

Cost of Debt, Managerial Overconfidence, Institutional Shareholding, and ESG Performance: Evidence from the Indonesia Stock Exchange

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Abstract

This study examines the influence of the cost of debt, managerial overconfidence, and institutional shareholding on Environmental, Social, and Governance (ESG) performance among firms listed on the Indonesia Stock Exchange (IDX). Using a quantitative approach, the study analyzes 85 firms with available ESG scores in 2024. Multiple linear regression analysis is employed to test both partial and simultaneous effects. The findings indicate that financing conditions, behavioral biases, and ownership structures collectively shape corporate sustainability outcomes. Specifically, the cost of debt reflects financial constraints that influence ESG investments, while managerial overconfidence exhibits a context-dependent effect. Institutional shareholding plays a significant governance role by enhancing monitoring and encouraging ESG engagement. Overall, this study contributes to the limited empirical literature on ESG determinants in emerging markets, particularly Indonesia, and provides insights for investors, regulators, and corporate decision-makers.

Keywords: ESG Performance, cost of debt, managerial overconfidence, institutional ownership

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1. INTRODUCTION

Environmental, Social, and Governance (ESG) performance has evolved from a peripheral concern into a central pillar of corporate strategy and long-term value

creation. ESG provides a multidimensional framework for evaluating firms beyond traditional financial metrics by incorporating environmental stewardship, social responsibility, and governance quality. The environmental dimension (E) captures firms' impact on natural resources and climate change mitigation; the social dimension (S) reflects relationships with employees, customers, and communities; while the governance dimension (G) concerns internal controls, transparency, and shareholder rights. The growing global awareness of sustainability challenges, coupled with increasing regulatory pressure and investor demand, has encouraged corporations to integrate ESG principles into their core operations (Chopra et al., 2024).

In the Indonesian setting, ESG has moved rapidly from a voluntary practice to a regulated and market-embedded agenda, which makes the country a compelling and timely research context. The Financial Services Authority (*Otoritas Jasa Keuangan*, OJK) institutionalized sustainable finance through POJK No. 51/POJK.03/2017 and the Sustainable Finance Roadmap Phase II (2021–2025), and in February 2025 issued Version 2.0 of the Indonesian Taxonomy for Sustainable Finance (TKBI), broadening sustainability criteria beyond the energy sector. In parallel, the Indonesia Stock Exchange (IDX) launched the IDX ESG Leaders Index and, in January 2025, a standardized ESG reporting mechanism (Form E020) aligned with the ASEAN Exchanges' ESG common-core metrics. The population of Indonesian firms holding recognized ESG scores has grown markedly in recent years, yet ESG ratings and disclosure quality remain uneven across issuers (Angir & Weli, 2024; Kurniawati & Michelle, 2025). These developments make it both timely and important to examine what drives ESG performance among Indonesian listed firms, rather than assuming that determinants documented in developed markets transfer directly to Indonesia's concentrated-ownership, emerging-market environment.

Despite the increasing importance of ESG, the determinants of ESG performance remain complex and not fully understood, particularly in emerging markets. Firms that fail to manage ESG risks face significant consequences, including reputational damage, regulatory sanctions, and financial penalties. Empirical evidence suggests that firms with weaker ESG performance are often

perceived as riskier, which can negatively affect their access to capital and overall valuation (Apergis et al., 2022). At the same time, ESG outcomes are shaped by a combination of financial, behavioral, and governance-related factors. Among these, the cost of debt has emerged as a critical financial determinant, as higher borrowing costs may constrain firms' ability to invest in sustainability initiatives, while lower borrowing costs often signal stronger governance and lower perceived risk (Zhao et al., 2024). In addition, managerial characteristics, particularly managerial overconfidence, can influence strategic decision-making, potentially leading to either underinvestment in ESG due to risk underestimation or overinvestment as a form of signaling behavior (J. Wang et al., 2025). Furthermore, institutional investors play a pivotal role in shaping corporate policies, as their ownership and monitoring capabilities can pressure firms to adopt stronger ESG practices and enhance transparency (J. Liu et al., 2023).

While a growing body of international literature has examined the relationships between cost of debt, managerial overconfidence, institutional shareholding, and ESG performance, empirical evidence from emerging markets, particularly Indonesia, remains limited. Most existing studies focus on developed economies or large cross-country samples, which may not fully capture the institutional, regulatory, and market-specific dynamics of Indonesia. As an emerging market, Indonesia is characterized by evolving ESG disclosure standards, concentrated ownership structures, and varying levels of institutional investor influence. These characteristics may produce different relationships between financial constraints, managerial behavior, and ESG outcomes compared to those observed in developed markets. Therefore, there is a clear need for context-specific empirical research that examines how these factors interact within the Indonesian capital market.

To make the selection of variables conceptually coherent, this study frames cost of debt, managerial overconfidence, and institutional shareholding as three complementary levers that jointly govern the flow of resources into ESG activities. Cost of debt captures the firm's financial capacity and the price of external capital; managerial overconfidence captures the cognitive lens through which decision-makers evaluate ESG risks and returns; and institutional shareholding captures the external governance and monitoring intensity that disciplines those decisions. Read

together through a resource-allocation logic, a firm invests in ESG when it has the financial slack to do so, when management perceives the investment as worthwhile, and when owners hold management accountable for it. This integrative framing of financial capacity, managerial cognition, and governance monitoring provides a single organizing rationale for studying the three constructs simultaneously rather than in isolation and responds to calls in the corporate-finance literature to examine ESG determinants jointly across financial, behavioral, and governance channels (Gillan et al., 2021).

Against this backdrop, the novelty of this study is threefold. First, whereas most prior evidence isolates a single determinant of ESG (financing conditions, managerial traits, or ownership structure), this study integrates all three within one empirical model for an emerging market, allowing their relative and combined explanatory power to be assessed. Second, it employs a forward-looking, risk-based ESG measure (the Morningstar Sustainalytics ESG Risk Rating) for Indonesian firms in 2024, a setting in which such determinant studies remain scarce. Third, by situating the analysis within Indonesia's evolving disclosure regime and concentrated-ownership structure, it tests whether relationships established in developed markets hold under emerging-market institutional conditions, thereby extending, rather than merely replicating, the existing literature.

This study aims to address this research gap by investigating the influence of cost of debt, managerial overconfidence, and institutional shareholding on ESG performance among firms listed on the Indonesia Stock Exchange (IDX). By integrating financial, behavioral, and governance perspectives, this research provides a more comprehensive understanding of the drivers of ESG performance in an emerging market context. Specifically, the study examines both the partial effects of each independent variable and their simultaneous impact on ESG outcomes.

The three independent variables are selected because each is theoretically linked to ESG performance through a distinct, well-documented mechanism. Cost of debt proxies' financial constraint: higher borrowing costs reduce the discretionary resources available for sustainability investment and signal higher perceived risk, so financing conditions are expected to shape ESG outcomes (Apergis et al., 2022; Muchenje et al., 2025). Managerial overconfidence proxies behavioral bias in

strategic decision-making: because overconfident managers systematically misjudge risks and return, they may either under-invest in ESG (treating it as an avoidable cost) or over-invest in it (as optimistic signaling), making the direction an empirical question (Du et al., 2024; Lu et al., 2025). Institutional shareholding proxies external monitoring: institutional owners have both the incentive and the capacity to press management toward stronger ESG practices and disclosure (J. Liu et al., 2023; Sun & Zhao, 2024). Examining the three together therefore captures the financial, behavioral, and governance dimensions that the literature identifies as the principal drivers of corporate ESG performance.

The contributions of this study are threefold. First, it extends the ESG literature by providing empirical evidence from Indonesia, thereby addressing the scarcity of research in emerging markets. Second, it integrates multiple theoretical perspectives, including stakeholder theory, agency theory, behavioral finance, and signaling theory, to explain the interplay between financial conditions, managerial behavior, and ownership structure. Third, it offers practical insights for corporate managers, investors, and policymakers by identifying key factors that influence ESG performance and sustainability practices. These contributions are expected to enhance the understanding of ESG dynamics in Indonesia and support the development of more effective strategies for sustainable corporate governance.

2. LITERATURE REVIEW

2.1. Related Theories

The relationship between cost of debt, managerial behavior, institutional ownership, and ESG performance can be understood through several complementary theoretical perspectives. Stakeholder theory (Freeman, 1994) posits that firms are accountable not only to shareholders but also to a broader set of stakeholders, including employees, customers, regulators, and society. From this perspective, ESG performance reflects a firm's ability to balance stakeholder interests and maintain legitimacy. Firms with greater financial flexibility, such as those facing lower borrowing costs, are better positioned to meet stakeholder expectations through sustainability initiatives (Zumente & Bistrova, 2021). Agency theory (Jensen

& Meckling, 1976) focuses on conflicts between managers and shareholders. Managers may pursue personal interests at the expense of long-term firm value, including underinvestment in ESG activities. Institutional investors play an important monitoring role in mitigating agency problems by enforcing accountability and improving governance practices (Johnston et al., 2021). Lower cost of debt may also reduce agency costs by enabling firms to invest in governance-enhancing and sustainability-related activities.

Behavioral finance theory highlights the role of psychological biases in corporate decision-making. Managerial overconfidence, in particular, can lead to systematic errors in judgment, including overestimation of returns and underestimation of risks (Karki et al., 2024). In the ESG context, overconfident managers may either neglect sustainability risks or proactively pursue ESG initiatives due to excessive optimism regarding their outcomes. Signaling theory (Spence, 1973) explains how firms communicate unobservable quality to the market. ESG practices serve as signals of long-term orientation, ethical commitment, and risk management capability. Similarly, favorable financing conditions, such as lower cost of debt, may signal financial soundness and credibility, reinforcing firms' incentives to maintain strong ESG performance (J. Liu et al., 2023; X. Wang et al., 2025). Taken together, these theories provide a comprehensive framework suggesting that ESG performance is shaped by financial capacity (cost of debt), managerial cognition (overconfidence), and governance mechanisms (institutional ownership), particularly within emerging market contexts such as Indonesia.

Rather than reducing the framework to a single lens, this study deliberately retains stakeholder, agency, behavioral finance, and signaling theories, because the central objective is precisely to assess the influence of these complementary theoretical perspectives on ESG performance through their representative variables. Each theory maps onto one construct in the research model: stakeholder theory motivates ESG performance itself as the balancing of stakeholder claims and underpins the resource role of the cost of debt; agency theory motivates institutional shareholding as a monitoring mechanism; behavioral finance theory motivates managerial overconfidence as a cognitive determinant; and signaling theory explains how financing conditions and ESG practices convey unobservable quality to the

market. The theories are therefore not competing explanations of the same relationship but complementary accounts of different channels (resource capacity, governance, cognition, and signaling) that operate simultaneously. Removing any one theory would leave one of the model's variables without a theoretical anchor. This integrated, multi-theoretic design follows established corporate-finance ESG scholarship, which treats financial, governance, and behavioral explanations as jointly necessary rather than mutually exclusive (Gillan et al., 2021).

Ontologically, stakeholder theory treats the firm as a nexus of relationships among interdependent stakeholders rather than a mere instrument of shareholder wealth, so organizational reality is relational and plural. Epistemologically, stakeholder claims and firm legitimacy are knowable through firms' observable responses to stakeholder expectations, such as ESG disclosure and performance. Axiologically, it is value-laden, holding that balancing stakeholder interests is both instrumentally and normatively desirable. In this study, stakeholder theory anchors ESG performance as the dependent construct and frames the cost of debt as a resource condition affecting the firm's capacity to meet stakeholder expectations.

Agency theory assumes self-interested actors and an objective principal–agent relationship in which interests diverge. Epistemologically, agency costs and monitoring effects are knowable through observable governance mechanisms and their measurable effect on firm behavior. Axiologically, it is broadly instrumental, valuing arrangements that align managerial action with owner interests and reduce opportunism. Here, agency theory anchors institutional shareholding as an external monitoring mechanism expected to discipline managers toward stronger ESG engagement.

Behavioral finance theory rejects the assumption of fully rational actors and treats cognition as boundedly rational and bias prone. Epistemologically, biases such as overconfidence are inferred from systematic, observable deviations between managerial expectations and realized outcomes. Axiologically, it is largely descriptive, seeking to explain rather than prescribe behavior. In this study, behavioral finance theory anchors managerial overconfidence as a cognitive

determinant whose effect on ESG performance is theoretically ambiguous and therefore an empirical matter.

Signaling theory presumes information asymmetry between insiders and outsiders as an inherent feature of capital markets. Epistemologically, unobservable quality becomes knowable through costly, credible signals – here, ESG practices and favorable financing terms. Axiologically, it is instrumental, valuing signals that reduce asymmetry and improve market assessments. In this study, signaling theory complements the others by explaining how the cost of debt and ESG activity jointly communicate firm quality and risk to capital providers.

2.2. Cost of Debt and ESG Performance

The cost of debt reflects the borrowing expenses incurred by firms and serves as an indicator of perceived credit risk and financial health (Kaur et al., 2024). In recent years, the relationship between financing conditions and ESG performance has received increasing attention, with studies suggesting that access to affordable debt can significantly influence firms' ability to invest in sustainability initiatives.

A substantial body of literature indicates that lower borrowing costs and improved access to credit are associated with stronger ESG performance. For instance, Muchenje et al. (2025) find that deeper credit markets enhance ESG outcomes, particularly for financially constrained firms and those operating in emerging economies. Similarly, Leong & Yang (2021) show that financing constraints hinder corporate social responsibility (CSR), suggesting that high borrowing costs crowd out long-term sustainability investments. Evidence from policy-driven contexts further supports this view: green credit policies in China have been shown to improve ESG performance by reallocating financial resources toward environmentally responsible projects (Gao & Liu, 2023; Ma et al., 2024; Wu et al., 2025). Additionally, digital inclusive finance has been found to enhance ESG performance by easing financing frictions (Li & Pang, 2023).

However, the relationship is not universally positive. F. H. Liu et al. (2024) document that increased credit availability following bank deregulation in the United States led to a decline in CSR engagement, as firms relied less on ESG as a reputational signal. Similarly, (G. Jia & Bai, 2025) and Liao & Zhou (2024) highlight

that poorly designed credit policies or excessive financial pressure can weaken ESG performance, particularly among heavily polluting firms. These findings suggest that the impact of cost of debt on ESG is context-dependent and influenced by institutional environments, regulatory frameworks, and firm characteristics.

In emerging markets such as Indonesia, where ESG disclosure and enforcement are still evolving, the cost of debt may play a particularly important role in shaping ESG outcomes. Firms facing lower borrowing costs may have greater flexibility to allocate resources toward sustainability initiatives, while those with higher financing costs may prioritize short-term financial survival over long-term ESG investments.

H1: A higher cost of debt has a significant negative effect on ESG performance (is associated with higher ESG risk) among firms listed on the Indonesia Stock Exchange.

The directional form is justified because stakeholder and signaling arguments, together with the weight of prior evidence, predict that costlier debt constrains sustainability investment and reflects higher perceived risk (Apergis et al., 2022; Leong & Yang, 2021; Muchenje et al., 2025).

2.3. Managerial Overconfidence and ESG Performance

Managerial overconfidence is a behavioral bias in which executives overestimate their abilities and the prospects of their firms, leading to systematic deviations from rational decision-making. Within the ESG context, overconfidence has been shown to produce both positive and negative outcomes, resulting in mixed empirical findings.

Several studies report a negative relationship between managerial overconfidence and ESG performance. Lu et al. (2025) find that overconfident managers reduce environmental information disclosure, while Zhang et al. (2024) document a higher likelihood of environmental misconduct among firms led by overconfident CEOs. These findings align with agency theory and behavioral finance

perspectives, suggesting that overconfident managers may underestimate ESG risks or view sustainability investments as unnecessary costs (Ogundipe et al., 2025).

Conversely, other studies identify a positive relationship. (Yao Wang et al., 2023) demonstrate that overconfident executives may engage more actively in ESG initiatives due to higher risk tolerance and attention-seeking behavior. Similarly, Du et al. (2024) find that managerial overconfidence can enhance ESG performance, particularly when supported by institutional investors. Wen (2025) further shows that overconfidence may promote ESG engagement under certain economic conditions, indicating that behavioral biases can sometimes drive proactive sustainability strategies.

Importantly, the effect of managerial overconfidence is often contingent on contextual factors such as governance quality, institutional monitoring, and external shocks. Studies suggest that overconfidence may lead to negative ESG outcomes in weak governance environments but positive outcomes when aligned with strong monitoring mechanisms or strategic incentives (Abdelwahab et al., 2025; Choi et al., 2025). This highlights the heterogeneous and context-dependent nature of the relationship. In the Indonesian context, where managerial discretion may be relatively high due to evolving governance frameworks, the role of managerial overconfidence becomes particularly relevant in shaping ESG performance.

H2: Managerial overconfidence has a significant effect on ESG performance among firms listed on the Indonesia Stock Exchange.

A non-directional form is retained deliberately, because the theoretical and empirical literature is genuinely divided: overconfidence is predicted to weaken ESG through risk underestimation in some studies (Lu et al., 2025; Zhang et al., 2024) and to strengthen it through optimistic signaling in others (Du et al., 2024; Yao Wang et al., 2023; Wen, 2025). Testing these competing predictions two-tailed is therefore the more appropriate and conservative choice.

2.4. Institutional Investors' Shareholding and ESG Performance

Institutional investors play a critical role in corporate governance due to their substantial ownership stakes and ability to influence managerial decisions. Their

presence is often associated with improved monitoring, greater transparency, and enhanced ESG performance.

Empirical evidence largely supports a positive relationship between institutional ownership and ESG performance. Studies such as Yizhi Wang et al. (2023) and J. Liu et al. (2023) find that institutional investors significantly improve ESG outcomes by acting as monitors and information intermediaries. Similarly, Sun & Zhao (2024) and F. Jia et al. (2022) highlight that institutional ownership enhances ESG practices through active engagement and oversight mechanisms. These findings are consistent with agency theory, which emphasizes the role of institutional investors in reducing managerial opportunism.

However, the impact of institutional ownership is not uniform and depends on investor characteristics. Research distinguishes between active versus passive investors, domestic versus foreign institutions, and short-term versus long-term orientations. Active and long-term investors tend to exert stronger pressure for ESG improvements, while passive or short-term investors may have a weaker influence (Qasem et al., 2022). Yoo & Chang (2024) further show that foreign institutional investors are more effective in promoting ESG performance compared to domestic investors, reflecting differences in governance standards and expectations.

Recent studies also emphasize contextual factors, such as regulatory environments and firm characteristics. Institutional ownership tends to have a stronger impact on firms with weaker initial ESG performance or in settings with evolving disclosure frameworks (Cepêda et al., 2025). In emerging markets like Indonesia, where ownership concentration is high and governance systems are still developing, institutional investors may play a particularly important role in shaping ESG outcomes.

Overall, the literature suggests that institutional shareholding is a key governance mechanism influencing ESG performance, although its effectiveness depends on the type of institution and the broader institutional environment.

H3: A higher level of institutional shareholding has a significant positive effect on ESG performance (is associated with lower ESG risk) among firms listed on the Indonesia Stock Exchange.

The directional form is justified because agency theory and the preponderance of evidence indicate that institutional monitoring improves ESG outcomes (J. Liu et al., 2023; Sun & Zhao, 2024; Yizhi Wang et al., 2023).

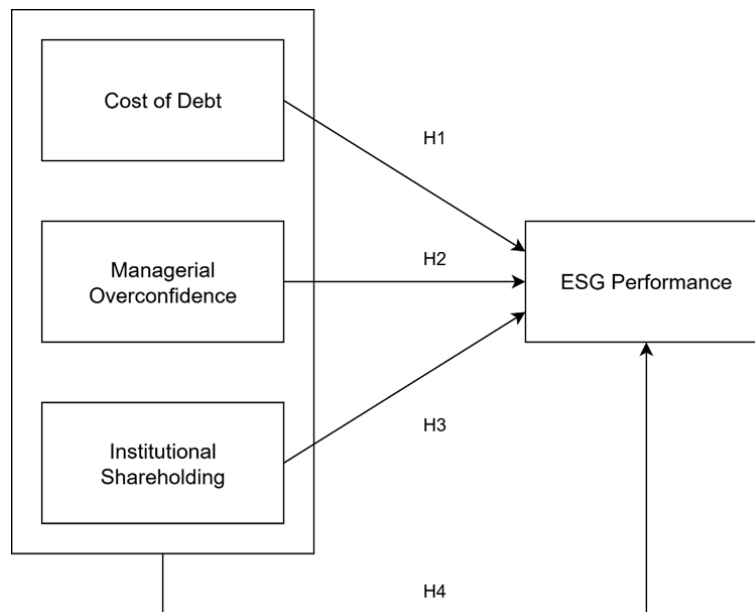


Figure 1. Conceptual Framework

3. METHODOLOGY

This study adopts a quantitative research design to examine the relationship between cost of debt, managerial overconfidence, institutional shareholding, and ESG performance among firms listed on the IDX. The quantitative approach is appropriate as the research aims to test hypotheses and analyze relationships between measurable variables using statistical techniques. The study is grounded in a positivist philosophy, which assumes that reality is objective and can be understood through empirical observation and measurement. Consistent with this perspective, a deductive approach is employed, whereby hypotheses derived from established theories are tested using observed data.

The population of this study consists of all firms listed on the IDX in 2024. However, due to data availability constraints, a purposive sampling technique is applied to select firms that meet specific criteria. The sample is limited to firms that have publicly available ESG scores, either from the IDX or recognized rating

agencies such as Morningstar Sustainalytics, that publish complete financial statements and annual reports for the year 2024, and that are not undergoing an initial public offering during the observation period. Based on these criteria, the final sample comprises 85 firms, ensuring both data reliability and sufficient observations for statistical analysis.

This study relies on secondary data obtained from publicly available sources. Financial data is collected from firms' annual reports and financial statements published on the IDX website, while ESG performance data is obtained from the IDX ESG database and/or Morningstar Sustainalytics. The collected data are compiled into a structured dataset and undergo a data cleaning process to ensure completeness, consistency, and accuracy prior to analysis.

The study includes one dependent variable and three independent variables, all measured using ratio-scale data to enable robust statistical analysis. ESG performance is measured using ESG scores or ratings provided by Morningstar Sustainalytics or the IDX, which capture firms' exposure to environmental, social, and governance risks. Cost of debt is calculated as the ratio of total interest expense to total debt, adjusted by the tax factor, reflecting the effective borrowing cost faced by firms. Managerial overconfidence is measured using the sales forecast optimism ratio, defined as the difference between forecasted sales and actual sales divided by actual sales, capturing the degree of managerial optimism or bias. Institutional shareholding is measured as the proportion of a firm's outstanding shares held by institutional investors.

Table 1. Operationalization of Variables

Variable (role)	Operational definition	Measurement proxy / formula	Supporting reference(s)
ESG Performance (dependent)	Firm exposure to and management of material ESG risks; higher score = greater unmanaged ESG risk = weaker ESG performance (ratio scale).	Morningstar Sustainalytics ESG Risk Rating (alternatively the IDX ESG score).	Morningstar Sustainalytics; Kurniawati & Michelle (2025)

Cost of Debt (independent)	Effective, tax-adjusted borrowing cost incurred by the firm; indicator of perceived credit risk and financial constraint.	$(\text{Total interest expense} / \text{total debt}) \times (1 - \text{tax rate})$.	Kaur et al. (2024); Apergis et al. (2022)
Managerial Overconfidence (independent)	Behavioral bias reflecting managerial optimism / systematic forecast bias in decision-making.	Sales-forecast optimism ratio = $(\text{forecasted sales} - \text{actual sales}) / \text{actual sales}$.	Karki et al. (2024); Zhang et al. (2024)
Institutional Shareholding (independent)	Ownership stake and monitoring capacity of institutional investors.	Proportion of outstanding shares held by institutional investors.	J. Liu et al. (2023); Jia et al. (2022)

ESG performance is proxied by the Morningstar Sustainalytics ESG Risk Rating, for which a higher score denotes greater unmanaged ESG risk and therefore weaker ESG performance. Accordingly, a positive coefficient indicates higher ESG risk (weaker performance) and a negative coefficient indicates lower ESG risk (stronger performance). All coefficient signs in this paper are interpreted on this basis.

To test the proposed hypotheses, this study employs a multiple linear regression model in which ESG performance is regressed on cost of debt, managerial overconfidence, and institutional shareholding. The model includes an intercept term and an error term to capture unexplained variation. This specification enables the assessment of both the individual and combined effects of the independent variables on ESG performance.

Data analysis is conducted using Statistical Package for the Social Sciences (SPSS) version 25 and proceeds in two main stages. First, descriptive statistics are used to summarize the characteristics of the data, including measures such as mean, minimum, maximum, and standard deviation, providing an overview of the distribution of each variable. Second, prior to regression analysis, classical assumption tests are conducted to ensure the validity of the model. These include normality testing to assess whether residuals are normally distributed, multicollinearity testing to examine the degree of correlation among independent variables using the Variance

Inflation Factor (VIF) and tolerance values, and heteroscedasticity testing to verify the constancy of residual variance across observations. Ensuring that these assumptions are satisfied is critical for obtaining unbiased and reliable regression estimates (Gunawan, 2025).

Following the diagnostic tests, inferential analysis is performed using multiple linear regression. The partial significance of each independent variable is assessed using t-tests, which determine whether individual regression coefficients differ significantly from zero. The simultaneous effect of all independent variables is evaluated using the F-test, which assesses the overall significance of the model. Additionally, the coefficient of determination (R^2 and adjusted R^2) is used to measure the proportion of variance in ESG performance explained by the model, with the adjusted R^2 providing a more accurate estimate by accounting for the number of predictors. Through this analytical framework, the study provides a systematic and rigorous evaluation of the determinants of ESG performance among Indonesian listed firms.

4. RESULT AND DISCUSSION

This section presents the empirical findings obtained from the statistical analysis of 85 firms listed on the IDX in 2024. The analysis follows a structured approach, beginning with descriptive statistics, followed by classical assumption testing, and concluding with multiple linear regression results used to test the proposed hypotheses.

Table 2. Descriptive Statistics of Observed Variables

	N	Min	Max	Mean	Std. Dev.
Cost of Debt	85	0.0597	0.1282	0.0898	0.0112
Managerial Overconfidence	85	-0.3800	0.2716	-0.0265	0.1190
Institutional Shareholding	85	0.2371	0.9947	0.8558	0.1780
ESG Risks	85	7.11	54.02	28.57	9.72

Source: Analyzed Data (Author, 2026)

The descriptive statistics provide an overview of the distribution and characteristics of the variables. The cost of debt (CD) ranges from 0.0597 to 0.1282, with a mean value of 0.0898 and a relatively low standard deviation of 0.0112, indicating that borrowing costs among Indonesian listed firms are homogeneous. Managerial overconfidence (MO), measured using the sales forecast optimism ratio, ranges from -0.3800 to 0.2716, with a mean of -0.0265 and a standard deviation of 0.1190. The slightly negative mean suggests that, on average, managers tend to exhibit mild conservatism in forecasting, although the relatively large dispersion indicates substantial variation across firms. Institutional shareholding (IS) exhibits a high average value of 0.8558, ranging from 0.2371 to 0.9947, reflecting the dominance of institutional investors in the ownership structure of Indonesian firms. ESG risk scores range from 7.11 to 54.02, with a mean of 28.57 and a standard deviation of 9.72, indicating moderate variation in ESG performance across the sample.

Prior to conducting regression analysis, classical assumption tests are performed to ensure the validity of the model. The normality test indicates that the residuals are normally distributed, as evidenced by a Kolmogorov–Smirnov significance value greater than 0.05 ($p=0.071$). The multicollinearity test shows that all independent variables have Variance Inflation Factor (VIF) values below the critical threshold of 10 and tolerance values above 0.1, suggesting the absence of multicollinearity issues. Furthermore, the heteroscedasticity test confirms that the variance of residuals is constant across observations, as indicated by non-significant Glejser test results. These findings confirm that the regression model satisfies the necessary assumptions for reliable estimation.

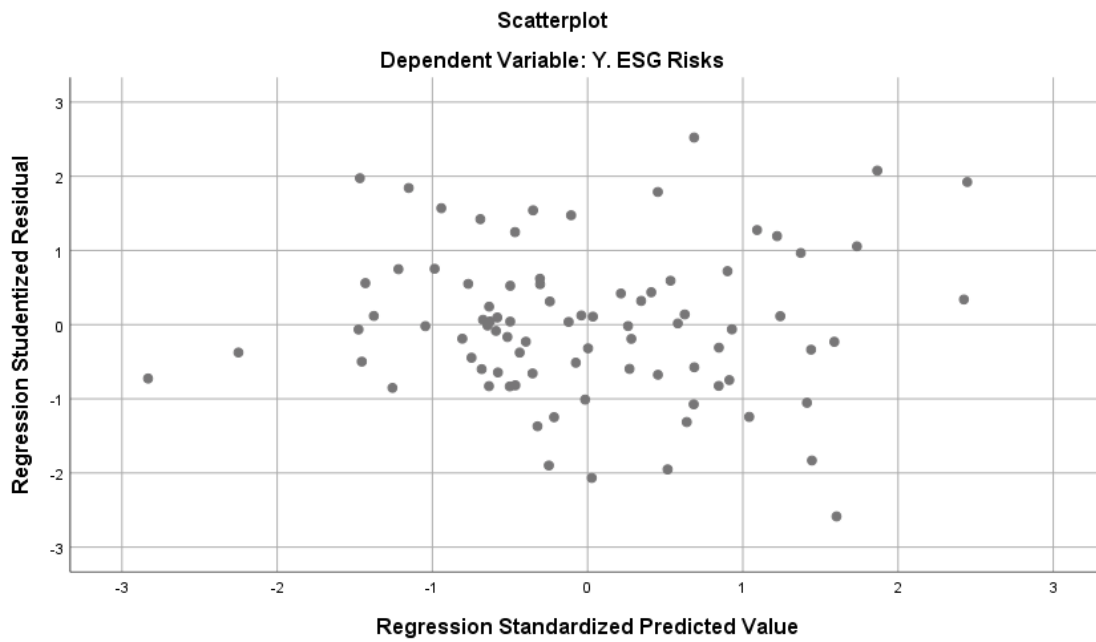


Figure 2. Heteroscedasticity Test

Table 1. Regression Coefficients and Collinearity Statistics

Model	Variable	Unstandardized B	Std. Error	Standardized Beta	t- value	Sig.	Tolerance	VIF
1	Constant	29.887	0.787	–	37.990	0.000	–	–
	Cost of Debt (X_1)	6.576	1.659	6.175	3.964	0.000	0.932	1.073
	Managerial Overconfidence (X_2)	-5.185	1.414	-4.870	-3.667	0.000	0.937	1.068
	Institutional Shareholding (X_3)	-2.392	0.965	-2.248	-2.479	0.015	0.993	1.007

Source: Analyzed Data (Author, 2026)

Because ESG performance is operationalized using the Morningstar Sustainability ESG Risk Rating – where a higher score denotes greater unmanaged ESG risk and therefore weaker ESG performance – the positive and significant coefficient on cost of debt ($B = 6.576$, $p < 0.001$) indicates that a higher cost of debt is associated with greater ESG risk, that is, with weaker ESG performance. This is consistent with H1 in its directional form. The estimate reflects the effect of the cost of debt exactly as measured (interest expense relative to total debt, tax-adjusted);

financial flexibility is offered only as a theoretical explanation for this association, not as a separately tested variable. Substantively, firms facing costlier debt carry higher ESG risk, consistent with evidence that financing constraints crowd out sustainability investment (Leong & Yang, 2021; Muchenje et al., 2025), while contrasting bank-deregulation evidence (F. H. Liu et al., 2024) underscores that this relationship is conditioned by the institutional environment.

The coefficient on managerial overconfidence is negative and significant ($B = -5.185$, $p < 0.001$). Given that the dependent variable is ESG risk, a negative coefficient means that higher managerial overconfidence is associated with lower ESG risk – that is, with stronger ESG performance – in this sample. This aligns with the proactive/optimistic strand of the literature, in which overconfident managers pursue ESG more actively owing to higher risk tolerance and signaling motives (Du et al., 2024; Yao Wang et al., 2023; Wen, 2025), rather than the strand predicting neglect of ESG. The effect remains theoretically context-dependent, but in the Indonesian sample its estimated direction is ESG-improving.

The coefficient on institutional shareholding is negative and significant ($B = -2.392$, $p = 0.015$). Because a higher ESG Risk score denotes weaker ESG performance, this negative coefficient means that greater institutional ownership is associated with lower ESG risk – that is, with stronger ESG performance. The earlier phrase “significant positive effect on ESG performance” should be read in exactly this sense: institutional investors improve ESG outcomes (they reduce ESG risk), consistent with agency theory and with prior evidence on institutional monitoring (J. Liu et al., 2023; Sun & Zhao, 2024; Yizhi Wang et al., 2023). The direction therefore supports H3: higher institutional shareholding strengthens ESG performance.

The simultaneous effect of cost of debt, managerial overconfidence, and institutional shareholding on ESG performance is examined using the F-test. The results indicate that the regression model is statistically significant at the 5% level, confirming that all independent variables jointly influence ESG performance. This finding supports the hypothesis and suggests that ESG outcomes cannot be explained by a single factor in isolation but rather by the combined interaction of financial conditions, managerial behavior, and governance structure. The significance of the F-test reinforces the theoretical framework adopted in this study,

where stakeholder theory, agency theory, behavioral finance, and signaling theory collectively explain how firms allocate resources, make strategic decisions, and respond to external pressures in shaping ESG performance.

In addition, the coefficient of determination (R^2) indicates that the model explains a substantial proportion of the variation in ESG performance among the sampled firms. The adjusted R^2 further confirms that the explanatory power of the model remains robust after accounting for the number of predictors, suggesting that the selected variables provide a meaningful representation of ESG determinants in the Indonesian context. However, as the R^2 does not reach unity, it also implies that other factors not included in the model, such as firm size, industry characteristics, regulatory pressure, or corporate culture, may also contribute to ESG performance. Nevertheless, the results demonstrate that cost of debt, managerial overconfidence, and institutional shareholding are key explanatory variables, providing strong empirical support for the multidimensional nature of ESG drivers in emerging markets.

Overall, the empirical findings confirm that the cost of debt, managerial overconfidence, and institutional shareholding are significant determinants of ESG performance among Indonesian listed firms. The results highlight the importance of integrating financial, behavioral, and governance perspectives in understanding corporate sustainability outcomes, particularly in emerging market contexts such as Indonesia.

5. CONCLUSION

The results show that a higher cost of debt is associated with greater ESG risk (weaker ESG performance), whereas higher managerial overconfidence and higher institutional shareholding are each associated with lower ESG risk (stronger ESG performance). In other words, financing constraints erode ESG performance, while proactive managerial optimism and institutional monitoring enhance it. Taken together, the three determinants significantly explain variation in ESG performance, confirming that corporate sustainability in Indonesia is shaped simultaneously by financial capacity, managerial cognition, and governance monitoring. Despite these

contributions, this study is subject to several limitations. First, the analysis is restricted to a single year cross-sectional dataset, which limits the ability to capture dynamic changes in ESG performance over time. Second, the study focuses only on firms with available ESG scores, potentially introducing sample bias. Third, the model does not incorporate other relevant variables such as firm size, industry effects, or regulatory pressures, which may also influence ESG outcomes. These limitations provide avenues for future research, particularly using longitudinal data, expanded variable sets, and comparative studies across different markets.

The findings carry concrete implications for three audiences. For corporate managers, lowering the effective cost of debt – through stronger creditworthiness and transparent disclosure – expands the financial capacity to invest in ESG, so treasury and sustainability strategies should be coordinated rather than managed in isolation. For institutional investors, the evidence that their ownership is associated with lower ESG risk supports active stewardship: engagement, voting, and disclosure demands are effective levers for improving investee ESG performance, particularly in Indonesia's concentrated-ownership market. For regulators and the IDX/OJK, the results reinforce the value of the sustainable-finance architecture already in place (POJK No. 51/2017, the Sustainable Finance Roadmap, the TKBI, and standardized ESG reporting) and suggest that strengthening ESG disclosure standards and lowering the cost of sustainable financing can further improve corporate ESG outcomes. Finally, because managerial overconfidence can cut both ways, boards should pair managerial latitude with robust monitoring so that optimism translates into genuine ESG improvement rather than unmanaged risk.

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