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THE EFFECT OF CAPITAL STRUCTURE AND COMPANY SIZE ON PROFITABILITY WITH OPERATIONAL EFFICIENCY AS AN INTERVENING VARIABLE: CASE STUDY OF PROPERTY AND REAL ESTATE COMPANIES LISTED ON THE IDX 2020-2023

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Abstract

By treating operational efficiency as an intermediary lens, this study examines profitability as a function of capital structure and firm size. This research focuses on property and real estate companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2023 period. Capital structure is measured using the Debt-to-Equity Ratio (DER); company size is measured by the natural logarithm of total assets; operational efficiency is proxied by the Operating Expenses to Operating Income (BOPO) ratio; and profitability is measured by Return on Assets (ROA). The research method used is a quantitative approach with path analysis. A purposive sampling technique yielded 78 companies as the research sample, yielding 234 observations during the observation period. Data processing was performed using software version 25. Theoretically, this study contributes to the development of the corporate finance literature by broadening the understanding of the mediating role of operational efficiency in the relationship among capital structure, firm size, and profitability in the property and real estate sector in Indonesia. The study's results indicate that firm size has a positive effect on operational efficiency, whereas capital structure has a negative effect. Firm size also has a positive effect on profitability, whereas capital structure has a negative effect. However, operational efficiency has not been shown to mediate the relationship between capital structure and profitability or between firm size and profitability.

Keywords: Capital Structure, Company Size, Operational Efficiency, Profitability

INTRODUCTION

Generally, a company is founded to maximize revenue. It must also maintain profitability through its performance to ensure its long-term survival and encourage its continued development. This rapid growth is accompanied by intense competition among companies, and managers need to implement business strategies carefully and precisely to increase company value and compete in a highly competitive market.

The profitability phenomenon anchored in ROA arises when a notable shift in a company's

ROA occurs, encompassing both upward and downward movements, potentially stemming from factors within the company and the broader environment. The subsequent table illustrates the problematic occurrences highlighted by researchers focusing on property and real estate sector businesses that are publicly traded on the Indonesian Stock Exchange:

Table 1. Return on Assets (ROA) in the Property and Real Estate Sector

No.	Company Code	Return on Aset (ROA)		
		2021	**2022**	**2023**
1.	AMAN	3,35%	3,57%	5,25%
2.	APLN	-1,63%	7,92%	4,11%
3.	ASPI	-0,66%	-3,19%	-2,58%
4.	ASRI	0,65%	4,92%	2,86%
5.	ATAP	5,97%	1,86%	0,14%
6.	BAPA	-1,47%	-2,74%	-2,11%
7.	BAPI	-0,15%	-0,01%	-0,19%
8.	CITY	0,13%	2,27%	0,19%
9.	DADA	0,80%	0,13%	0,19%
10.	ELTY	-2,46%	-9,12%	-12,8%
11.	GPRA	2,81%	4,28%	4,93%
12.	INPP	0,46%	0,75%	1,97%

Source: Processed Data IDX 2025

Trimitra Prawara Goldland Tbk (ATAP) experienced a decline in Return on Assets from 2021 to 2023 due to intense competition in the property and real estate sector. Meanwhile, Perdana Gapuraprima Tbk (GPRA) and Indonesian Paradise Property Tbk (INPP) experienced increases in each period from 2021 to 2023. Alam Sutera Reality Tbk (ASRI) and Diamond Citra Propertindo Tbk (DADA) experienced fluctuations in Return on Assets (ROA) from 2021 to 2023 due to internal factors. Therefore, the above problems likely occurred due to reduced revenue caused by weak company performance, coupled with intense competition in property and real estate industry, and increasing costs over time, which leads to a decrease in ROA.

Drawing upon the empirical insights of Agustina & Avriyanti (2024), who investigated the interplay between capital structure and financial outcomes within telecommunications firms listed on the Indonesia Stock Exchange (IDX) during 2015–2020, a positive correlation was observed, wherein elevated capital structure coincided with enhanced profitability. In contrast, Amin et al (2023) in their exploration of banking institutions, posited that capital structure bears no significant influence on profitability when examined alongside firm size and liquidity. and Hermanto & Dewinta (2023) similarly concluded that firm size exerts no discernible impact on profitability, a stance echoed by Sugianto & Meirisa (2023), who noted only a marginal effect. Conversely, the findings of Tirtanata & Yanti (2021) lend credence to (Ginting, 2019)assertion that firm size does indeed shape profitability outcomes. The divergence in these scholarly positions underscores the

presence of an empirical gap concerning the nexus between firm size and profitability.

This analysis is based on a study by Lorenza et al (2020) that looked at how capital structure and business size affected the profitability of automakers listed on the Indonesia Stock Exchange (IDX). To improve the analysis and broaden the research scope, the researchers recommend extending the observation period, examining other business sectors listed on the IDX, and including additional factors. By including a mediating variable linking the predictor and outcome variables, this study differs significantly from earlier studies. Previous research that did not include mediating or moderating variables did not find this feature. Additionally, the research object and observation duration are where the differences are found. This study, which covers the period 2020–2023, focuses on property and real estate firms listed on the Indonesia Stock Exchange (IDX), whereas earlier studies focused on automobile companies listed on the IDX.

THEORETICAL STUDY

Signal Theory

Signal theory involves the steps taken by a firm's leaders to provide investors with insight into their views on the company's future performance. The idea behind this theory is that every action carries information because of the imbalance in what different parties know. As stated by Ghozali (2018)Signal theory details how senders use strategies to influence how receivers act. These signals can take many forms, from those that are easy to see to those that require a more detailed review to understand.

Supandi et al (2023) clarifies that signalling theory suggests a company's strong financial report serves as a positive indicator of its overall health. Managers have a duty to keep company owners informed about the company's status as part of their management role. Signalling theory explains that companies share information to signal their quality to outside groups such as investors and lenders. This disparity drives companies to share data, which helps reduce uncertainty among outside parties about the company and its future. In this situation, signalling refers to how businesses share information to reduce uncertainty and convey their financial soundness and potential profits.

Profitability

A company's ability to generate earnings is reflected in its profitability. Investors use profitability ratios to measure how well a company is performing, helping them decide where to put their money. As a comparative metric, this ratio enables the evaluation of key financial components, primarily those reported in the balance sheet and income statement. Longitudinal analysis through successive periods allows for tracking the trajectory of organizational growth. Yusuf et al (2022) define profitability as the capacity of each business actor to generate profits and the measurement of profit realization (Setiowati et al (2023). Therefore, the profitability ratio is very helpful for

investors in assessing whether a company is worth investing in. According to Sutanto (2021), investors use a company's financial performance, in addition to its stock price, to determine whether an investment is worthwhile. One method for measuring company performance is through profitability analysis.

According to Amin et al (2023) explained that this ratio is intended to help determine whether a company is successful or not. Profitability is driven not only by revenue but also by how effectively operational management manages working capital. High profits can indicate that the company has strong technology and can easily attract creditors and investors, suggesting a bright future. In research by Lorenza et al (2020)A business's ability to generate profits over time by effectively using sales, assets, and capital is known as profitability. A high level of profitability is an important indicator of a business's operational effectiveness.

Capital Structure

A well-functioning capital structure is essential for businesses in the manufacturing industry. By combining debt and equity, a company's capital structure can finance asset expansion. It also involves striking a balance between money from shareholders, known as equity, and borrowed funds, known as debt. A good capital structure is very important because it affects factors such as risk, borrowing costs, and the potential profit you might earn on your investments. When a company manages its capital structure effectively, it can become more valuable and ensure it stays in business without interruption. Capital structure, which relates to the risks and rewards perceived by shareholders, is a crucial factor to consider when investing. Investors require information from a company's financial statements to assess its capital structure. The balance between foreign capital and equity is referred to as capital structure. Companies with high profitability show increasing revenues (Anggita et al., 2024).

Effective capital structure management is a sign of a well-managed business. A company's financial condition, and ultimately, its profitability, can be directly influenced by the quality of this capital structure. This financial structure consists of a combination of debt and equity funds (Bastian et al., 2024). The financial composition of a business, illustrating the mix of its funding sources, is known as its capital structure, which includes long-term debt and the company's own equity (shareholders' funds). Supandi et al (2023) explain that a company's reliance on debt to support its asset base is encoded in its capital structure. By decoding this financial architecture, investors may navigate the tension between lucrative outcomes and the spectre of risk. (Mudjijah et al., 2019)stated that the balance between debt and equity indicates a capital structure that is a permanent expenditure.

Company Size

The evaluation of a business's size might be seen as an effort to ascertain its overall scope. For investors, a company's scale is critically important because it correlates with investment risk. Obtaining funds from multiple avenues is more straightforward for larger companies. Thus, there is greater motivation for large companies to strive for profitability, which in turn makes investors more discerning in their analysis.

Natalya & Maimunah (2022) define company size as a metric or value that divides businesses into large and small categories based on factors such as stock value, logarithmic size, total assets, and so on. Generally, there are only three business sizes: large, medium, and small. Yusmaniarti et al (2023) Define company size as an organization's total assets. A company's management will have more freedom to use its assets for operational purposes if it has significant assets. Agustina & Avriyanti (2024) stated that company size describes how large or small its assets are.

According to Bita et al (2021)A substantial company size indicates expansion, which investors view positively. Lorenza et al (2020) state that larger companies can access a wider range of funding options from various sources, simplifying the process of obtaining loans from lenders because of their greater capacity to grow or survive in their sector. Meanwhile, according to Amin et al (2023) explain that a company's assets determine its size. A company's profits can be influenced by the amount of assets it has. Securing capital tends to be easier for companies with substantial assets. By showcasing its assets, a company can often persuade investors to invest in it.

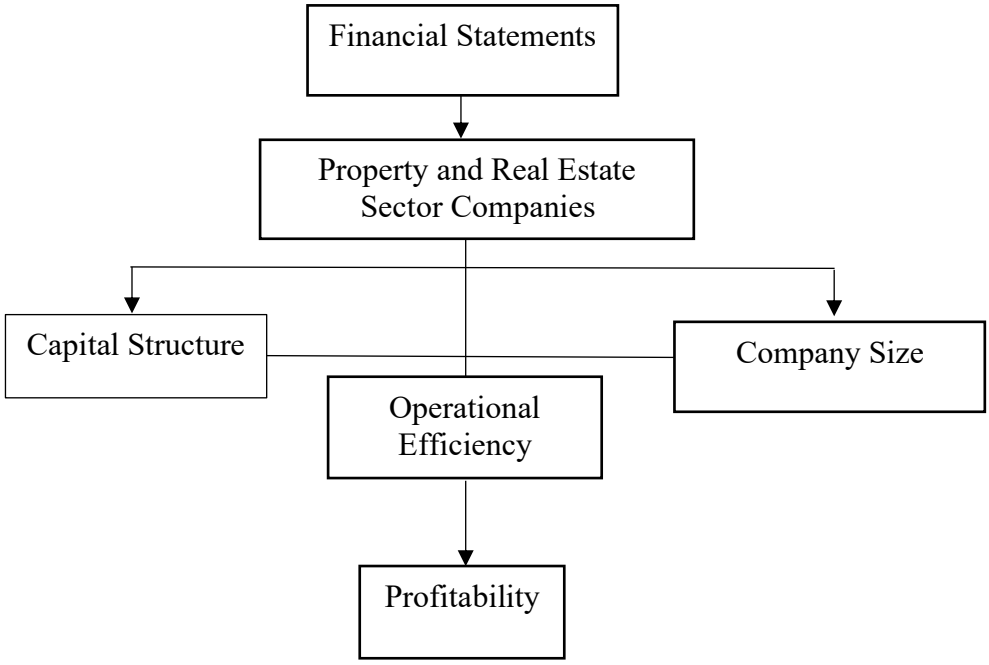
Operational Efficiency

According to Hermanto & Dewinta (2023) Operational efficiency is reflected in how quickly a company's assets generate revenue. Efficiently managing a company by turning over assets can increase profits. Therefore, if asset turnover decreases, it means the company is not utilizing its assets effectively. Efficiency is a metric that compares a process's output to its input. In this context, input is the total expenses incurred to produce revenue, and output is the total revenue from operations over a given period.

According to Wihardianto et al (2023) Delineate that efficiency is the comparison of tangible output with the inputs used. A higher level of efficiency is achieved when the output per unit of resource used is higher. Efficiency is the process of producing the most output possible with a given set of resources. Efficiency will also be better if the results obtained exceed the resources consumed.

According to Yuniari & Badjra (2019)A company's effectiveness is its ability to use resources wisely and avoid waste. An indicator of how well a business controls its efficiency is the BOPO (operating costs divided by operating income) ratio.

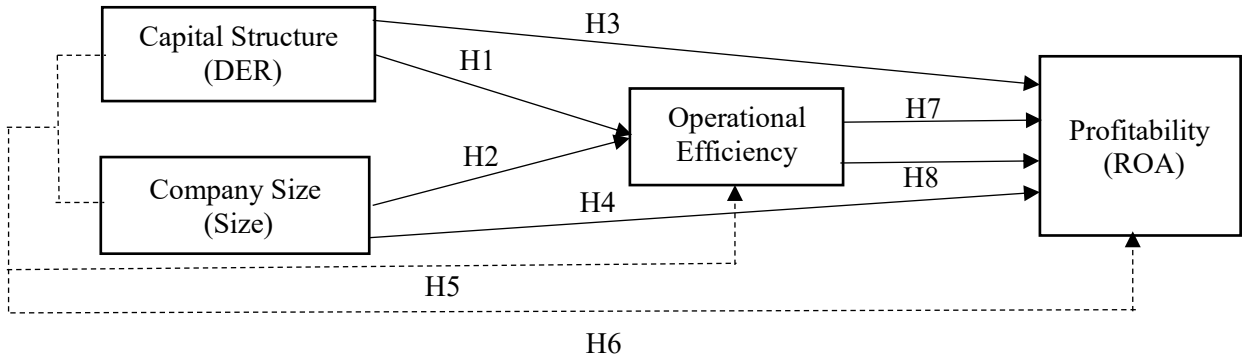
Figure 1. Research Framework and Hypothesis



Source: Processed Data 2024

The research framework diagram shows that this study uses financial reports from companies in the property and real estate sector as the primary data source. From this data, two independent variables, capital structure and firm size, are analysed to determine their impact on firm performance. Furthermore, capital structure and firm size are assumed to influence operational efficiency, which acts as an intervening variable. Operational efficiency is then linked to profitability, the primary dependent variable. This framework shows that firm profitability is influenced not only by the firm's financial characteristics but also by the level of operational efficiency resulting from capital structure and firm scale.

Figure 2. Hypothesis



Research Hypothesis

H1: Capital Structure Affects Operational Efficiency

H2: Firm Size Affects Operational Efficiency

H3: Capital Structure Affects Profitability

H4: Company Size Affects Profitability

H5: Operational efficiency is influenced by business size and capital structure.

H6: Firm size and capital structure affect profitability.

H7: Through operational efficiency as an intervening variable, capital structure has an indirect impact on profitability.

H8: As an intervening variable, operational efficiency has an indirect impact on profitability.

RESEARCH METHODS

Throughout the procedure, this study employed a descriptive approach and a quantitative methodology tailored to the data type. The research sample included companies in the real estate and property industries.

Research Design

The research method used was a quantitative approach with path analysis. A purposive sampling technique yielded 78 companies as research samples, yielding 234 observations during the observation period. Data processing was performed using software version 25. This study focused on property and real estate companies listed on the Indonesia Stock Exchange (IDX) during 2020–2023.

Research Subject

The population used in this study is 92 companies in the property and real estate sector listed on the Indonesia Stock Exchange from 2020 to 2023. The sampling technique in this study uses a purposive sampling technique, namely by taking a sample of companies during the research period based on the following criteria: Property and Real Estate Sector Companies listed on the Indonesia Stock Exchange in 2021-2023, Property and Real Estate Sector Companies that published financial reports consecutively during the research period 2021-2023, Property and Real Estate Sector Companies that have complete data required.

Operational Definition of the Variable

Profitability

The capability of a business to yield earnings across a defined timeframe is gauged via a performance metric known as profitability (Gultom, 2021). Profitability measures the extent to which a business can manage all investments made by its owners, aiming to increase earnings over a given period.

$$\text{ROA} = \frac{\text{Net Profit}}{\text{Total Assets}} \text{ x } 100\% \quad (1)$$

Capital Structure

The term "capital structure" refers to how a company obtains and uses its financial resources, both internally generated and externally sourced. The capital structure is significant because of its direct connection to the company's economic health. Businesses can develop strategies to optimize capital structure and enhance shareholder value. A capital structure is considered optimal when it successfully harmonizes potential risks with possible financial benefits, which leads to a rise in the company's worth (Aslindar & Lestari, 2020).

$$\text{DER}=\frac{\text{Total Debt}}{\text{Total Equity}} \text{ x } 100\% \quad (2)$$

Company Size

Corporate scale is quantified by aggregating asset holdings over a specified reporting horizon. A company's ability to secure more cash increases with its size (Rahayu & Sitohang, 2019). Regardless of size, a company's capacity to grow and develop its business using bank or capital market funding may be reflected in its size.

$$\text{SIZE} = \text{Ln (Total Assets)} \quad (3)$$

Operational Efficiency

According to (Febriyanti et al., 2025)A subset of activity ratios called operational efficiency evaluates how well a business uses its resources. This efficiency measure assesses operations that can accelerate liquidity creation by comparing revenue to different asset investments over a given period.

$$\text{BOPO}=\frac{\text{Operating Costs}}{\text{Operating Income}} \text{ x } 100\% \quad (4)$$

RESULTS AND DISCUSSION

Descriptive Statistic Analysis

Descriptive statistics indicate that the empirical foundation of this study comprises 306 observations (N = 306). The scaling framework used for each indicator is presented in the descriptive analysis output.

Table 2. Descriptive Statistical Analysis

	N	Minimum	Maximum	Mean	Standart. Deviation
Capital Structure	306	-76,75	57,60	0,4511	7,01939
Company Size	306	2,62	3,49	3,2574	0,16400
Operational Efficiency	306	-8,17	0,81	-0,2487	0,76579
Profitability	306	-1,92	8,51	0,0500	0,55830
Valid N	306				

Source: SPSS Data Processing 2025

According to the descriptive statistical evaluation, the dispersion of the dataset utilized in this study indicates that capital structure (X1) exhibits a central tendency of 0.4511, accompanied

by a dispersion index (standard deviation) of 7.01939. The observed values span from a minimum of -76.75 to a peak of 57.60, as detailed in Table 4.1. The company size (X2) indicator has a mean of 3.2574 and a standard deviation of 0.16400, with data ranging from 2.62 to 3.49, as shown in Table 2. The operational efficiency (Z) metric has a mean of -0.2487 and a standard deviation of 0.76579. The values fluctuate from a low of -8.17 to a high of 0.81, as shown in Table 4.1. The Profitability (Y) variable has a mean of 0.0500, a standard deviation of 0.55830, a minimum of -1.92, and a maximum of 8.51.

Classical Assumption Test Results

Data Normality Test Results

Table 3. One-Sample Kolmogorov-Smirnov Test for Normality

		Unstandardized Residual
N		30
Normal Parameters[a,b]	Mean	,0000000
	Standart. Deviation	7,29756837
Most Extreme Differences	overall	,088
	Positive	,069
	Negative	-,088
Test Statistic		,088
Asymp. Sig. (2-tailed)		,200[c,d]
a. Tes distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Source: SPSS Data Processing 2025

Table 3 shows that the study's data are normally distributed. The Asymp. Sig. (2-tailed) A value of 0.200, which exceeds the significance criterion of 0.05 (0.200 > 0.05), supports this conclusion. Therefore, the normalcy assumption is satisfied.

Multicollinearity Test Results

Table 4. Multicollinearity Test Results

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**Collinearity Statistics**	
		B	**Standart. Error**	**Beta**			Tolerance	VIF
1	(Constant)	-240,414	55,149		-4,359	,000		
	Capital Structure	-6,322	1,959	-,416	-3,227	,003	,866	1,155
	Company Size	75,024	16,438	,583	4,564	,000	,880	1,137
	Operational Efficiency	-1,098	1,225	-,112	-,896	,378	,915	1,093
a. Dependent Variable: Profitability								

Source: SPSS Data Processing 2025

Referring to Table 4, the analysis indicates no multicollinearity issues in the study data. The Capital Structure variable (X1), operationalized as the Debt-to-Equity Ratio (DER), yields a

tolerance coefficient of 0.866 and a Variance Inflation Factor (VIF) of 1.155, indicating no multicollinearity. Similarly, Firm Size (X2), derived from the natural logarithmic transformation of total assets (LN Total Assets), shows a tolerance of 0.880 and a VIF of 1.137, further supporting the absence of collinearity concerns. In parallel, the Operational Efficiency construct (Z), measured by the BOPO ratio, shows statistical independence, with a tolerance of 0.915 and a VIF of 1.093.

Heteroscedasticity Test Results

Table 5. Heteroscedasticity Test Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	60,627	29,557		2,051	,050
	X1	-1,097	1,050	-,206	-1,045	,306
	X2	-15,992	8,810	-,355	-1,815	,081
	Z	-,117	,656	-,034	-,179	,860

a. Dependen Variable: ABS_RES

Source: SPSS Data Processing 2025

Table 5 shows that all variables in the regression equation have p-values greater than 0.05: X1 = 0.306, X2 = 0.081, and Z = 0.850. It can be inferred that the regression model used in this investigation does not exhibit heteroscedasticity because each value is greater than 0.05.

Autocorrelation Test

Table 6. Autocorrelation Test

Model Summary[b]

	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,752[a]	,565	,515	7,96414	2,006

a. Predictors: Z, X2, X1

b. Dependent Variable: Y

Source: SPSS Data Processing 2025

Referring to Table 6 above, the Durbin-Watson statistic was 2.006. By considering the previous provisions, the Durbin-Watson value obtained reached 2.315, Therefore, it can be said that there is no autocorrelation, even though the Durbin-Watson number in this investigation was 1.580.

Hypothesis Testing

Partial Test (t)

Table 7. Results of the First Model t-Test (X1 and X2 against Z as a Mediating)

	Unstandardized Coefficients		Std. Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-632,093	240,556		-2,628	,010
X1	-6,092	11,448	-,045	-,532	,596
X2	510,640	202,144	,211	2,526	,013

a. Dependent Variable: Z

Source: SPSS Data Processing 2025

Referring to Table 7, the t-test results indicate the following: the Capital Structure variable (X1) has a p-value of 0.596, which exceeds the conventional threshold of 0.05, and a computed t-statistic of -0.532, which falls below the critical t-table value of 1.992. These figures suggest that variable Z is not meaningfully affected by X1, thereby leading to the rejection of hypothesis H1. In contrast, the Firm Size variable (X2) is statistically significant, with a p-value of 0.013 (well below the 0.05 benchmark) and a t-statistic of 2.529, exceeding the critical value of 1.992. Therefore, Z is significantly influenced by X2, supporting the acceptance of H2.

Table 8. Results of the Second Model t-Test

	Unstandardized Coefficients		Std. Coefficients		Sig.
	B	Standart. Error	Beta		
(Constant)	-55,303	62,190		-0,889	0,375
X1	-13,183	2,890	-0,363	-4,561	0,000
X2	49,314	52,164	0,077	0,945	0,346
Z	0,016	0,022	0,061	0,750	0,455

a. Dependent Variable: Y

Source: SPSS Data Processing 2025

As delineated in Table 8, the Capital Structure variable (X1) exhibits a computed t-statistic of -4.561, which falls below the critical threshold of 1.992, alongside a significance level of 0.000, well beneath the conventional 0.05 cutoff. These metrics substantiate a statistically significant effect of X1 on the dependent variable Y, thereby validating hypothesis H3. In contrast, the Firm Size variable (X2) registers a significance value of 0.346, exceeding the 0.05 benchmark, and a t-statistic of 0.945, which does not surpass the critical value of 1.992. Consequently, X2 is deemed to have no meaningful impact on Y, leading to the rejection of hypothesis H4.

Simultaneous Test Results (f)

Table 9. First Model F-Test Results

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55440,263	2	27720,132	3,332	0,039[b]
	Residual	1131267,521	136	8318,144		
	Total	1186707,784	138			

a. Dependent: Z

b. Predictors: X2, X1

Source: SPSS Data Processing 2025

The calculated F value for the results shown in Table 9 is 3.332, with a significance level (Sig.) of 0.039. The significance value obtained is smaller than the 5% significance level (0.05) (0.039 < 0.05). This indicates that the mediating variable, Operational Efficiency (Z), is significantly influenced by the independent variables, Capital Structure (X1) and Company Size (X2), simultaneously. Thus, H5 is accepted, indicating that, in the first model, Operational Efficiency is influenced by Capital Structure and Company Size.

Table 10 Results of the Second Model F-Test (X1, X2, Z Against Y)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12169,015	3	4056,338	7,667	0,000[b]
	Residual	71427,978	135	529,096		
	Total	83596,993	138			

a. Dependent: Y

b. Predictors: Z, X1, X2

Source: SPSS Data Processing 2025

The calculated F value (Sig. = 0.000) is 7.667, as shown in Table 10. The significance value obtained is smaller than the 5% significance criterion (0.05) (0.000 < 0.05). This indicates that the dependent variable, Firm Value (Y), is significantly influenced simultaneously by the independent variables Capital Structure (X1) and Firm Size (X2), as well as by the mediating variable Operational Efficiency (Z). Thus, H6 is accepted, indicating that in the second model, Capital Structure, Firm Size, and Operational Efficiency jointly influence Firm Value.

Coefficient of Determination (R2) Test

Table 11. Results of the Coefficient of Determination (R2) Test for the First Model

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0,216[a]	0,047	0,033	91,20386
a. Predictors: X2, X1				

Source: SPSS Data Processing 2025

Table 11 shows that the model overview's modified R-squared value is 0.027. This result shows that variables X1 and X2 account for 3.3% of M, with other factors not covered in this study accounting for the remaining 96.7%. However, the formula e1 = √ (1 - 0.047) yields e1 = 0.9762.

Table 12. Results of the Coefficient of Determination (R2) Test for the Second

Model Summary				
Model	**R**	**R Square**	**Adjusted R-Square**	**Std. Error of the Estimate**
1	0,382[a]	0,146	0,127	23,00209
a. Predictors: Z, X1, X2				

Source: SPSS Data Processing 2025

Table 12 shows that the variables Capital Structure (X1), Company Size (X2), and Operational Efficiency (Z) together have an influence of 12.7% on the variation in Company Value (Y), with an e_1 value of √ (1 - 0.146) = 0.9241, which indicates that there is a fairly large external influence on Company Value.

Sobel Test Results

Testing the hypothesis that X1 (Capital Structure) affects Y (Profitability) through Z (Operational Efficiency):

β : Regression coefficient of X1 on Z = -6.092

β : Regression coefficient of Z on Y = 0.016

Sβ : Standard error of variable X1 = 11.448

Sβ : Standard error of variable Z = 0.022

The following are the results of the online Sobel test:

Sobel test statistic = -0.42945896

One-tailed probability = 0.33379463

Two-tailed probability = 0.66758925

The Sobel test is used to assess the significance of the indirect effect of independent variables on dependent variables through mediating variables. In this study, the Sobel test examines whether operational efficiency (Z) mediates the relationship between capital structure (X1) and profitability

(Y). Based on the calculation results, the Sobel test statistic is -0.429, indicating a negative indirect effect. However, this statistic falls below the critical value of ±1.96 at the 5% significance level. Furthermore, the one-sided p-value of 0.334 and the two-sided p-value of 0.668 indicate that the test result is not statistically significant, as it exceeds the 0.05 significance level. These results indicate that the combined effect of capital structure on operational efficiency and of operational efficiency on profitability is not strong enough to establish a significant mediating pathway. In other words, although capital structure influences operational efficiency, which in turn relates to profitability, the indirect effect via operational efficiency does not significantly affect profitability.

Hypothesis testing of the effect of X2 (Company Size) on Y (Profitability) through Z (Operational Efficiency):

β : Regression coefficient of X2 on Z = 510.640
β : Regression coefficient of Z on Y = 0.016
Sβ : Standard error of variable X2 = 202.144
Sβ : Standard error of variable Z = 0.022

The following are the results of the online Sobel test:
Sobel test statistic value = 0.69888501
One-tailed probability = 0.24231195
Two-tailed probability = 0.48462390

The Sobel test was used to test the significance of the indirect effect of firm size (X2) on profitability (Y) through operational efficiency (Z) as a mediating variable. Based on the estimation results, the regression coefficient of firm size on operational efficiency was positive at 510.640, while the regression coefficient of operational efficiency on profitability was 0.016. The Sobel test yielded a statistic of 0.699, which is below the critical value of ±1.96 at the 5% significance level. Furthermore, the one-sided p-value of 0.242 and the two-sided p-value of 0.485 exceed the 0.05 significance level. Thus, the indirect effect of firm size on profitability through operational efficiency is declared statistically insignificant. This finding indicates that although firm size influences operational efficiency, which in turn is related to profitability, the mediating pathway is not strong enough to explain changes in firm profitability. Therefore, operational efficiency does not mediate the relationship between firm size and profitability in property and real estate companies.

CONCLUSION

The analytical results indicate that firm size has no statistically significant effect on operational efficiency, whereas capital structure does. Additionally, while firm size does not significantly shape profitability, capital structure is a significant determinant. Moreover, both financial leverage and organizational scale collectively contribute to variations in profitability and

operational performance. Nonetheless, operational efficiency does not mediate the link between capital structure and profitability, nor the association between firm size and profitability. By presenting empirical data on the correlations among capital structure, business size, operational efficiency, and profitability in Indonesia's property and real estate industry, this study advances the fields of financial management and accounting.

These results contribute to the theoretical understanding of how operational efficiency mediates the relationship between financial performance (profitability) and financing decisions (capital structure). Additionally, this analysis clarifies discrepancies in earlier studies, particularly regarding the impact of business size and capital structure on profitability, which often yields disparate outcomes across industries. Furthermore, this study offers a new perspective by using the 2020–2023 period, which reflects post-COVID-19 economic conditions. Thus, this study provides a more up-to-date picture of how property and real estate companies adapt to economic pressures and how operational efficiency can be a determining factor in maintaining profitability during the economic recovery. In practice, the findings of this study can inform business management in developing more effective operational and financial policies.

This study focuses only on real estate and property companies listed on the Indonesia Stock Exchange (IDX); its conclusions may not apply to other industries. Inconsistencies in data across years, due to some companies not regularly publishing annual or sustainability reports, limit the dataset's completeness and comparability. The three-year observation period provides only a short-term perspective and may not fully capture long-term trends or effects in the relationship among the variables studied.

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