The Effect of Production and Sales Costs on Net Profit (Study of Pharmaceutical Companies Listed on the Indonesia Stock Exchange for the Period 2013-2021)

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Abstrac. This research aims to determine the effect of production and sales costs on net profit. The object of this study is the annual financial statements of pharmaceutical sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2013-2021 period which were recorded by 10 companies, but only 9 companies (81 financial statements) were used as samples based on criteria that had been planned and made by researchers. The research method used in this study is a descriptive and verifiable method with quantitative approach. The analytical tools used are multiple linear regression and coefficient of determination, to test a hypothesis, namely by using the T test and the F test. Then, the data processing process of this study used the IBM SPSS Statistic 16 Program. The results of the study showed in the T test that there is a partial influence between production costs on net profit and there is an influence between sales and net profit. Based on the results of the F test simultaneously variableproduction and sales costs affect net profit.

Keywords: *Production Costs, Sales, and Net Profit*

INTRODUCTION

In the pharmaceutical sector, the English word "pharmacy" comes from the Greek word "pharmakon," which means medicine or poison. Pharmacy is a health field that combines aspects of health science, physics, and chemistry (Mukharij Nur Alam, 2011). The scope of pharmacy is very broad, including the discovery, research, manufacture, compounding, provision of drugs, testing, development, and information services related to drugs. The beginning of pharmaceutical science developed with the discovery and research of traditional medicines used by our ancestors in ancient times. Over time, pharmaceutical science has developed with more sophisticated and modern technology to be able to produce drugs quickly that meet requirements and meet needs.

At the end of 2019, China, specifically Wuhan, discovered a new outbreak of a mysterious virus that had not been previously identified. However, after being studied by health experts, this virus was named Covid-19 (Coronavirus Disease-19) which had been going on since the end of 2019. The World Health Organization or WHO declared that this coronavirus had spread throughout the world and was declared a Public Health Emergency of International Concern (PHEIC) and had entered Indonesia since early March 2020 according to (Prianata, 2021).

The COVID-19 pandemic, a contagious respiratory disease, has had a significant impact on the world in a short time. Nearly every sector has been impacted by the outbreak. One industry that should have benefited during the pandemic is the pharmaceutical industry, as many people are flocking to medicines and medical devices to protect themselves from the pandemic, as reported by (Supriyatna, 2020).

In Indonesia, the Covid-19 outbreak has caused the economic order to decline drastically, not only in Indonesia but also outside Indonesia, other countries have the same crisis problems, said (Adrian, 2020). Government efforts to stabilize the economy continue to be carried out, however, changes that occur due to the Covid-19 pandemic require time to restore all aspects affected by the pandemic, such as companies that survive now where in general the profits obtained have decreased

due to disruptions in the financial aspect of the community in general and also employee cuts that are carried out in order to balance expenses and income.

People are urged to take care of themselves, especially during social interactions, starting with limiting their time outside the home, wearing masks, purchasing hand sanitizer, and purchasing vitamins. All of this is being done under government recommendations to limit the spread of COVID-19. This will undoubtedly impact profits for pharmaceutical companies, which provide protective equipment and medications during the three stages of the pandemic. Therefore, if people prioritize their health needs due to concerns about contracting COVID-19, the pharmaceutical industry is increasingly important. Public awareness of demand is high, so production costs for selling goods require significant capital and raw materials to meet public demand during the pandemic. All pharmaceutical companies will compete to increase their sales to maximize the opportunity for increased profits during the pandemic and also make a significant contribution to the national economy during the outbreak.

The reason for choosing a pharmaceutical company as the research object is because it is one of the companies that is highly sought after by the public and plays a significant role in dealing with the Covid-19 pandemic. Another reason is that the majority of medicines and medical devices are distributed by the pharmaceutical industry, thus, they can be used to maintain health during the Covid-19 pandemic. The researcher used research variables, namely Production Costs and Sales, to measure the influence of these variables on the company's net profit. Research on the variables that influence net profit has been conducted by previous researchers, with varying results.

Based on the background and phenomena above, the researcher wants to know how much production and sales costs in pharmaceutical companies that have been carried out well so that they affect net profit, so the author is interested in conducting research with the title "The Effect of Production and Sales Costs on Net Profit in Pharmaceutical Companies Listed on the Indonesia Stock Exchange for the 2013-2021 Period".

METHOD

Research Design

Research design is a researcher's plan for determining the appropriate planning for a study. Research design serves as a useful guideline and guide for researchers in developing strategies that can produce a research method. (Sugiyono, 2019) explains, "A method in a research structure is a scientific way of obtaining data to meet specific expectations."

The steps taken in this research are as follows: Components and quantitative research According to (Sugiyono, 2019, p. 58)

1. Components & processes of quantitative research
2. Operationalization of Variables
3. Sources & Methods of Data Collection
4. Methods of Data Collection
5. Data Determination Techniques
6. Sample

Data Analysis Techniques

Descriptive Analysis Techniques

According to (Sugiyono, 2018, p. 238) descriptive techniques are analyses carried out to analyze data by describing the collected data as it is without intending to draw conclusions that apply to the general public.

Descriptive analysis can also provide an overview of each research variable as seen from the mean, maximum value, minimum value, and standard deviation.

Verification analysis techniques.

Verification analysis technique according to (Sugiyono, 2018, p. 55) that: a research method that aims to determine the relationship between variables. With this method, researchers collect historical data and observe certain aspects that are closely related to the problem being studied, until

data is obtained that can support the preparation of a research report. The data is then processed and analyzed further with theory as a basis, so that an overview of the object is obtained and conclusions can be drawn regarding the problem being studied. Verification analysis is used to test hypotheses using statistical calculations, this study uses the path analysis method or multiple linear regression.

Multiple Linear Regression

According to (Ghozali, 2018, p. 95) the multiple linear regression analysis model is used to explain the relationship and how much influence the independent variables have on the dependent variable. The multiple linear regression equation is:

$$Y = a + b^1 X^1 + b^2 X^2 + e$$

Information:
Y = Net Profit
α = Constant
b1 and b2 = Coefficients of Variables X^1 and X^2
X^1 = Production Cost
X^2 = Sales
e = Standard Error

Correlation Coefficient Analysis

Correlation coefficient analysis is useful for determining the direction and strength of the relationship between variables. The direction of the relationship can be positive or negative, while the strength or weakness is expressed in the value of the correlation coefficient. The strength of the correlation value ranges between -1 and 0.

a. If r = -1 means a perfect negative correlation, the opposite form of the relationship between variables X and Y. If variable X increases then variable Y decreases.
b. If r = 1 means a perfect positive correlation, a form of unidirectional relationship between variables X and Y. If variable X increases then variable Y also increases.

Analysis of the Coefficient of Determination

The coefficient of determination is connoted by (R^2). (Ghozali, 2018, p. 97), states that "the value of the coefficient of determination (R^2) is between zero and one. A small R^2 value means that the independent variable has very limited ability to explain the dependent variable. However, if the R^2 value is larger, it indicates that the independent variable's ability to explain the dependent variable is getting better.

RESULTS AND DISCUSSION

Overview of the Unit of Analysis

1. Kimia Farma Tbk
2. Pyridam Farma Tbk
3. Indofarma Tbk
4. Daryah Varia Laboratoria Tbk
5. Kalbe Farma Tbk
6. Merck Indonesia Tbk
7. Industri Jamu & Farmasi Sido Muncul Tbk
8. Tempo Scan Pasific Tbk
9. Organon Pharma Indonesia Tbk

Descriptive Research Results

Descriptive research aims to describe the actual data collected using secondary data, namely financial reports, to obtain the necessary information. Data can be presented in graphs, tables, and other formats. Researchers used nominal-scale statistical analysis techniques, examining the smallest, largest, mean, and standard deviation values using SPSS 16 and Microsoft Excel. The results of this descriptive research can be seen in the following table:

Descriptive Test Results

	N	Minimum	Maximum	Mean	STD Deviatio
Production cost	81	9318	7346831	1460585.85	178926440
Sale	81	192555	26261194	5323709.32	638308971
Net profit	81	30	2537601	438790.05	638923.44
Valid N	81				

Source: data processing using SPSS 16

From the data above, we can see the descriptive statistical values which include the number of samples (N), Minimum, Maximum, Average (Mean), and Std Deviation for each sample company as follows:

The statistical test results above indicate that the number of samples in this study is 81 samples (9 companies x 9 years) in pharmaceutical companies for the period 2013-2021. The table shows that the production cost variable has a minimum value of 9,318 in the Kimia Farma Tbk company in 2018, a maximum value of 7,346,831 in the Kalbe Farma Tbk company in 2021 and an average production cost of 1,460,585.85 with a standard deviation of 1,789,264.540.

The test results show that the sales variable has a minimum value of 192,555 at the Pyridam Farma Tbk company in 2013, a maximum value of 26,261,194 at the Kalbe Farma Tbk company in 2021 and an average sales of 5,323,709.32 with a standard deviation of 6,383,089.571.

The test results show that the net profit variable has a minimum value of 30 in the Indofarma Tbk company in 2020, a maximum value of 2,537,601 in the Kalbe Farma Tbk company in 2019 and an average net profit of 438,790.05 with a standard deviation of 638,923.454.

Verification Research Results

Normality Test

The normality test is carried out to determine whether the independent and dependent variables have a normal distribution or not, while a good regression model is a regression that has a normal distribution.

	Unstandardized Residual
N	81
Normal Parameters Mean	.0000000
Std. Deviation	2.89435769E2
Most Extreme Absolute	124
Differences Positive	.086
Negative	-.124
Kolmogorov-Smirnov Z	1.116
Asymp. Sig. (2-tailed)	.166

Source: Results of processing SPSS 16

Based on the table of normality test results with Kolmogorov-Smirnov, it can be seen that the Asymp. Sig 2-tailed value is 0.166 so that the data is normally distributed with a K-S sig value > 0.05, namely 0.166 > 0.05, which indicates that the residual data is normally distributed.

Multiple Linear Regression Test

The multiple linear regression test aims to show whether the data has an influence between the independent and dependent variables. The following are the results of the multiple linear regression test:

Multiple Linear Regression Test Table

Model	Unstandardized Coefficients		Standardized Coefficients	t	Say
	B	Std Error	Beta		
1. (Constant)	62,782	61,725		1.017	312
Production Cost of Sales	195	092	323	2.120	037
	136	050	411	2.697	009

Source: Results of processing SPSS 16

Based on the calculation results above, the following regression equation is obtained:

LB = 62,782 + 0,195 BP + 0,136 P + e

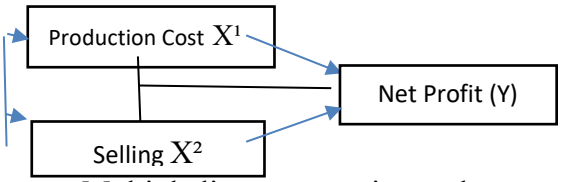
Information:

LB = Net Profit

BP = Production Cost
P = Sales
AND = Other factors

So, it can be explained as follows:

a. The constant value is 62.782, which means that if the value of production and sales costs is 0, then net profit is 62.782.
b. The value of the regression coefficient X^1 Production Cost is 0.195 which means the value
   This indicates a positive relationship between Production Costs and Net Profit. These results explain that if the Production Cost figure of X^1 is Rp. 1 and other variables are assumed to be constant; the Net Profit value will increase by 0.195.
c. The regression coefficient value of X^2 Sales is 0.136, indicating a positive relationship between Sales and Net Profit. This result explains that if the Sales value of X^2 is Rp. 1 and other variables are assumed to be constant, then the Net Profit value will increase by 0.136.



Multiple linear regression path

Correlation Coefficient Analysis

This analysis was conducted to determine the direction and strength of the relationship between variables. The direction of the relationship is expressed as positive and negative and the strength of the relationship is expressed by the size of the correlation coefficient.

Correlation Coefficient Table

	Production cost	Sale	Net profit
Production cost	1	850	672
Sale	850	1	685
Net profit	672	685	1

Source: Results of processing SPSS 16

Based on the output results of the correlation table between the variables, the following results were obtained:

1. The correlation between production costs and net profit is 0.672, or 67.2%. This indicates a high correlation, which is interpreted as positive. This means that an increase in production costs will result in an increase in Y (net profit).
2. The correlation or relationship between production costs and sales has value of 0.850 or 85%. This means that the value is in the very high category in the correlation relationship. Obtained, the higher the value of production costs, the higher the sales value will be.
3. The correlation or relationship between production costs and sales has value of 0.850, or 85%. This means that the correlation value falls into the very high category. As production costs increase, sales value also increases.

CONCLUSION

Based on the results of research and discussion on the influence of Production and Sales Costs on Net Profit, the researcher draws the following conclusions:

1. Production costs had a significant positive partial effect on net profit in pharmaceutical companies listed on the IDX from 2013 to 2021. Therefore, it can be concluded that in this research case, production costs affect net profit. This means that the higher the production costs, the lower the net profit issue then the Net Profit obtained will increase.
2. Sales had a significant positive partial effect on net profit for pharmaceutical companies listed on the IDX from 2013 to 2021. Therefore, it can be said that if sales increase, net profit will increase.
3. Production and sales costs have a positive and significant effect on net profit in companies listed on the IDX 2013-2021, so they are considered to have a simultaneous effect, meaning that if the value of production costs and

sales increases, the value of net profit will also increase.

SUGGESTION

Based on the research results, discussion and conclusions that have been described, the following suggestions can be given:

1. The research on the pharmaceutical sector listed on the Indonesia Stock Exchange (IDX) between 2013 and 2021 yielded a coefficient of determination of 45.2%, indicating a moderate level of profitability. Therefore, companies should increase their production costs by allocating these costs to increase or create larger production capacity, which will ultimately impact net profit.
2. The Sales to Net Profit ratio for research in the pharmaceutical sector listed on the IDX from 2013 to 2021 yielded a determination coefficient of 47%, which is considered moderate. Therefore, pharmaceutical companies should consider the intensity of sales to ensure a positive net profit obtained will get bigger.
3. Production and Sales Costs to Net Profit for research in the sector. The determination coefficient for pharmaceutical companies listed on the Indonesia Stock Exchange (IDX) between 2013 and 2021 was 49.9%, indicating they fall into the moderate category. Therefore, companies should increase production costs as efficiently as possible by allocating production costs to create or add more product units. This will ultimately lead to higher sales, which will ultimately impact the company's net profit.
4. For other researchers, it is hoped that they will conduct further research on variables which is outside of this research.

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