent variable significantly affects the dependent variable.

Based on the SPSS output for production costs, the count > ttable ( $-3.859 > 2.03452$ ) and sig < 0.05 ( $0.01 < 0.05$ ), so it can be concluded that production costs have a negative and significant effect on financial performance. Then H<sub>0</sub> is accepted H<sub>a</sub> is rejected.

Based on the sales value of tcount > ttable ( $2.146 > 2.03452$ ) and sig < 0.05 ( $0.01 < 0.05$ ) so it can be concluded that sales have a positive and significant effect on financial performance. Then H<sub>0</sub> is accepted H<sub>a</sub> is rejected.

The F test (simultaneous) is utilized to conduct simultaneous testing to determine whether the independent variables, namely Production and Sales Costs, have a significant impact on the dependent variable, financial performance when considered collectively. In addition, the Fcount test employs simultaneous testing, whereby the Fcount value is juxtaposed against the Ftable. Therefore, the present examination aims to concurrently assess the statistical significance of the regression quality of both independent variables (X<sub>1</sub> and X<sub>2</sub>), thereby ascertaining their impact on the dependent variable (Y).

Based on the calculation results, it can be seen that Fcount is 8.826 while the magnitude of Ftable is  $df_1 = (k-1) = (3-1=2)$ ;  $df_2 = (n-k) = (36-2=34)$ , then we get a Ftable of 3.28. It can be seen that the value of Fcount is greater than Ftable ( $8.826 > 3.28$  with a significance of  $0.001 > \alpha = 0.05$ ). If Fcount > Ftable, then there is a positive effect. If it is significant < 0.05, then it has a significant effect.

It can be concluded that in the third hypothesis, H<sub>0</sub> is accepted, and H<sub>a</sub> is rejected. Namely, there is an effect of production costs and sales simultaneously on financial performance. Furthermore, R square (R<sup>2</sup>) determines how much influence or high or low the influence of Production and Sales Costs as an independent variable on financial performance as the dependent variable.

The findings of the determination test computation indicate that the coefficient of determination is 0.348, signifying that the explanatory variables (X<sub>1</sub> and X<sub>2</sub>) impact 34.8% on the response variable (Y). This observation suggests a significant correlation between the predictor and response variables. Concurrently, the residual of 65.2% is subject to the influence of additional factors that the researchers did not examine. The findings of the determination test computation indicate that the coefficient of determination is 0.348, signifying that the explanatory variables (X<sub>1</sub> and X<sub>2</sub>) impact 34.8% on the response variable (Y). This observation suggests a significant correlation between the predictor and response variables. Concurrently, the residual of 65.2% is subject to the influence of additional factors that the researchers did not examine. The results of this study show that the costs of production and sales on financial performance have increased and decreased. The researcher used data on production costs, sales, and the company's gross profit from 2017-2019 for a total sample of 36 data.

Partially, the production cost variable has no significant effect on financial performance, and the sales variable has no significant effect on financial performance. Simultaneously production and sales costs have no significant effect on financial performance. This condition is the same as the research results, where the value of the coefficient of

determination (R<sup>2</sup>) gives a proportion of 0.348 or 34.8%. The coefficient of determination answers that the variable costs of production and sales on financial performance give a proportion of 0.348, which is 34.8% for production and selling costs. Other variables influence the remaining 65.2%.

Production costs are one of the key factors contributing to the company's profit growth. (Schroeder et al., 2022) The greater the efficiency of production costs, the more likely the company will increase its net profit. (Nariswari & Nugraha, 2020) Increasing net profit can be increased by reducing production costs; companies can improve operational efficiency. (Piran et al., 2021) For example, companies can save time and resources by using more efficient production technologies or adopting sustainable manufacturing practices.

In addition, sales also play an essential role in company profits. (Shashi et al., 2019) The higher the sales volume, the more likely the company will increase its net profit. (Elviana & Hapzi Ali, 2022) By increasing sales volume, companies can increase their income. The higher the income, the more likely the company will increase its net profit. In addition, by increasing sales volume, the company can expand its market share. (Nariswari & Nugraha, 2020; Weygandt et al., 2020) This situation can increase company competitiveness and open up opportunities to increase product prices. (Boyko et al., 2019; Hanrahan et al., 2018)

Based on the negative correlation results, the effect of production costs on net income is -0.456, which is classified as a moderate relationship category. This condition shows from the correlation value, which is between 0.40 to 0.599, which is classified as in the medium category, and the relationship is negative, meaning that any increase in production costs will reduce the amount of net profit and vice versa when production costs decrease, the amount of net profit will decrease.

## **CONCLUSION**

In light of the findings and discourse presented in the preceding section, as well as the administered examinations, it is possible to infer the subsequent conclusions: The study's results, which were derived from a limited sample, suggest that the influence of production costs on financial performance is not statistically significant. This condition is apparent from the insignificance value, indicating that the impact of sales on financial performance is not statistically significant. Thus, this study establishes the restricted impact of production and sales expenditures on financial performance. Regarding concurrent testing, the findings suggest that both production and sales costs significantly influence financial performance growth.

Drawing from the deductions inferred from the outcomes of the data analysis, several recommendations can be put forward: It is recommended that investors prioritize the evaluation of a company's capacity to generate profits and gain a comprehensive understanding of the potential outcomes of any system modifications implemented within the organization before making investment decisions. Furthermore, it is recommended that

companies operating in the consumption sector prioritize closer scrutiny of their profitability levels, as exemplified in the present study. In a highly competitive market, the ability to maintain lower production costs is a critical determinant of success. By reducing production costs, corporations can sustain or enhance their competitiveness satisfactorily. Moreover, it is anticipated that this study will serve as a supplementary source for subsequent investigations in the corresponding domain for upcoming scholars, with the aspiration that it will be enhanced and refined. One potential approach to consider is extending the research period and the augmentation of the sample size under investigation.

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