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THE INFLUENCE OF CURRENT RATIO, TOTAL ASSET TURNOVER, AND R&D INTENSITY ON RETURN ON COMPANY ASSET IN THE PHARMACY SECTOR LISTED ON IDX FOR THE 2018-2023 PERIOD

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ABSTRACT

This research aims to analyze the influence of Current Ratio, Total Asset Turnover, and Research and Development (R&D) Intensity on Return on Assets. The population in this research are all pharmaceutical sector companies listed on the Indonesia Stock Exchange. Meanwhile, the sample was 8 pharmaceutical companies using the purposive sampling method. Secondary data was obtained from the Indonesian Stock Exchange and the official website of each company. The independent variables used are current ratio, Total Asset Turnover, and R&D Intensity. Meanwhile the dependent variable is Return on Assets. The data analysis technique used is descriptive analysis and path analysis with SEM PLS. The results of this research show that the current variable has a positive and significant effect on Return on Assets, while the total asset turnover and R&D intensity variables have a negative and insignificant effect on Return on Assets.

Keywords: Current Ratio, Total Aset Turnover, Intensitas Research and Development (R&D), Return on Asset

PENGARUH CURRENT RATIO, TOTAL ASSET TURNOVER, DAN INTENSITAS R&D TERHADAP RETURN ON ASSET PERUSAHAAN DI SEKTOR FARMASI YANG TERDAFTAR DI BEI PERIODE 2018-2023

ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh Current Ratio, Total Aset Turnover, dan Intensitas Research and Development (R&D) terhadap Return on Asset. Populasi dalam penelitian ini adalah seluruh perusahaan sektor Farmasi yang terdaftar di Bursa Efek Indonesia. Sedangkan sampel sebanyak 8 perusahaan farmasi dengan menggunakan metode purposive sampling. Data sekunder diperoleh di Bursa Efek Indonesia dan website resmi masing-masing perusahaan. Variabel independen yang digunakan adalah current ratio, Total Aset Turnover, dan Intensitas R&D. Sedangkan variabel dependent adalah Return on Asset. Teknik analisis data yang digunakan adalah analisis deskriptif dan analisis jalur dengan SEM PLS. Hasil penelitian ini menunjukkan bahwa variabel current berpengaruh positif dan signifikan terhadap Return on Asset, sedangkan variabel total asset turnover dan intensitas R&D berpengaruh negative dan tidak signifikan terhadap Return on Asset.

Kata Kunci: *Current Ratio; Total Aset Turnover; Intensitas Research and Development (R&D); Return on Asset*

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INTRODUCTION

The positive conditions experienced by the national pharmaceutical industry even during the Covid-19 pandemic have not been able to eliminate several problems and challenges faced by the national pharmaceutical industry. Data from the Association of Indonesian Pharmaceutical Companies (GPFI) shows that there are approximately 200 pharmaceutical industries in Indonesia with a total sales value in 2019 of IDR 80 trillion. This figure is still relatively low compared to other pharmaceutical industries.

In the business world, company profitability is one of the important indicators used to measure the efficiency of a company in using its assets to generate profits. Company profitability is a measure used by investors as a basis for the decision-making process and is the goal of competitive advantage (Wijayanto et al., 2019) . In order to increase company profitability, the manufacturing industry must be able to create a product that is of high value and beneficial to society. This means that companies must develop products and services that consumers want and need, leading to new technologies and new products.

The pharmaceutical industry is a knowledge-based industry, characterized by the large costs incurred for research and development (R&D) purposes, especially related to efforts to find new drugs. As data released by the JRC (European Commission's Joint Research Center), R&D spending in the Pharmaceutical and Biotechnology sectors is the largest compared to other sectors, with a contribution of 19.1% to the total R&D spending of all sectors in 2016. Furthermore, according to the Industrial R&D Investment Scoreboard report released by the Industrial Research and Innovation Monitoring and Analysis (IRIMA), 22 of the 50 companies with the largest R&D spending in the world in 2016 were in the pharmaceutical sector, with 6 of them engaged in biotech (Amgen, Biogen, Celgene with AstraZeneca, Bristol-Myers and Merck US). R&D in the pharmaceutical industry is a series of research and development processes aimed at finding new pharmaceutical products or improving the quality of existing products, including safety, effectiveness, and acceptance. R&D is closely related to the development of cutting-edge science and technology, so that it requires updating of knowledge & information for R&D personnel. So it can be concluded that R&D (Research and Development) of pharmaceutical products is very important to survive in the competition of the pharmaceutical industry.

Current ratio is one of the most important financial ratios for companies including companies in the pharmaceutical sector. This ratio is used to measure the company's ability to meet its short-term obligations using its current assets. The higher the current ratio, the better the company's ability to pay its short-term debts. If the current ratio is too low, it means that the company may have difficulty paying its short-term debts. This can cause liquidity problems, which are conditions in which the company lacks cash to run its daily operations. Poor liquidity can threaten the survival of the company.

In addition, the Total Asset Turnover (TATO) ratio is one of the important metrics in financial analysis that measures how efficiently a company is utilizing its assets to generate sales. The higher the TATO value, the more effective the company is in managing its assets. High TATO indicates that the company is able to generate higher sales with the same amount of assets. This means that the company is more efficient in managing its assets. Companies with high TATO generally have a competitive advantage over their competitors. They are able to operate more efficiently, so they can offer more competitive prices or invest more resources in developing new products and services. Therefore, this study will discuss the effect of Current Ratio (CR). Total Asset Turnover (TATO), and R&D intensity on ROA in pharmaceutical sector companies listed on the Indonesia Stock Exchange (IDX) during the period 2018-2023.

LITERATURE REVIEW

Resource-Based View Theory

The Resource-Based View (RBV) theory was first pioneered by Wernerfelt (1984) . The RBV theory views that company resources and capabilities are important for the company because they are the basis of the company's competitiveness and performance. The RBV theory explains how a company can compete with other companies by managing the resources it has according to the company's ability to achieve competitive advantage.

To improve performance, companies must be able to efficiently use the company's resources or proprietary capabilities in a way that allows them to reduce costs, exploit market opportunities and/or neutralize competitive threats. The concept of profit efficiency refers to a company's ability to reduce costs and create greater economic value from its output.

Current Ratio

According to Kasmir (2018, p. 134) Current ratio measures the company's ability to pay short-term liabilities or debts that are due immediately when billed in their entirety. Current Ratio shows how much assets contribute to current liabilities. This ratio is important because it shows the financial health of the company. Here is the formula for calculating the current ratio:

$$\text{CR} = \frac{\text{Asset Lancar}}{\text{Utang Lancar}} \qquad (1)$$

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Total Asset Turnover

According to Rosyamsi (2019, p. 31) Total assets turnover to describe asset turnover measured by sales volume. The higher the total assets turnover ratio means the more efficient the use of all assets in generating sales. This also shows the better the company is in utilizing its assets. Here is the formula for calculating total asset turnover:

$$TATO = \frac{Net\ Sales}{Total\ Asset} \quad (2)$$

Research and Development Intensity

Usman et al. (2017) stated that R&D intensity refers to a company's spending on research and development. R&D investment can increase innovation and competitiveness, which in turn can affect profitability. Here is the formula for calculating R&D intensity:

$$Intensitas\ R\&D = \frac{\text{R\&D expense}}{\text{Net sales}} \quad (3)$$

Formulation of Hypothesis

The Effect of Current Ratio on ROA

Current ratio is a financial ratio that measures a company's ability to meet its short-term obligations using current assets. Companies have strong liquidity, meaning they have enough current assets to pay short-term debts. Based on the Resource Based View Theory, an optimal current ratio can be considered as one manifestation of a company's ability to manage its resources. If this strong liquidity is used to fund profitable projects, ROA will increase. Lartey et al. (2013) stated that liquidity management becomes more important during a crisis.

Research conducted by Samo & Murad (2019) in the Textile industry in Pakistan from 2006 to 2016 found that there was a positive influence between liquidity and profitability. Another study conducted by (Pratheepan, 2014) also found that liquidity had a positive and significant effect on profitability in Sri Lankan manufacturing companies.

H1: Current Ratio has a positive effect on ROA

The Effect of Total Asset Turnover on ROA

Companies can use organizational resources to improve the operational efficiency of the company. RBV Theory views company resources as a key factor in determining competitive advantage and company performance. Companies that have good resources such as advanced technology and skilled workforce tend to have high total asset turnover. This allows the company to generate greater revenues, thereby increasing ROA.

The results of a study conducted by Alarussi & Alhaderi (2018) on 120 companies listed on Bursa Malaysia in 2012 to 2014 found that the total asset turnover ratio has a positive and significant relationship to profitability. Another study conducted by Munawar (2019) on manufacturing companies listed on the IDX in 2012 to 2017 found that TATO has a significant influence on company profitability.

H2: TATTOO has a positive effect on ROA

The Effect of R&D Intensity on ROA

According to Resource Based View Theory, competitive advantage will be created if the company can manage its resources effectively and efficiently. R&D intensity is a concept that describes an organization's efforts to create a better product from the company's resources. The cost of research and development is exceeded by the advantages it provides in terms of internal innovation capabilities and increased efficiency.

Several studies have been conducted to study the impact of R&D investment on company performance. Research conducted by Beld (2014) found that R&D investment has a more positive effect on company performance in manufacturing companies compared to non-manufacturing companies. Meanwhile, another study conducted by Ibhagui (2019) stated that R&D investment has different impacts on company performance, where large companies may get greater benefits on company performance compared to small companies. Another study conducted by Rahman & Howlader (2022) on Pharmaceutical companies listed on the DSE Bangladesh in 2015-2019 found that R&D intensity has a positive and significant effect on ROA.

H3: R&D investment has a positive effect on ROA

RESEARCH METHODOLOGY

Population

Population is a generalization area consisting of objects or subjects that have certain qualities and characteristics determined by researchers to be studied and then conclusions drawn (Haryono & Wardoyo, 2013) . In this study, the population is the Manufacturing companies listed on the IDX in 2018 - 2023.

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Sample

The research sampling was conducted using the purposive sampling method. The purposive sampling method was chosen because the objectives of this study can only be achieved if a sample of companies with the criteria in Table 1 is used.

Table 1. Sample Selection Criteria

No	Sample selection criteria	Amount
1.	Pharmaceutical Sector Companies Listed on IDX 2018-2023	9
2.	Manufacturing companies that experienced suspension or delisting during the research period, namely 2018-2023	(1)
	Number of Samples	8
	Number of Observations (6 Years x 7 Companies)	48

Research Variables

Classification of Variables

The variables used in this study consist of 4 (four) forms, namely: (1) Independent variables are variables whose values are not influenced/determined by other variables in the model. In this study, the dependent variables are current ratio, TATO, R&D intensity. (2) The dependent variable is a variable whose value is influenced/determined by other variables in the model, where in this study the endogenous variable is ROA.

Operational Research Variables

The variables used in this study consist of two groups, namely the independent group and the dependent group. The independent group consists of *the current ratio, TATO, and R&D intensity*, while the dependent group consists of ROA. The operational variables in this study are given in Table 2.

Table 2. Operational Research Variables

No	Variables	Indicator	Source
1.	Current Ratio (CR)	$\text{CR} = \frac{\text{Asset Lancar}}{\text{Utang Lancar}}$	(Alarussi & Alhaderi, 2018)
2.	Total Asset Turnover (TATO)	$TATO = \frac{Net\ Sales}{Total\ Asset}$	(Alarussi & Alhaderi, 2018)
3.	R&D intensity	$Intensitas\ R\&D = \frac{\text{R\&D expense}}{\text{Net sales}}$	(Usman et al., 2017) , (Ibhagui, 2019)
5.	Return on Assets (ROA)	$ROA = \frac{Net\ Income}{Total\ Asset}$	(Usman et al., 2017) , (Ibhagui, 2019) , (Ferdaous & Rahman, 2017)

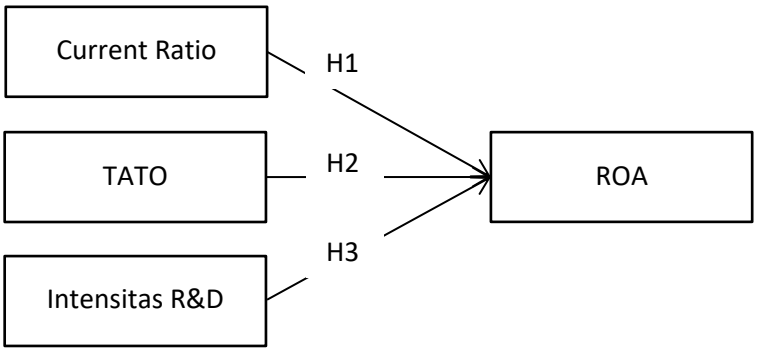

Figure 1. Research Model

Location and Time of Research

This research will be conducted in 2024 and the object of the research is pharmaceutical companies listed on IDX for the 2018-2023 period.

e-ISSN: 2685-5607

Data Collection Procedure
This type of research data uses quantitative data and research data sources are collected from the annual financial reports of manufacturing companies listed on the Indonesia Stock Exchange (IDX) in the period 2018 - 2023. Data sources are obtained from financial reports accessed at www.idx.co.id, and downloading financial reports published from the official websites of each company.

Data Analysis Techniques
According to Ghozali (2013), descriptive analysis is used to describe data from each research variable that is viewed is the amount of data, minimum value, maximum value, average value, and standard deviation. The purpose of descriptive analysis is to create a systematic, actual and accurate picture of the facts, nature and relationships between the phenomena studied.

Classical Assumption Test
The classical assumption test is an analysis conducted to assess whether there are classical assumption problems in an Ordinary Least Square (OLS) linear regression model. There are several assumptions that must be met first before using multiplinear regression as a tool to analyze the influence of the variables studied. These assumptions include:

Normality Test
According to Ghozali (2013), the normality test aims to test the regression equation model by examining the confounding variables or residual values. There are two ways to detect whether the residuals are normally distributed or not, namely by using graphical analysis and statistical analysis. Statistical analysis is carried out by looking at the kurtosis and skewness values of the residuals. If Zcount > Ztable, then the distribution is not normal. The next method is to use the Kolmogorov-Smirnov (KS) non-parametric statistical test. The residual distribution can be declared normal if the significance value is greater than 0.05 (sig> 0.05).

Multicollinearity Test
According to (Ghozali, 2013) , the purpose of the multicollinearity test is to test the correlation between independent variables in a regression equation model. A good regression model should not have a correlation between independent variables. Multicollinearity can be seen from the tolerance value and the variance inflation factor (VIF) value. A low tolerance value is the same as a high VIF value because VIF = 1/Tolerance. So, to detect the presence or absence of multicollinearity by looking at the tolerance and VIF values. If the tolerance is more than 0.1 and the VIF is less than 10, then there is no multicollinearity. However, if for example the program must be changed from SPSS to SmartPLS, the Tolerance value is not used and only the VIF value will be used.

Heteroscedasticity Test
According to (Ghozali, 2013) , the heteroscedasticity test aims to determine whether there is inequality in the variance of the residuals from one observation to another in the regression model. A good model is one that does not have heteroscedasticity. In this study, the method used to detect heteroscedasticity is to use the Glejser Test. The Glejser Test is carried out by testing the level of significance using the scatterplot graph method between the predicted value of the dependent variable (ZPRED) and its residual (SRESID). If the significance value is > 0.05, it indicates homoscedasticity or does not show symptoms of heteroscedasticity, but if the significance is <0.05, it indicates heteroscedasticity.

Autocorrelation Test
According to (Ghozali, 2013) , the autocorrelation test aims to test whether in the linear regression model there is a correlation between the disturbing error in period t with the disturbing error in period t-1 (previously). If autocorrelation occurs, it is called an autocorrelation problem. In this study, to determine whether or not there is autocorrelation, the Run Test is used by paying attention to the Asymp.Sig (2-tailed) section, where if the value is greater than 0.05 then there is no autocorrelation, conversely if the value is less than 0.05 then there is autocorrelation.

Model Feasibility Test
F Test
According to (Ghozali, 2013) , this test aims to assess the feasibility of the regression model that has been formed and show whether all independent variables have an influence on the dependent variable. This test is done by comparing the F table value and the calculated F. In determining the F table value, the significance level used is 0.05 with degrees of freedom (df) numerator = k-1 and df denominator = nk, where n is the number of respondents and k is the number of variables. The testing criteria used are as follows: (a) If F count > F table, then H0 is rejected and H1 is accepted. (b) If F count < F table, then H0 is accepted and H1 is rejected.

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Determination Coefficient Test (R^2)
According to (Ghozali, 2013) , the coefficient of determination is a value that describes the magnitude of the ability of the independent variable to explain its dependent variable. The value of the coefficient of determination is between zero and one. The greater the coefficient of determination, which is close to one, the better the independent variable is in explaining the dependent variable. Conversely, when the value of the coefficient of determination is small, it indicates that the ability of the independent variable is limited in explaining its dependent variable.

Multiple Linear Regression Analysis
Multiple linear regression analysis according to Priyatno (2016) is an analysis used to measure the magnitude of the influence of two or more independent or independent variables on one dependent or dependent variable. Multiple linear regression analysis is used to predict the condition (up and down) of the dependent variable, if two or more independent variables are factors that can increase and decrease their value. The general equation for multiple linear regression is as follows.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \quad (4)$$

Information:
Y = ROA
α = Constant
X_1 = Current Ratio
X_2 = Total Asset Turnover Ratio
X_3 = R&D intensity
$\beta_1, \beta_2, \beta 3$ = Regression coefficient of each variable

Hypothesis Test (T-Test)
According to (Ghozali, 2013) , this test aims to determine the significance of the influence between independent variables on dependent variables partially. This test is carried out by comparing the calculated t value with the t table of each variable, with the following criteria: (a) If t count > t table, then H0 is rejected and H1 is accepted, meaning the independent variable has an influence on the dependent variable (with a significance level of 5%). (b) If t count < t table, then H0 is accepted and H1 is rejected, meaning that the independent variable has no influence on the dependent variable (with a significance level of 5%).

RESULTS AND DISCUSSION

Descriptive Analysis
In this study, there are 4 variables studied and analyzed, namely Current ratio (X1), Total Assets Turnover (X2), R&D Intensity (X3), and Return on Asset (Y). Descriptive analysis of the variables can be seen in Table 3.

Table 3. Descriptive Analysis

	CR	TATO	RD	ROA
AVERAGE	2,631	0.940	0.004	0.081
MIN	0.198	0.462	-	- 0.949
MAX	5,744	1,442	0.025	0.921
STD DEVIATION	1.403	0.249	0.007	0.218

Source: Processed Data, 2024

Normality Test
Based on the results of the normality test using Kolmogorov Smirnov in Table 4 below, it can be seen that the test statistic value is 0.247, while the Asymp sig value is smaller than the alpha value, which is 0.000 <0.05. These results indicate that the research model has problems with normality, so the Smart PLS application is used as a solution to overcome this classical assumption problem.

Table 4. Results of Data Normality Test (Kolmogorov Smirnov Test)

		Unstandardized Residual
N		48
Normal Parameters [a,b]	Mean	.0000000
	Std. Deviation	. 19428028
Most Extreme Differences	Absolute	.247
	Positive	.220
	Negative	-. 247
Test Statistics		.247
Asymp. Sig. (2-tailed)		.000 [c]

Source: Processed Data, 2024

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Multicollinearity Test
The variance inflation factor (VIF) is used to evaluate collinearity of the independent variables. Table 5 illustrates the results of the Variance Inflation Factors (VIF).

Table 5. VIF result

Variables	VIF
CR	1,431
TATTOO	1,500
RD Intensity	1.275

Source: Processed Data, 2024

The cut off for VIF according to (Hair et al., 2019) is close to 3 or lower. The result gave values less than 3 for all variables, this indicates that there are no collinearity issues with the variables.

Adjusted R^2
The result of the adjusted R^2 for the experiment is 0.154 or 15.4%, this indicates that the independent variables only explain 13.5% of the dependent variable. The remaining 84.6% is explained by other factors not covered in this research.

Table 6. Adjusted R^2

	R Square	R Square Adjusted
ROA	0.208	0.154

Source: Processed Data, 2024

Hypothesis Tests
Figure 2 illustrates the resulting coefficients and significance of the coefficients.

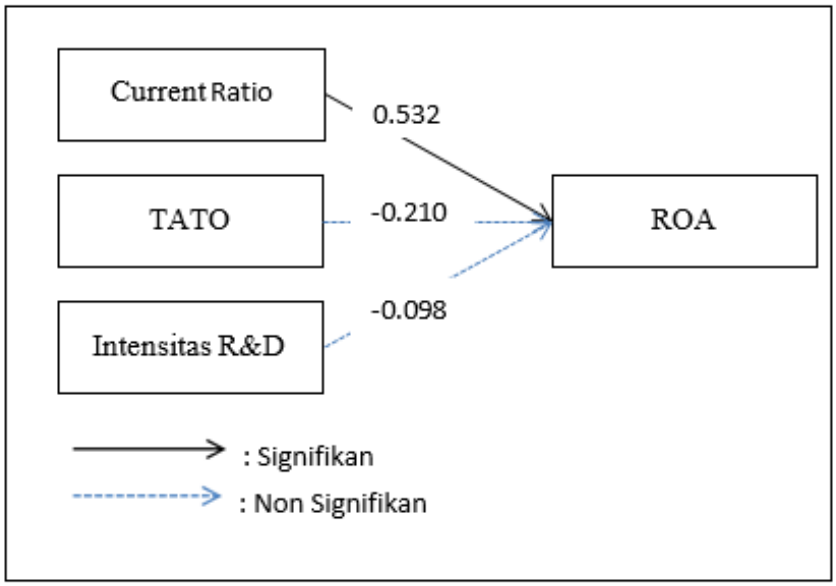

Figure 2. Results of Analysis

Multiple Linear Regression Equation
ROA=0.532 CR – 0.210 TATO – 0.098 R&D Intensity

Based on this equation, it can be explained:
The beta coefficient value on the current ratio (CR) variable is 0.532, meaning that the influence of the Current Ratio (CR) variable (X1) of one unit will result in an increase in Return on Assets (ROA) of 0.532 units, with other assumptions remaining constant.

The beta coefficient value on the total asset turnover ratio (TATO) variable is -0.210, meaning that the influence of the total asset turnover ratio (TATO) variable (X2) of one unit will result in a decrease in Return on Assets (ROA) of 0.210 units, with other assumptions remaining constant.

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The beta coefficient value on the R&D intensity variable is -0.098, meaning that the influence of the R&D intensity variable (X3) of one unit will result in a decrease in Return on Assets (ROA) of 0.098 units, with other assumptions remaining constant.

Discussion

The Effect of Current Ratio (CR) on Return on Assets (ROA)

From the results of the study, it was found that the current ratio as a liquidity ratio has a positive and significant effect on ROA. This means that ROA is influenced by the level of company liquidity, the more liquid the company, the higher the ROA. The finding of a positive relationship between liquidity and profitability is consistent with the results found by Samo & Murad (2019) who studied textile industry data in Pakistan from 2006 to 2016.

The Influence of Total Asset Turnover Ratio (TATO) on Return on Asset (ROA)

The results of the study showed that TATO has a negative but insignificant relationship with profitability. This shows that companies in the pharmaceutical sector have not been able to manage their assets optimally. The high rate of asset turnover owned by companies in this sector has not been able to increase their sales. This shows that companies in the pharmaceutical sector have not been able to use their assets efficiently to generate profits, this can be caused by the low profits obtained by the company from the resources they have compared to the costs incurred. The results of this study agree with the research conducted by Angelina et al.(2020) on Food & Beverages companies listed on the Indonesia Stock Exchange in 2012-2017 which showed that TATO partially had a negative but insignificant effect on profitability.

The Effect of R&D Intensity on Return on Assets (ROA)

The results of this study indicate that R&D intensity has a negative and significant effect on ROA. Research and development carried out by the company will result in new discoveries or developments that will later be protected by copyright. Meanwhile, R&D activities require large funds and a long time or process. With the large amount of funds spent on R&D, it will increase the company's burden. The results of this study are in line with research conducted by Rahman & Howlader (2022) on the pharmaceutical industry in Bangladesh which states that research and development intensity has a negative and significant effect on company performance because the results felt by the company take time but the burden of research and development continues.

CONCLUSION

The study's initial aims were to determine the effects of current ratio, TATO, and R&D intensity on profitability in pharmaceutical sector companies listed on IDX for the 2018-2023 period. The results show current ratio has a positive and significant effect on profitability but both TATO and R&D intensity have a negative and non-significant effect on profitability. The results will help managers to zoom in on revenue growth and TATO to increase its profitability. Managers will need to think of new and innovative strategies to increase its sales and manage its assets, so that these assets can be used to ensure the continuous survival of the firm through the increase in sales.

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