



SUSTAINABILITY PERFORMANCE AND FINANCIAL PERFORMANCE ON MARKET CAPITALIZATION WITH GREEN COMPLIANCE AS A MODERATING VARIABLE IN NON-FINANCIAL COMPANIES IN ASEAN COUNTRIES

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Abstract: This study aims to analyze the influence of the Environmental, Social, and Governance (ESG) Score and financial performance, as proxied by Return on Investment (ROI), Working Capital to Total Assets (WCTA), and Debt Ratio (DR), on firm value, as measured by Market Capitalization, in non-financial companies in ASEAN countries. This study also incorporates Green Compliance as a moderating variable to assess the extent to which environmental compliance strengthens the relationship between sustainability performance, financial indicators, and firm value. The study employed an explanatory design with secondary data, in the form of panel data obtained from Refinitiv for 213 non-financial companies listed in Indonesia, Malaysia, Singapore, the Philippines, and Thailand during the 2021–2023 period. The analysis was conducted using panel data regression. The results show that the ESG Score, ROI, WCTA, and DR variables consistently have a significant effect on market capitalization, a proxy for firm value. ESG has been shown to play a significant role in shaping investor perceptions in emerging markets, while ROI and WCTA indicate that internal financial strength remains the primary determinant of market value. The Debt Ratio also exerts a significant influence, underscoring the importance of capital structure decisions. Furthermore, Green Compliance moderates the relationship between ESG and ROI on firm value, indicating that companies with higher levels of environmental compliance are able to translate sustainability and financial performance into better market value. However, Green Compliance does not moderate the effect of WCTA and DR, suggesting that liquidity efficiency and leverage policy appear less sensitive to environmental compliance. This study provides empirical evidence that integrating sustainability performance, financial strength, and environmental compliance is a more comprehensive approach to explaining firm value formation in the ASEAN region. These findings also provide implications for companies, investors, and regulators, and open up opportunities for further research related to additional moderating variables, longer observation periods, and the use of dynamic panel methods.

Keywords: ESG Score, Financial Performance, Compliance Level, Market Capitalization



INTRODUCTION:

Increasing access to capital is often considered a primary goal of going public, as investors tend to be more attracted to companies with high corporate value. Generally, corporate value is seen as a reflection of management's performance in meeting shareholder expectations.[1]. The increase in company value not only reflects internal performance but is also a positive signal for investors who are considering the prospects for returns on their investments,[2]One indicator that can be used to measure a company's value, particularly in the stock market, is market capitalization.[3].

Some companies and even investors consider market capitalization to reflect the company's value.[4]Market capitalization is an indicator that describes the total value of a company in the capital market, calculated by multiplying the current share price by the number of shares outstanding. In ASEAN countries, market capitalization also shows a positive growth trend. Based on data from the ASEAN Exchanges (2025), Indonesia ranks first with a market capitalization of USD 881.47 billion, surpassing Singapore (USD 609.65 billion). Thailand's market capitalization is USD 559.22 billion, and Malaysia's is USD 445.38 billion (ASEAN Exchange, 2025). Therefore, it is important for companies to consider the factors that influence the value of market capitalization.

Factors that influence a company's value include financial performance, market conditions, and the economy. In recent years, investor attention has focused on sustainability issues.[5]In the modern business era, the concept of sustainability is not only a moral choice but also a business strategy that directly impacts a company's value. One widely used approach to measuring sustainability is the Environmental, Social, and Governance (ESG) Score.[6].

The focus on ESG reporting and sustainability studies varies from country to country. ASEAN countries, such as Indonesia, Malaysia, Thailand, and Vietnam, show a trend of increasing attention to ESG in sustainability reports and public disclosures. However, a gap remains between reporting practices and their actual impact on market capitalization.[7]In Indonesia, of the 80 companies that conducted ESG ratings, 13 had ESG scores below 50, or approximately 16% of the total companies reporting ESG. Meanwhile, in Malaysia, of the 335 companies that underwent ESG ratings, 219, or 65.53%, had poor ESG performance.

In the Philippines, of the 30 companies participating in the ESG ranking, 14 (46.6%) had an ESG score below 50. Meanwhile, in Singapore, 29 companies (39.18% of the total companies reporting ESG) also had low ESG scores. In Thailand, 62 companies had ESG scores below 50. In Vietnam, of the 24 companies reporting ESG, 21 had ESG scores below 50.

In addition to ESG, financial performance remains a crucial indicator in assessing a company's market value. However, current market dynamics indicate that financial performance alone is insufficient. The combination of ESG and financial performance is considered a more comprehensive measure of market capitalization, particularly in developing regions such as ASEAN countries undergoing structural transformation toward a sustainable economy.[8]An overview of the ESG Score, financial performance, and market capitalization trends in ASEAN countries is depicted in the Trend Chart below.

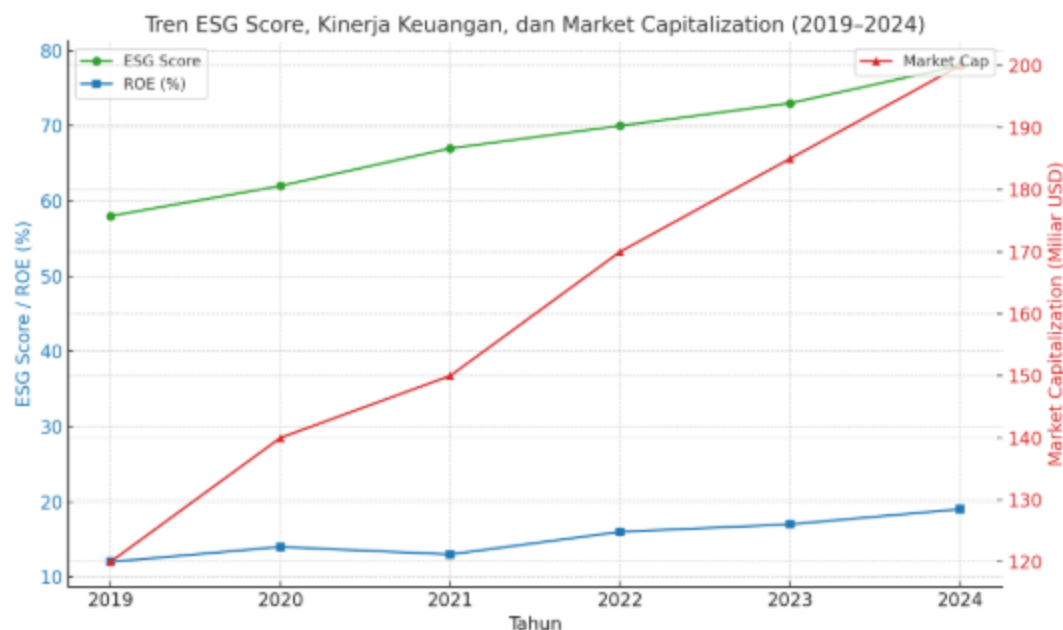


Chart 1: Trend of the relationship between ESG Score, Financial Performance and Market Capitalization (source Slibis 2025)

Based on the trend graph above, financial performance in ASEAN countries in 2020 increased from 10% to 12% then decreased in 2021 to 10%, rose again in 2022 to 17%, rose again in 2023 to 18% and at the end of 2024 to 20%. The ESG Score value in ASEAN countries tends to be 50% in 2019, increased in 2020 to 60%, increased again in 2021 to 18%, in 2022 the ESG Score in ASEAN countries became 70%, in 2023 to 73% and at the end of 2024 to 75%.

Chart 1 shows that the trend of ESG Score and company financial performance has increased over time. However, this increase is not as large as the growth in Market Capitalization. This difference in growth rates raises questions about the extent to which ESG Score and financial performance influence a company's market value. Based on this, this study aims to examine the effect of ESG Score and financial performance on Market Capitalization by using Green Compliance as a moderating variable. The use of Green Compliance as a moderating variable is novel in this study and is expected to provide new contributions to understanding the relationships between the variables studied.

Another objective of selecting Green Compliance as a moderating variable is to assess the extent to which companies in ASEAN countries comply with all regulations and policies related to environmental management and protection, as part of their commitment to sustainable operational activities. In practice, many companies focus more on production efficiency and profit, without considering the environmental impacts they cause.[9]As a result, environmental management programs are often neglected, which indicates a low level of compliance with environmental protection.[10]Ideally, companies operating in the area should pay attention to environmental conditions, as these activities have the potential to damage the environment. This factor is also a consideration for investors when assessing a company's sustainability, which ultimately impacts the company's value.[11].



If a company implements Green Compliance consistently, the company not only fulfills its legal obligations, but also demonstrates a commitment to long-term sustainability,[12] Compliance with environmental regulations is a fundamental foundation, but superior companies typically go beyond the regulatory minimum and integrate environmentally friendly practices into their operational strategies. This is crucial because environmental compliance is no longer seen as a burden, but rather as a long-term investment that can increase efficiency, reduce risk, and strengthen a company's reputation.[13].

Overall, this study produces a more comprehensive empirical model by integrating sustainability indicators, financial performance, and Green Compliance into a single analytical framework. This contribution strengthens theoretical development, particularly signaling theory and stakeholder theory, and provides new empirical evidence on the conditions that make ESG information more credible, relevant, and influential on firm value. Based on the background outlined above, this study seeks to further examine "Environmental, Social, and Governance Scores and Financial Performance on Firm Value with Green Compliance as a Moderating Variable."

METHODOLOGY:

The data used in this study is data collected in 2021-2023, so that the research data is panel data.[14]. The data in this study were taken from Refinif.com, namely the ESG Score, ROI, WCTA, Debt Ratio, and Market Capitalization. The companies from 5 countries, namely Indonesia, Malaysia, Singapore, Thailand, and the Philippines. The number of observations used in this study was 213 companies. The sampling technique used Purposive Sampling, with the following sampling criteria: (1) Public companies in ASEAN countries that conduct ESG ratings: 699 companies, (2) non-financial companies: 435 companies, (3) non-financial companies with complete ESG and Market Capitalization data: 317 companies, (4) Data without Outliers: 213 companies.

The analysis technique used is Multiple regression with Moderator Regression Analysis (MRA) to determine the relationship between ESG Score, ROI, WCTA, and Debt Ratio with Green Compliance as a moderating variable. Moderator Regression Analysis (MRA) or interaction testing is a specific application of multiple linear regression where the regression equation contains an interaction element (the multiplication of two or more independent variables). This test is conducted to determine the significance of the individual influence of the independent variables in the model on the dependent variable. By conducting this test, the statistical values of each independent variable are determined.

Moderator Regression Analysis(MRA) is a specialized linear multiple regression analysis where the regression equation contains an interaction element (the multiplication of two or more independent variables). In this study, the interaction that occurs is the multiplication between ESGcore and Green Compliance as a moderating variable on Market Capitalization. Moderated regression analysis is processed by comparing regression equations to determine the type of moderator variable. This study conducted two analyses. The equation model is as follows:



The econometric equation to test this influence is as follows:

$$Market\ Cap = \alpha + \beta_1 ESGScore_{it} + \beta_2 ROI_{it} + \beta_3 WCTA_{it} + \beta_4 DR_{it} + \beta_5 sizefirm_{it} + \beta_6 ROA_{it} + \beta_7 DER_{it} + \varepsilon \dots\dots\dots (1.1)$$

$$Market\ Cap = \beta_0 + \beta_1 ESGScore_{it} + \beta_2 ROI_{it} + \beta_3 WCTA_{it} + \beta_4 DR_{it} + \beta_5 sizefirm_{it} + \beta_6 ROA_{it} + \beta_7 DER_{it} + \beta_8 GC + \beta_9 ESGScore \times GC_{it} + \beta_{10} ROI \times GC_{it} + \beta_{11} WCTA \times GC_{it} + \beta_{12} DR \times GC_{it} + \varepsilon \dots\dots\dots (2.1)$$

Operational Definition of Variables

To be clearer about the variables in this study, the researcher summarizes them in the operational definition of the research variables as listed in Table 1 below.

Table 1: Operational Definition of Variables

Dependent Variable	Explanation	Measurement
<i>Market Capitalization</i>	Market value multiplied by the number of shares outstanding	<i>Market capitalization = Nilai Pasar x jumlah saham beredar</i>
<i>Environmental, Social and Governance Score</i>	Assessment of environmental indicators measured through Escore, community social life (S Score) and Corporate Governance (G Score)	<i>Environmental, Social and Governance Score</i>
ROI (return on investment)	Comparison of net profit after tax and investment	$ROI = \frac{EAT}{Total\ investasi}$
<i>Working Capital to total Assets</i>	Comparison of net working capital and total assets	$WCTA = \frac{working\ capital}{Total\ Asset}$
<i>Debt Ratio</i>	Total Liabilities Divided by Total Assets	$DR = \frac{Total\ Hutang}{Total\ Aktiva}$
Moderating Variables	Green Compliance	Compliance Scale Level (5 = very compliant, 4 = compliant, 3 = moderate, 2 = less compliant, 1 = not compliant)
Control variables		
<i>Size firm</i>	Calculating the total assets of the company	Ln_Total Asset
<i>ROA</i>	Calculate net profit divided by total assets	$ROA = \frac{Net\ Income\ After\ Tax}{Total\ Aktiva}$
<i>DER</i>	Calculate Total Debt divided by Total Assets	$DER = \frac{Total\ Hutang}{Total\ Ekuitas}$



Empirical Model

This study uses multiple regression with Moderator Regression Analysis (MRA) to determine the relationship between ESG Score and Green Compliance as a moderating variable. Moderator Regression Analysis (MRA) or interaction test is a special application of multiple linear regression where the regression equation contains an interaction element (multiplication of two or more independent variables). Moderator regression analysis processing is done by comparing regression equations to determine the type of moderator variable. Moderator Regression Analysis (MRA) is a special analysis of multiple linear regression where the regression equation contains an interaction element (multiplication of two or more independent variables). In this study, the interaction that occurs is the multiplication between ESGScore, ROI, WCTA, Debt Ratio with Green Compliance as a moderating variable on Market Capitalization. Moderator regression analysis processing is done by comparing equations.

RESULTS AND DISCUSSION:

The test conducted examined the relationship between the independent variables: ESG Score, Return on Investment (ROI), Working Capital to Total Assets (WCTA), and Debt Ratio. The dependent variable was Market Capitalization (MC). This study also included a moderating variable, namely the company's level of compliance (Green Compliance).

In hypothesis testing, we will analyze the coefficient of determination, test the simultaneous effect (F test), and test the partial effect (t test). The statistical values of the coefficient of determination, F test, and t test are presented in Table 4.1.

Table 4.1 Statistical values of the Coefficient of Determination, F Test, and t Test

	Coef.	Std. Err.	t	P > t
Model 1: Market Capitalization				
Esg	0.0042596	0.0020525	2,080	0.038
Roy	0.0232989	0.0057224	4,070	0.000
Wcta	0.0448374	0.0140801	3,180	0.002
Dr	0.0099858	0.0042045	2,380	0.018
Green compliance performance	-0.0178617	0.0970103	-0.180	0.854
Xesg green compliance performance	0.0023523	0.0007023	3,350	0.001
Xroi green compliance performance	-0.0067486	0.0029451	-2,290	0.022
Xwcta green compliance performance	0.0008862	0.0098104	0.090	0.928
Green compliance performanceXdr	-0.0035796	0.0022352	-1,600	0.110
Roa	-0.0173059	0.0082623	-2,090	0.037
Der	-0.0014649	0.0012636	-1,160	0.247
Size	-0.0670877	0.0302668	-2,220	0.027
_cons	0.5915709	0.6414183	0.920	0.357
R-Squares = 0.1068				
Prob. F = 0.0000				



The R-Square value for the Model is 0.1068, which means that approximately 10.68% of the variation in Market Capitalization can be explained by the independent variables in the model, namely ESG performance (*escore*, *sscore*, *gscore*), ROI, WCTA, DR, green compliance performance, the interaction of green compliance with ESG elements and financial ratios, and the control variables ROA, DER, and Size. Although this value is relatively low, it is common in financial and market panel data, because company value is influenced by many external factors such as market conditions, government policies, macroeconomic conditions, and investor sentiment that cannot be fully captured by the regression model.

In the model, the F-test results show a Prob value $> F = 0.0000$, which means it is smaller than the 0.05 significance level. Thus, it can be concluded that simultaneously all independent variables in the model including ESG, ROI, WCTA, DR, green compliance performance, the interaction of green compliance with ESG elements and financial ratios, as well as the control variables ROA, DER, and Size have a significant effect on Market Capitalization. This indicates that the combination of sustainability variables and financial performance has the ability to explain variations in the company's overall market value.

These results are also supported by empirical findings from various international studies. Research,[15]A review of over 2,000 global studies found that the majority of studies demonstrated a positive relationship between ESG and both financial performance and firm value. Similar findings were also presented by Ofori et al. (2020), who explained that companies with high ESG scores tend to have higher market value because they are perceived as more stable, long-term oriented, and have lower risk. Thus, these research findings strengthen the global evidence that ESG is a key determinant of firm value formation.

Furthermore, the results of this study align with those of Chouaibi et al. (2022), who asserted that strong ESG performance directly impacts a company's reputation, operational efficiency, and investor perceptions of its growth prospects. This demonstrates that environmental, social, and governance aspects serve as differentiating factors that increase a company's market appeal. As market awareness of sustainability issues increases, companies with high ESG scores are considered better able to withstand regulatory pressures, environmental risks, and changing consumer preferences.

Overall, this research's findings reinforce the understanding that ESG is no longer an optional attribute, but rather a strategic component of corporate value creation. The combination of social legitimacy (through ESG activities) and corporate credibility among investors has been shown to significantly increase market valuation. Therefore, for public companies, improving their ESG scores not only provides environmental and social benefits but also generates tangible economic and market advantages.

This research provides an important empirical contribution, demonstrating that ESG plays a substantial role in strengthening corporate value in the ASEAN corporate context, which has



attracted global investor attention. Therefore, Hypothesis 1 can be accepted.

The regression results in the model show that ROI has a positive and significant effect on market capitalization, with a coefficient value of 0.0233 and a p-value of 0.000. This finding suggests that the higher a company's ability to generate profits from its investments, the greater the market's assessment of the company's size. A high ROI provides a strong signal of management effectiveness in managing assets, leading to a positive investor response and an increase in the company's market capitalization.

The results of this study support the results of the research conducted [3] And [5] Their research results show that a company's profitability influences its value. This is because high profitability attracts investors. Therefore, H2 is accepted.

The results of the study indicate that Working Capital to Total Assets (WCTA) has a positive and significant effect on firm value in regression models. This is evident from the WCTA value against Market Capitalization, with a regression coefficient value = 0.0448374, and significant, with a probability value = $0.002 < 0.05$.

These findings indicate that companies with strong liquidity, indicated by a high proportion of working capital to total assets, tend to have higher market values. Strong liquidity signals a company's ability to meet short-term obligations and maintain operational stability. Therefore, increased WCTA contributes to positive perceptions of the company, thus increasing market valuation, as measured by Market Capitalization, thus supporting H3.

Debt ratio has a positive effect on Market Capitalization, with a regression coefficient value = 0.0099858, and is significant, with a probability value = $0.018 < 0.05$. The regression results show that the Debt Ratio has a positive and significant effect on Market Capitalization, with a coefficient of 0.0099 and a p-value of 0.018. This indicates that the higher the proportion of debt used, the more positive the market response is, as it assesses the company's ability to utilize leverage to improve operational activities. Optimal debt use provides room for companies to expand investment, increase production capacity, and boost profitability, thus increasing market valuation through Market Capitalization. [16] Therefore, the fourth hypothesis is accepted because the debt ratio is proven to influence market capitalization.

In the Market Capitalization model, the interaction variable $ESG \times \text{Green Compliance Performance}$ shows a positive and significant effect with a coefficient of 0.00235 and a p-value of 0.001. These results indicate that green compliance performance can strengthen the relationship between ESG and company value. In other words, ESG alone has a positive effect, but when a company also has a high level of environmental compliance, the effect of ESG on increasing Market Capitalization becomes stronger. This indicates that the market responds more strongly to companies that not only have high ESG scores but also have a good track record of environmental compliance.



This finding can be explained through legitimacy theory, which states that companies gain public legitimacy when their operational activities align with social and environmental norms. Green compliance strengthens ESG credibility, thereby increasing investor confidence, which ultimately increases market capitalization. Therefore, the fifth hypothesis of this study is accepted because green compliance has been shown to strengthen the relationship between ESG and market capitalization. This means that Hypothesis 5 is accepted.

Table 4. 1 shows that green compliance performance significantly moderates the effect of ROI on Market Capitalization, with a probability value of $0.022 < 0.05$. Therefore, the sixth hypothesis is accepted. In the Market Capitalization model, the interaction variable $\text{ROI} \times \text{Green Compliance Performance}$ has a negative and significant effect with a coefficient of -0.00674 and a p-value of 0.022 . This finding indicates that the presence of green compliance performance actually weakens the effect of ROI on Market Capitalization. In other words, although ROI individually increases firm value, when a firm has a high level of environmental compliance, the effect of ROI on Market Capitalization is less strong. This suggests that the market may place more emphasis on sustainability quality than pure profitability in the process of assessing firm value.

This finding can be explained through stakeholder theory, where increasingly environmentally conscious investors tend to place greater weight on sustainability practices than short-term financial indicators like ROI. When a company already has strong green compliance, the market may perceive high profitability as no longer the primary determinant.

The regression results in the Model show that the interaction of $\text{WCTA} \times \text{Green Compliance Performance}$ does not significantly influence Market Capitalization, with a coefficient of 0.000886 and a p-value of 0.928 . This finding means that although WCTA individually has a positive and significant effect on Market Cap, the presence of green compliance does not significantly strengthen or weaken the relationship. This means that the influence of company liquidity on market value is not influenced by the level of company environmental compliance. The market still responds to WCTA as an indicator of a company's ability to manage current assets without considering environmental compliance aspects.

The relationship between liquidity and firm value is more influenced by the efficiency of current asset management than external factors such as environmental compliance. This explains why green compliance does not moderate the relationship between WCTA and Market Capitalization. Therefore, Hypothesis 7 is rejected.

The regression results in the model show that the interaction variable between Green Compliance and Debt Ratio ($\text{GC} \times \text{DR}$) has a positive but insignificant effect on Market Capitalization, indicated by a small coefficient value and a p-value above 0.05 . This indicates that the existence of Green Compliance has not been able to strengthen the relationship between the Debt Ratio and market capitalization. This means that even though a company has a high level of environmental compliance, the market has not yet used this factor as a basis for assessing the



effectiveness of debt use in increasing market value. In this context, investors still seem to focus more on financial fundamentals than sustainability attributes when assessing the effect of leverage on Market Capitalization.

Signaling theory states that a signal to investors will be effective if it aligns with the intended information. ESG/green compliance is a reputational signal, while the debt ratio is a capital structure signal. These two signals are not always mutually reinforcing, as investors view green compliance as an ethical and reputational factor, but debt as a financial and risk factor. Therefore, sustainability signals do not automatically increase the effectiveness of leverage in influencing company value.

The literature often shows that green compliance is more influenced by operational efficiency, reputation, legal and environmental risks, but is not directly related to funding policies like the debt ratio. Therefore, the interaction with the debt ratio is economically weak, resulting in insignificant results. Therefore, the eighth hypothesis is rejected.

CONCLUSIONS

The results of the study show that all independent variables (ESG Score, ROI, WCTA, and Debt Ratio) are proven to have a significant effect on market cap. :1. ESG Score consistently increases Market Cap, 2. ROI as a profitability indicator provides the strongest contribution to increasing company value, 3. WCTA is proven to increase market response through operational liquidity capabilities, 4. Debt Ratio shows a significant relationship with this models, indicating that a controlled debt structure is still appreciated by the market. These findings indicate that both sustainability performance and fundamental financial performance together provide a strong signal to investors.

Green Compliance has been shown to moderate the relationship between ESG and ROI on market capitalization. The results are as follows: (1) $GC \times ESG$ moderation is reinforcing, indicating that sustainability signals supported by environmental compliance result in a significant increase in market value. (2) Green Compliance weakens the influence of ROI on Market Capitalization. This is because Green Compliance requires large investments, which will increase costs, so companies cannot achieve cost efficiency if they do so.

Green Compliance failed to moderate the relationship between WCTA and DR on market capitalization. For WCTA, working capital is not directly related to sustainability issues, so GC does not strengthen its influence. For the Debt Ratio, the financial risk from leverage remains dominant, so environmental compliance is not strong enough to change market perceptions. These results suggest that not all financial dimensions can be combined with sustainability policies to generate significant signals for investors.

This study provides methodological implications for academics and future researchers. The strong influence of ESG, ROI, WCTA, and DR on market capitalization, suggests that multidimensional valuation models should be used in further research. The failure of green compliance to moderate WCTA and Debt Ratio also opens up the possibility of exploring other



moderating variables, such as environmental performance, CSR spending, or corporate governance. Furthermore, to increase generalizability, future research is recommended to expand the observation period, add more industrial sectors, and consider dynamic panel methods or GMM to address potential endogeneity bias.

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