

The Effect of Fixed Asset Turnover on Return on Assets in Food and Beverage Sub-sector Companies Listed on the Indonesia Stock Exchange (2021–2024)

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Abstract: This study examines the effect of Fixed Asset Turnover (FATO) on Return on Assets (ROA) among food and beverage sub-sector companies listed on the Indonesia Stock Exchange (IDX) during 2021–2024. The study is motivated by inconsistent empirical findings regarding the relationship between fixed asset efficiency and corporate profitability, particularly in the food and beverage industry. A quantitative associative research design was employed using secondary data obtained from annual financial reports published by the IDX and company websites. The sample was determined using purposive sampling, resulting in eight food and beverage companies with four years of observations, yielding 32 firm-year observations. Data were analyzed using descriptive statistics, classical assumption tests, simple linear regression, t-test, F-test, and the coefficient of determination (R^2) with SPSS. The results indicate that FATO has a positive but statistically insignificant effect on ROA. The regression coefficient of FATO was 0.001, with a t-value of 1.138 and a significance level of 0.264, exceeding the 0.05 threshold. Furthermore, the R^2 value of 0.041 indicates that FATO explains only 4.1% of the variation in ROA, while the remaining 95.9% is attributable to other factors outside the research model. These findings suggest that fixed asset utilization alone is insufficient to explain profitability in the food and beverage sub-sector. Companies should therefore strengthen broader operational efficiency, cost control, pricing strategies, and asset management to improve profitability.

Keywords: Fixed Asset Turnover; Profitability; Return on Assets; Food and Beverage Companies; Indonesia Stock Exchange

1. Introduction

The food and beverage industry is one of the important components of Indonesia's manufacturing sector and has demonstrated considerable resilience amid changes in economic conditions. The sector plays a strategic role in supporting economic activity through production, employment, investment, and domestic consumption. Previous evidence indicates that the food and beverage sector has experienced fluctuations in growth but has consistently maintained a relatively strong position within the national manufacturing structure. Pangestika et al. (2021) reported that the growth of Indonesia's food and beverage sector reached 9.23% in 2017 before declining to 7.91% in the following year. Despite this decline, the sector continued to grow above the national economic growth rate of 5.17%. This condition demonstrates the importance of examining the factors that determine the financial performance of food and beverage companies, particularly their ability to generate profits from the assets employed in business operations.

Profitability is an important indicator of corporate financial performance because it reflects the effectiveness of management in transforming available resources into economic returns. One widely used measure of profitability is Return on Assets (ROA), which indicates a company's ability to generate net income from its total assets (Harahap et al., 2025). A higher ROA generally indicates that a company is more effective in utilizing its assets to generate earnings, whereas a lower ROA may indicate inefficient asset utilization or difficulties in converting assets into profitable operations. Consequently, understanding the determinants of ROA is important not only from the perspective of corporate financial management but also for investors and other stakeholders evaluating the efficiency and sustainability of company performance.

The importance of asset utilization can also be explained through agency theory. Jensen and Meckling (1976) argue that managers act as agents who are entrusted by shareholders, as principals, with the responsibility of managing corporate resources. Because managers control the use of company

assets, their decisions regarding asset allocation and utilization may influence corporate performance and the interests of shareholders. Inefficient management of productive assets may create agency problems because resources are not transformed optimally into economic benefits. In this context, the efficiency of fixed asset utilization becomes relevant because fixed assets represent substantial investments in many manufacturing companies and directly support production capacity.

Fixed Asset Turnover (FATO) is an activity ratio that measures the effectiveness of fixed assets in generating sales. It is commonly calculated as net sales divided by net fixed assets. A higher FATO indicates that a company generates relatively greater sales from the fixed assets employed in its operations, suggesting more intensive utilization of production capacity (Silalahi et al., 2022). The relationship between FATO and profitability is particularly relevant in the food and beverage industry because companies rely on production machinery, processing equipment, storage facilities, transportation infrastructure, and other fixed assets to support their operational activities. Efficient utilization of these assets may increase production capacity and sales while distributing fixed costs across a greater volume of output, potentially contributing to higher profitability.

Nevertheless, the theoretical expectation that greater fixed asset efficiency improves profitability has not been consistently supported by empirical evidence. Silalahi et al. (2022), for example, found that Fixed Asset Turnover had a significant effect on ROA among building construction companies listed on the Indonesia Stock Exchange. Their finding suggests that fixed asset utilization can become an important determinant of profitability in industries where productive assets are closely connected to revenue generation. However, different findings have been reported in other industries. Hamdan and Maufiroh (2022) found that Fixed Asset Turnover did not significantly affect profitability among pharmaceutical companies listed on the Indonesia Stock Exchange. Similarly, Nofatilofa and Efriyenti (2022) reported that fixed asset turnover did not significantly affect profitability among manufacturing companies, including firms in the food and beverage sector.

Evidence concerning broader asset efficiency also produces an interesting perspective. Pangestika et al. (2021) found that Total Asset Turnover had a positive and significant effect on ROA among food and beverage companies listed on the Indonesia Stock Exchange during 2014–2020. This finding indicates that overall asset efficiency may contribute to profitability, although the contribution of fixed assets specifically may differ. More recent evidence from Firastika et al. (2024) also demonstrates that activity ratios do not necessarily have consistent effects on profitability among food and beverage companies. Similarly, Wahyuni et al. (2024) found that asset-related turnover measures did not consistently determine profitability in food and beverage companies. These findings suggest that the relationship between asset utilization and profitability may depend on the type of asset, industry characteristics, operational structure, and prevailing economic conditions.

The inconsistency in previous findings creates an important empirical research gap. First, previous studies have produced contradictory conclusions regarding whether FATO significantly affects ROA. While significant effects have been identified in some industries, other studies have found no significant relationship, particularly in pharmaceutical and food and beverage-related manufacturing contexts. Second, much of the previous evidence concerning food and beverage companies has focused on earlier observation periods, such as 2014–2020 or 2016–2020. Therefore, evidence covering the 2021–2024 period remains important because this period represents a different economic context characterized by post-pandemic recovery, changes in consumer demand, supply-chain adjustments, and renewed investment in production capacity. These developments may alter the effectiveness with which fixed assets contribute to sales and profitability.

This study addresses the research gap by specifically examining the effect of Fixed Asset Turnover on Return on Assets in food and beverage sub-sector companies listed on the Indonesia Stock Exchange during 2021–2024. Unlike studies that examine broader asset turnover measures or focus on different

industrial sectors, this study isolates fixed asset utilization and evaluates its relationship with profitability within the food and beverage context during a more recent observation period. The study therefore contributes to the empirical literature by providing updated evidence on whether the efficiency of fixed asset utilization remains a significant determinant of profitability in a manufacturing subsector that relies heavily on productive assets.

Accordingly, this study aims to empirically examine whether Fixed Asset Turnover has a positive and significant effect on Return on Assets among food and beverage sub-sector companies listed on the Indonesia Stock Exchange during 2021–2024. The findings are expected to contribute to the discussion of asset efficiency and corporate profitability while providing practical implications for managers in evaluating whether improvements in fixed asset utilization can effectively translate into higher returns on total assets.

2. Literature Review

2.1 Agency Theory

Agency theory provides a theoretical foundation for understanding the relationship between managerial decisions regarding asset utilization and corporate profitability. Jensen and Meckling (1976) explain that a company involves a contractual relationship between principals, represented by shareholders, and agents, represented by managers who are entrusted with managing the company's resources. Because managers possess greater control over operational resources and decision-making, differences in interests and information between principals and agents may create agency problems. In the context of asset management, managers are expected to utilize corporate resources efficiently to generate economic benefits and increase shareholder value. Fixed assets represent long-term resources that require substantial investment and are directly associated with a company's operating capacity. Inefficient utilization of fixed assets may result in underutilized production capacity, higher fixed costs, and lower returns on invested resources. Conversely, effective utilization of fixed assets can support sales generation and operational efficiency, thereby potentially improving profitability. Thus, Fixed Asset Turnover (FATO) can be viewed as one indicator of managerial effectiveness in utilizing resources entrusted by shareholders. The agency perspective therefore suggests that managers who efficiently utilize fixed assets should be able to generate greater economic output from the resources controlled by the company. However, the realization of this relationship depends on the extent to which fixed assets contribute directly to revenue generation and profitability. This consideration is particularly relevant in the food and beverage industry, where companies generally depend on production machinery, processing equipment, production facilities, warehouses, and distribution infrastructure.

2.2 Fixed Asset Turnover

Fixed Asset Turnover (FATO) is an activity ratio used to measure the effectiveness of a company's fixed assets in generating sales. The ratio generally compares net sales with net fixed assets and indicates how efficiently fixed assets are utilized to support revenue generation (Silalahi et al., 2022). A higher FATO generally indicates that a company is able to generate greater sales from its investment in fixed assets, while a lower ratio may indicate underutilization of productive assets. FATO is particularly important for manufacturing companies because fixed assets constitute an essential component of the production process. In the food and beverage industry, production machinery, processing equipment, storage facilities, buildings, and transportation infrastructure support the transformation of raw materials into finished products. Efficient utilization of these assets can increase production capacity and enable companies to generate greater sales without proportionally increasing fixed asset investment. However, a high FATO does not necessarily guarantee higher profitability. An increase in sales generated from fixed assets may be accompanied by higher production costs,

distribution expenses, raw material costs, or marketing expenditures. In addition, companies with relatively old fixed assets may report a high FATO because the book value of their assets has declined through accumulated depreciation, rather than because their assets are necessarily more productive. Therefore, FATO should be interpreted as an indicator of asset utilization rather than as a direct measure of profitability.

2.3 Return on Assets

Return on Assets (ROA) is a profitability ratio that measures a company's ability to generate net income from the total assets employed in its operations. ROA provides an indication of how effectively management transforms the company's overall asset base into earnings (Harahap et al., 2025). The ratio is commonly calculated by dividing net income by total assets. A higher ROA generally indicates more effective asset management because the company is able to generate greater earnings from the resources it controls. Conversely, a lower ROA may indicate inefficient asset utilization, weak operating performance, high operating costs, or other financial constraints. ROA is therefore relevant for evaluating managerial performance because it links profitability with the resources invested in the company. In the context of this study, ROA serves as the dependent variable because fixed asset utilization is expected to influence overall corporate profitability. Nevertheless, ROA is affected by numerous factors beyond fixed asset utilization, including leverage, liquidity, total asset turnover, operating costs, company size, pricing policies, and market conditions. Consequently, the relationship between FATO and ROA should be examined empirically rather than assumed to be automatically positive.

2.4 Relationship Between Fixed Asset Turnover and Return on Assets

Theoretically, Fixed Asset Turnover can influence Return on Assets through the effectiveness of productive asset utilization. When fixed assets are used efficiently, companies may generate higher sales from a given level of fixed asset investment. Increased sales may subsequently contribute to higher operating and net income, provided that the additional revenue exceeds the associated costs. Because ROA measures net income relative to total assets, improvements in profitability resulting from efficient asset utilization may increase ROA. The expected positive relationship can also be explained through agency theory. Managers are responsible for ensuring that corporate assets generate economic benefits consistent with shareholder expectations. Efficient utilization of fixed assets can reduce idle capacity and improve the productivity of capital invested in production facilities. In this sense, higher FATO may reflect more effective managerial decisions regarding the deployment of productive resources.

Empirical evidence, however, remains inconsistent. Silalahi et al. (2022) found that Fixed Asset Turnover had a significant effect on ROA in building construction companies listed on the Indonesia Stock Exchange. Their findings indicate that fixed asset efficiency can become an important determinant of profitability in an industry where fixed assets are closely associated with revenue-generating activities. In contrast, Hamdan and Maufiroh (2022) found that Fixed Asset Turnover did not significantly affect profitability among pharmaceutical companies listed on the Indonesia Stock Exchange. Similarly, Nofatilofa and Efriyenti (2022) reported that fixed asset turnover did not significantly affect profitability among manufacturing companies. These findings indicate that greater utilization of fixed assets does not necessarily produce higher profitability. Evidence from the food and beverage industry also presents mixed results. Pangestika et al. (2021) found that Total Asset Turnover had a positive and significant effect on ROA among food and beverage companies listed on the Indonesia Stock Exchange during 2014–2020. However, Total Asset Turnover captures the utilization of all company assets and therefore cannot be interpreted as evidence that fixed asset utilization specifically determines profitability. Firastika et al. (2024) found that several activity ratios did not consistently

affect profitability among food and beverage companies. Wahyuni et al. (2024) likewise reported that turnover-related variables did not consistently determine profitability in the food and beverage sector. The inconsistent empirical evidence suggests that the relationship between FATO and ROA may be industry-specific. In capital-intensive industries, fixed assets may have a direct role in generating revenue, whereas in other industries profitability may be more strongly influenced by cost efficiency, working capital management, pricing strategies, market demand, financial structure, and other operational factors. Therefore, further examination of this relationship in the Indonesian food and beverage industry using recent observations is warranted.

2.5 Research Gap and Hypothesis Development

The literature indicates an unresolved empirical relationship between Fixed Asset Turnover and Return on Assets. Some studies demonstrate that greater fixed asset efficiency contributes significantly to profitability, while others report insignificant effects. This inconsistency indicates that the relationship may depend on industry characteristics, asset structures, operating processes, and economic conditions. The research gap is particularly evident in the food and beverage sub-sector. Although previous studies have examined profitability and asset turnover in this industry, limited attention has been given to the specific effect of Fixed Asset Turnover on ROA using observations covering the 2021–2024 period. This period is relevant because it encompasses substantial changes in business conditions following the COVID-19 pandemic, including changes in production capacity, consumer demand, supply-chain conditions, and corporate investment in productive assets. Based on agency theory, the conceptual relationship between the variables, and the findings of previous studies, higher FATO is theoretically expected to reflect more efficient utilization of fixed assets and consequently contribute to higher ROA. Therefore, the following hypothesis is formulated:

H1: Fixed Asset Turnover has a positive and significant effect on Return on Assets (ROA) among food and beverage sub-sector companies listed on the Indonesia Stock Exchange during 2021–2024.

3. Research Methods

3.1 Research Design

This study employed a quantitative research approach with an associative explanatory design to examine the relationship between Fixed Asset Turnover (FATO) and Return on Assets (ROA). The quantitative approach was selected because the study uses numerical financial data obtained from corporate annual reports and statistically tests the proposed relationship between the independent and dependent variables. The associative design enables the study to determine whether variations in fixed asset utilization are associated with variations in corporate profitability. The unit of analysis was the food and beverage sub-sector companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2024 observation period. The selection of this period was intended to provide recent empirical evidence concerning the relationship between fixed asset utilization and profitability during the post-pandemic economic recovery period.

3.2 Population and Sample

The population consisted of all companies classified in the food and beverage sub-sector and listed on the Indonesia Stock Exchange during the 2021–2024 period. The sample was selected using purposive sampling based on predetermined criteria relevant to the objectives of the study. The sampling criteria were: (1) companies were consistently listed on the Indonesia Stock Exchange throughout the 2021–2024 observation period; (2) companies published complete annual financial reports for each year of observation; and (3) companies provided sufficient financial information

required to calculate Fixed Asset Turnover and Return on Assets. Based on these criteria, eight companies were selected as the research sample. Since each company was observed for four consecutive years, the study generated 32 firm-year observations (8 companies × 4 years). The use of firm-year observations allows the study to capture variations in fixed asset utilization and profitability both across companies and over the observation period.

3.3 Data Sources and Data Collection

This study utilized secondary data in the form of quantitative financial information obtained from publicly available annual financial reports. The primary source was the official Indonesia Stock Exchange website, supplemented by the official websites of the respective sample companies when necessary. Data collection was conducted using documentation. The required information included net sales, net fixed assets, net income, and total assets for each company and each year from 2021 to 2024. The financial data were subsequently organized into a structured dataset and used to calculate the research variables. The use of publicly available financial reports ensures that the data are derived from documented corporate disclosures and are therefore suitable for quantitative analysis of financial performance.

3.4 Variable Measurement

The study consists of one independent variable, Fixed Asset Turnover (FATO), and one dependent variable, Return on Assets (ROA).

3.4.1 Fixed Asset Turnover

Fixed Asset Turnover represents the efficiency with which a company utilizes its fixed assets to generate sales. A higher FATO indicates that a relatively greater amount of sales is generated from the company's investment in fixed assets (Silalahi et al., 2022). FATO was calculated using the following formula:

$$\text{FATO} = \text{Net Sales} / \text{Net Fixed Assets}$$

The ratio was calculated for each company and each year during the 2021–2024 observation period.

3.4.2 Return on Assets

Return on Assets represents the company's ability to generate net income from the total assets employed in its operations. ROA is used as an indicator of corporate profitability because it links the earnings generated by the company with the total resources under management (Harahap et al., 2025). ROA was calculated using the following formula:

$$\text{ROA} = \text{Net Income} / \text{Total Assets} \times 100\%$$

The resulting ROA values represent the proportion of net income generated from the company's total assets.

3.5 Operationalization of Variables

Variable	Measurement	Formula	Scale
Fixed Asset Turnover (X)	Efficiency of fixed asset utilization in generating sales	$\text{Net Sales} / \text{Net Fixed Assets}$	Ratio
Return on Assets (Y)	Ability to generate net income from total assets	$\text{Net Income} / \text{Total Assets} \times 100\%$	Ratio

The use of ratio-scale financial measures enables direct quantitative comparison across companies and observation years.

3.6 Data Analysis

The data were analyzed using Statistical Package for the Social Sciences (SPSS). The analysis consisted of descriptive statistical analysis, classical assumption testing, simple linear regression analysis, hypothesis testing, and the coefficient of determination.

3.6.1 Descriptive Statistics

Descriptive statistics were employed to summarize the characteristics of the research variables. The analysis presents the minimum, maximum, mean, and standard deviation values of FATO and ROA. These statistics provide an initial overview of the distribution and variability of fixed asset utilization and profitability across the 32 firm-year observations.

3.6.2 Classical Assumption Tests

Before estimating the regression model, classical assumption tests were conducted to evaluate whether the data met the assumptions required for linear regression analysis. The normality of the regression residuals was assessed using the One-Sample Kolmogorov-Smirnov test. A significance value greater than 0.05 was interpreted as indicating that the residuals did not significantly deviate from a normal distribution. Heteroscedasticity was assessed using a scatterplot of standardized predicted values (ZPRED) and standardized residuals (SRESID). The absence of a systematic pattern in the distribution of residuals was interpreted as evidence that the regression model did not exhibit an apparent heteroscedasticity problem. Autocorrelation was assessed using the Durbin-Watson statistic. This test was employed to identify potential correlation among regression residuals across observations. The resulting statistic was interpreted by comparing it with the relevant Durbin-Watson reference values. Because the observations consist of repeated yearly measurements for the same companies, the potential dependence among observations was considered when interpreting the regression results.

3.7 Simple Linear Regression Model

To examine the effect of Fixed Asset Turnover on Return on Assets, the study employed a simple linear regression model. The regression specification is expressed as follows:

$$ROA = \alpha + \beta FATO + \varepsilon$$

where:

- ROA = Return on Assets;
- α = regression constant;
- β = regression coefficient of Fixed Asset Turnover;
- FATO = Fixed Asset Turnover; and
- ε = error term.

The coefficient β indicates the direction and magnitude of the estimated relationship between FATO and ROA. A positive coefficient indicates that higher FATO is associated with higher ROA, whereas a negative coefficient indicates an inverse relationship.

3.8 Hypothesis Testing

The proposed hypothesis was tested at a 5% significance level ($\alpha = 0.05$). The t-test was used to determine whether Fixed Asset Turnover had a statistically significant partial effect on Return on Assets. The hypothesis was supported if the significance value was less than 0.05 and the estimated coefficient was positive, consistent with the directional hypothesis.

The hypothesis testing criteria were defined as follows:

- If $p < 0.05$, H_1 is supported, indicating a statistically significant effect of FATO on ROA.

- If $p \geq 0.05$, H_1 is not supported, indicating that the effect of FATO on ROA is not statistically significant.

The F-test was also examined to evaluate the statistical significance of the regression model as a whole. Although the model contains only one explanatory variable, the F-test provides an overall assessment of whether the regression specification explains a statistically significant proportion of variation in ROA.

3.9 Coefficient of Determination

The coefficient of determination (R^2) was used to assess the proportion of variation in ROA that can be statistically explained by FATO. The R^2 value ranges from 0 to 1. A higher value indicates greater explanatory power of the independent variable, while a lower value indicates that a substantial proportion of variation in ROA is associated with factors outside the model. In this study, R^2 is particularly important because profitability is influenced by multiple financial and operational factors. Therefore, a low R^2 does not imply that FATO is irrelevant but indicates that FATO alone provides limited explanatory power for differences in ROA within the observed sample.

3.10 Statistical Decision Rule

The final decision regarding the research hypothesis was based primarily on the estimated regression coefficient and its significance level. A positive coefficient accompanied by a significance value below 0.05 would support the proposed hypothesis that FATO has a positive and significant effect on ROA. Conversely, a positive coefficient with a significance value above 0.05 would indicate that the direction of the estimated relationship is positive but statistically insufficient to establish a significant effect. All statistical tests were conducted using a 5% significance threshold.

4. Results and Discussion

4.1 Descriptive Statistical Analysis

Descriptive statistics are presented to provide an overview of the characteristics of the data underlying this study. The descriptive statistical results for the Fixed Asset Turnover (FATO) and Return on Assets (ROA) variables, based on 32 observations during the 2021–2024 period, are presented in Table 2.

Table 2. Descriptive Statistical Results

	Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
FATO	32	.32	31.44	6.4934	7.65460
ROA	32	.00	.19	.1069	.04987
Valid N (listwise)	32				

Referring to Table 2, FATO ranges from a minimum value of 0.32 to a maximum value of 31.44, with a mean of 6.4934 and a standard deviation of 7.65460. The standard deviation being greater than the mean indicates substantial variation in the effectiveness of fixed asset utilization among the sampled companies. Meanwhile, ROA ranges from 0.00 to 0.19, with a mean of 0.1069 and a standard deviation of 0.04987. The standard deviation being lower than the mean indicates that ROA is relatively homogeneous across the observations. The average ROA of 10.69% suggests that, on average, food and beverage sub-sector companies were able to generate an adequate level of net income from their total assets throughout the study period.

4.2 Classical Assumption Tests

4.2.1 Normality Test

The normality of the data was examined using the Kolmogorov–Smirnov (K–S) test. The data are considered normally distributed when the Asymp. Sig. (2-tailed) value exceeds 0.05. The test results show a test statistic of 0.129 and an Asymp. Sig. (2-tailed) value of 0.189, as presented in Table 3. Therefore, the residuals of the regression model can be considered normally distributed, allowing the regression analysis to proceed.

Table 3. Normality Test Results (One-Sample Kolmogorov–Smirnov Test)

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		32
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.04882467
Most Extreme Differences	Absolute	.129
	Positive	.129
	Negative	-.097
Test Statistic		.129
Asymp. Sig. (2-tailed)		.189 ^c
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

4.2.2 Heteroscedasticity Test

The heteroscedasticity test was conducted by examining the scatterplot between the predicted values of the dependent variable (ZPRED) and the residuals (SRESID). The residual points in the scatterplot appear to be randomly distributed, with no discernible pattern either above or below zero on the Y-axis. This indicates that the regression model does not exhibit heteroscedasticity.

4.2.3 Autocorrelation Test

Autocorrelation was examined using the Durbin–Watson test, which aims to determine whether there is a correlation between the error terms in period t and those in period $t-1$. The results are presented in Table 4.

Table 4. Autocorrelation Test Results (Durbin–Watson)

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.203 ^a	.041	.009	.04963	.955

a. Predictors: (Constant), FATO

b. Dependent Variable: ROA

The Durbin–Watson statistic is 0.955. When compared with the Durbin–Watson critical values for $n = 32$ and $k = 1$ at the 5% significance level, the lower bound (dL) is 1.373 and the upper bound (dU) is 1.496. Since the DW value of 0.955 is below dL, the result indicates an indication of positive autocorrelation. However, given the short observation period and the characteristics of the data used in this study, this indication may be associated with the temporal structure of the observations and does

not necessarily invalidate the regression analysis. Therefore, the analysis was continued while acknowledging this limitation in the interpretation of the findings.

4.3 Simple Linear Regression Analysis

Based on Table 5, the correlation coefficient (R) is 0.203, indicating a weak relationship between FATO and ROA. The R Square value of 0.041 (4.1%) indicates that FATO explains only 4.1% of the variation in ROA, while the remaining 95.9% is explained by other factors outside the model, such as total asset turnover, leverage, liquidity, firm size, and various macroeconomic factors. The lower Adjusted R Square value of 0.009 further confirms that the contribution of FATO to ROA is relatively limited after adjustment for the model's degrees of freedom.

Table 5. Model Summary

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.003	1	.003	1.294	.264 ^b
	Residual	.074	30	.002		
	Total	.077	31			

a. Dependent Variable: ROA

b. Predictors: (Constant), FATO

4.4 F-Test and Regression Equation

Table 6. F-Test Results

		Coefficients ^a					
		Unstandardized Coefficients		Standardized Coefficients			
Model		B	Std. Error	Beta	t	Sig.	Collinearity Statistics
1	(Constant)	.098	.012		8.484	.000	
	FATO	.001	.001	.203	1.138	.264	Tolerance VIF
							1.000 1.000

a. Dependent Variable: ROA

As shown in Table 6, the F-test produces an F-statistic of 1.294 with a significance value of 0.264, which is greater than 0.05. This indicates that the regression model does not have a statistically significant effect on ROA, consistent with the relatively low R² value. The resulting simple linear regression equation is:

$$\text{ROA} = 0.098 + 0.001 \text{ FATO} + e$$

The constant of 0.098 indicates that when FATO is zero, the predicted ROA is 9.8%. Meanwhile, the FATO coefficient of 0.001 indicates that a one-unit increase in FATO is associated with an increase of 0.001 in ROA, assuming other factors remain constant. Although the direction of the relationship is positive, the magnitude of the coefficient is very small.

4.5 t-Test and Hypothesis Testing

With $n = 32$ and degrees of freedom (df) = 30 at a 5% significance level using a two-tailed test, the critical t -value is 2.042. Since the calculated t -value for FATO is 1.138, which is lower than the critical t -value of 2.042, and the significance value of 0.264 exceeds 0.05, Fixed Asset Turnover does not have a statistically significant effect on Return on Assets among food and beverage sub-sector companies listed on the Indonesia Stock Exchange during the 2021–2024 period. Therefore, hypothesis H1 is rejected.

4.6 Discussion

4.6.1 The Effect of Fixed Asset Turnover (FATO) on Return on Assets (ROA)

The findings indicate that Fixed Asset Turnover does not have a significant effect on Return on Assets among food and beverage sub-sector companies listed on the Indonesia Stock Exchange during the 2021–2024 period, as reflected by a calculated t -value of 1.138 and a significance value of 0.264. Although the regression coefficient is positive at 0.001, the strength of the relationship is insufficient to establish a statistically significant effect. In other words, an increase in the efficiency of fixed asset utilization does not necessarily translate into a corresponding increase in corporate profitability. This finding is consistent with the results of Hamdan and Maufiroh (2022), who found that Fixed Asset Turnover did not have a significant effect on Return on Assets among pharmaceutical companies. It is also consistent with the findings of Nofatilofa and Efriyenti (2022), who reported a similar result for manufacturing companies in the food and beverage sub-sector. The consistency of these findings suggests that the effectiveness of fixed asset utilization may not be a primary determinant of profitability in these industries.

Additional support is provided by Firastika et al. (2024), who examined the effects of working capital turnover, receivable turnover, and inventory turnover on the profitability of food and beverage companies during the 2018–2022 period. Their findings indicate that activity ratios associated with asset efficiency do not necessarily have a significant partial effect on profitability. Similarly, Wahyuni et al. (2024), who examined food and beverage companies, found that asset turnover ratios did not consistently affect profitability in this sector. These findings further suggest that the food and beverage industry may be less sensitive to asset activity ratios than other industries. The insignificant effect of FATO on ROA identified in this study may be explained by several factors. First, profitability in the food and beverage sub-sector depends not only on the efficiency of fixed asset utilization but also on production cost efficiency, pricing policies, supply chain management, and market demand conditions. Consequently, even when fixed assets are utilized efficiently, profitability may not increase if other operating costs remain high or market conditions constrain revenue growth.

Second, the 2021–2024 observation period coincides with the post-COVID-19 economic recovery period. During this period, many companies may have expanded their production capacity through investments in new fixed assets that had not yet reached optimal utilization levels. Such investments could reduce FATO because the increase in fixed assets may occur before a proportional increase in sales is realized. Nevertheless, ROA may remain relatively stable because companies can maintain profitability through cost-control strategies, pricing adjustments, and improvements in other aspects of operational management. Third, the relatively high standard deviation of FATO (7.65460), which exceeds its mean value (6.4934), reflects substantial differences in fixed asset utilization across the sampled companies. Such variation may weaken the statistical relationship between FATO and ROA at the aggregate level. Companies with different production scales, asset structures, product portfolios, and operating strategies may generate substantially different levels of sales from similar amounts of fixed assets.

The findings of this study contrast with those of Silalahi et al. (2022), who found that FATO had a significant effect on ROA among building construction companies. This difference can be understood

in terms of industry-specific characteristics. In the construction sector, fixed assets such as heavy equipment and machinery are directly associated with the company's capacity to generate revenue. Therefore, the efficiency of fixed asset utilization may have a stronger relationship with profitability. In contrast, food and beverage companies rely not only on fixed assets but also on raw material management, inventory efficiency, distribution networks, pricing strategies, branding, and consumer demand.

This finding reinforces the view that the effect of FATO on profitability is sector-specific and context-dependent. From a Resource-Based View perspective, the strategic value of a resource depends on the extent to which that resource contributes to the value-creation process within a particular industry. Fixed assets may therefore constitute a critical source of competitive advantage in capital-intensive industries, while their contribution to profitability may be relatively limited in industries where other resources and operational capabilities play a more dominant role. Overall, the findings demonstrate that an increase in Fixed Asset Turnover does not necessarily lead to a significant improvement in Return on Assets among food and beverage sub-sector companies listed on the Indonesia Stock Exchange during 2021–2024. Therefore, companies should pay attention to other factors associated with profitability enhancement, including operational efficiency, cost control, product innovation, pricing strategies, supply chain management, and marketing effectiveness. A comprehensive approach to asset and operational management is likely to be more effective in improving corporate profitability than focusing solely on the utilization of fixed assets.

5. Conclusion

5.1 Conclusion

This study examined the effect of Fixed Asset Turnover (FATO) on Return on Assets (ROA) in food and beverage sub-sector companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2024 period. Based on the analysis of 32 observations from eight companies, the findings indicate that Fixed Asset Turnover does not have a statistically significant effect on Return on Assets. The regression coefficient is positive at 0.001, but the t-value of 1.138 is lower than the critical value of 2.042, with a significance level of 0.264, which exceeds the 0.05 threshold. Therefore, the proposed hypothesis that FATO has a positive and significant effect on ROA is rejected. The coefficient of determination further demonstrates that FATO explains only 4.1% of the variation in ROA, while the remaining 95.9% is attributable to other factors outside the research model. These findings indicate that the efficiency of fixed asset utilization alone is insufficient to explain profitability among food and beverage companies. Profitability is likely influenced by a broader combination of operational efficiency, cost management, liquidity, leverage, asset composition, pricing strategies, market demand, and other firm-specific and macroeconomic factors. The findings also reinforce the argument that the relationship between asset utilization and profitability is contextual and may differ according to industry characteristics. Although fixed assets play an important role in production activities, higher fixed asset turnover does not necessarily translate into higher profitability. Consequently, companies in the food and beverage sub-sector need to evaluate asset efficiency together with other dimensions of financial and operational performance.

5.2 Theoretical Implications

The findings provide theoretical implications for understanding the relationship between asset utilization and corporate profitability. From the perspective of Agency Theory, efficient management of corporate resources is expected to support the achievement of shareholders' interests (Jensen & Meckling, 1976). However, the insignificant effect of FATO on ROA suggests that efficient utilization of

fixed assets does not automatically result in improved profitability. This finding indicates that managerial efficiency should be assessed more comprehensively rather than through a single asset-utilization indicator. The results also provide support for a contextual interpretation of the Resource-Based View. Fixed assets may constitute important organizational resources, but their contribution to value creation depends on how effectively they are integrated with other resources and capabilities. In the food and beverage industry, machinery, production facilities, and distribution infrastructure may generate sales capacity, but profitability also depends on input costs, product pricing, inventory management, supply-chain efficiency, innovation, and market conditions. Accordingly, this study contributes to the existing literature by demonstrating that the relationship between fixed asset efficiency and profitability is not necessarily universal across industries. The insignificant relationship found in this study provides additional empirical evidence for the research gap concerning the inconsistent relationship between FATO and ROA identified in previous studies.

5.3 Practical Implications

The findings have several implications for managers of food and beverage companies. First, management should not rely solely on increasing Fixed Asset Turnover as a strategy for improving profitability. Although improving the utilization of production facilities and equipment remains important, such efforts should be accompanied by effective cost control, production planning, inventory management, pricing strategies, and market development. Second, companies should ensure that investments in fixed assets are aligned with actual production capacity and market demand. Excessive investment in fixed assets without adequate utilization may increase depreciation and maintenance expenses without generating proportional increases in revenue or profitability. Therefore, investment decisions should be based on careful assessments of expected demand, production efficiency, and long-term returns. Third, investors and financial analysts should interpret FATO together with other financial indicators when assessing corporate profitability. The relatively low explanatory power of FATO in this study indicates that ROA should not be evaluated based on fixed asset efficiency alone. Other indicators, such as Total Asset Turnover, leverage, liquidity, operating efficiency, and firm size, may provide a more comprehensive assessment of financial performance.

5.4 Research Limitations

This study has several limitations that should be considered when interpreting the findings. First, the research examined only eight food and beverage companies, resulting in 32 observations over the 2021–2024 period. The relatively small sample may limit the generalizability of the findings to the broader population of Indonesian manufacturing companies. Second, the study employed only one independent variable, namely Fixed Asset Turnover, to explain Return on Assets. The coefficient of determination of 4.1% indicates that a substantial proportion of variations in ROA is explained by factors not included in the research model. Third, the analysis was conducted using a simple linear regression model. Although this approach is appropriate for examining the direct relationship between FATO and ROA, it does not fully capture the potential influence of multiple financial, operational, firm-specific, and macroeconomic factors that may simultaneously affect profitability. Finally, the 2021–2024 observation period represents a particular economic context characterized by post-pandemic recovery and changes in business and market conditions. Therefore, the findings may reflect circumstances specific to this period and should be interpreted cautiously when applied to other economic periods.

5.5 Future Research

Future studies are encouraged to extend this research in several directions. First, researchers should expand the sample size by including more companies and, where appropriate, other

manufacturing sub-sectors to improve the generalizability of the findings. Extending the observation period beyond 2024 may also provide a more comprehensive understanding of the long-term relationship between asset utilization and profitability. Second, future research should incorporate additional explanatory variables, such as Total Asset Turnover, Working Capital Turnover, Inventory Turnover, Receivable Turnover, Debt to Equity Ratio, Current Ratio, firm size, and sales growth. Including these variables may provide a more comprehensive explanation of variations in ROA. Third, future studies could employ panel-data regression techniques to account for differences between companies and changes over time. Such approaches may provide stronger empirical evidence than simple linear regression when dealing with company-year observations. Finally, future research could examine moderating or mediating variables, such as operational efficiency, firm size, financial leverage, or market conditions, to determine whether the relationship between Fixed Asset Turnover and profitability changes under different organizational and economic circumstances. Such extensions would contribute to a deeper understanding of when and under what conditions fixed asset efficiency can translate into improved corporate profitability.

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