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The Influence of Environmental, Social and Governance (ESG) Components on Debt Costs in Manufacturing Companies in Indonesia

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Abstract:

This study aims to test and analyze the influence of environmental, social and governance components on debt costs. The subjects of the study were manufacturing sector companies listed on the IDX for the 2020-2023 period. This study uses a quantitative method using secondary data and processed using the SmartPLS application. The results of this study indicate that environmental, social and governance do not have a significant effect on debt costs. This study contributes both academically and practically. From an academic perspective, this study serves as a foundation for further research on environmental, social, governance and debt costs. From a practical perspective, companies have the opportunity to improve the quality and credibility of their corporate sustainability reports.

Keywords: *Cost of Debt, Environmental, ESG, Governance, Social*

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1. Introduction

Companies require funding sources to operate, which may come from both internal and external origins. Internal funds typically arise from operational activities, such as retained earnings. Meanwhile, external funding sources are obtained from third parties, such as debt and equity. Debt financing results in the obligation to pay interest to creditors. The cost of debt represents the interest rate expected by creditors as a return on their lending (Ayem & Kinait, 2021). Determinants of debt cost can be broadly classified into two categories: internal company factors and external market conditions.

As an example of an external factor, the market interest rate—such as the Prime Lending Rate (Suku Bunga Dasar Kredit or SBDK) published by banks—can serve as a benchmark, even though the actual cost of debt may be higher due to economic conditions, banks' profit targets, and funding costs. Disclosure of information is one of the internal factors that companies must consider in determining the cost of debt. Environmental, Social, and Governance (ESG) reports are a key element of corporate disclosure practices.

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Sustainability disclosure has become a major focus for listed companies since the Global Reporting Initiative (GRI) was introduced in 2001 (Sharma et al., 2020). The urgency of this issue is further highlighted in the WEF Global Risks Report (2023), which identifies six of the ten most severe global risks in the coming decade as environmental in nature. In Indonesia, Financial Services Authority Regulation (POJK) No. 51/POJK.02/2017 mandates sustainability reporting starting in 2017.

In relation to the cost of debt, ESG scores can be used as a proxy for default risk. These scores provide insights that may not be captured by conventional financial metrics (P. M. Clarkson et al., 2011). As such, creditors—particularly regulated institutions such as banks—should take into account ESG-related risks that are not reflected in standard financial risk measures (Eliwa et al., 2021). A lower perceived risk, not visible in conventional metrics, could lead to lower borrowing costs for companies with higher ESG scores. Thus, ESG scores may capture valuable risks otherwise undetected by traditional metrics, offering a more accurate picture of a company's internal conditions (Alves & Meneses, 2024).

High interest rates pose a major constraint for companies seeking loans, especially in an increasingly competitive global market. Hence, innovation and operational efficiency remain top priorities for companies. The following is data on Indonesia's central bank policy interest rates over the past five years:

Table 1. Average Bank Indonesia Interest Rates

Year	BI Rate
2020	4.25%
2021	3.52%
2022	4.00%
2023	5.81%
2024	6.10%

Source: BPS Indonesia

According to the recorded data, the Bank Indonesia benchmark rate has fluctuated over the past five years. In 2020, the average rate stood at 4.25%, which dropped to 3.52% in 2021 due to the impact of the COVID-19 pandemic. However, the rate began to rise again in 2022, reaching 4%, 5.81% in 2023, and 6.10% in 2024. The increase in interest rates has prompted the government to provide financial support for companies that focus on ESG factors.

The Financial Services Authority (OJK) has addressed this in technical guidelines for banks implementing POJK No. 51/POJK.03/2017 on sustainable finance for financial institutions, issuers, and public companies. The regulation emphasizes that projects meeting sustainability criteria—such as resource efficiency, environmental protection, and social equity—will be prioritized in financing decisions (OJK, 2018). This study provides new empirical evidence and seeks to clarify uncertainties, as it represents an initial exploration and extension of previous research in several ways. Past studies have primarily been conducted in developed countries, such as those by Alves & Meneses (2024), Eliwa et al. (2021), and Y. He et al. (2024). In regions such

as the European Union, sustainability reporting is already mandatory (Firmansyah & IRMAPA, 2023). This contrasts with the situation in developing countries, particularly Indonesia.

In Indonesia, the obligation to submit sustainability reports began with the issuance of POJK No. 51 in 2017. However, the regulation did not enforce immediate compliance that same year. The initial years were likely used for dissemination, the development of technical guidelines, and institutional preparation to understand and implement sustainable finance principles. Mandatory reporting for banks in Indonesia began in 2019, followed by public companies in 2020 (Financial Services Authority Regulation, 2017).

Nevertheless, implementation was delayed by the COVID-19 pandemic, with full enforcement starting in 2021. In the same year, a new regulation, SEOJK No. 16/SEOJK.04/2021, was introduced, requiring listed companies to publish annual sustainability reports to promote sustainable investment (Rudyanto, 2021). By the second year of full enforcement, 88% of listed companies in Indonesia had submitted sustainability reports for 2022 (PWC, 2023). The following year, among 951 companies listed on the Indonesia Stock Exchange (IDX), not all had published their reports, with compliance reaching 95% (Dayinta, 2023).

2. Theoretical Background

Stakeholder Theory

Stakeholder theory posits that the existence of a company depends on the support of its stakeholders, and thus, the company must strive to gain and maintain that support (Clarkson, 1995). Based on this theory, Environmental, Social, and Governance (ESG) disclosure plays a critical role in disseminating information to stakeholders, offering additional insights to support decision-making processes.

Signaling Theory

According to Spence (1973), signaling theory explains that parties with more information (i.e., the information holders) provide signals in the form of relevant information to those with less information (i.e., investors and creditors). This theory aims to reduce the information asymmetry between internal and external parties of a firm. Once the information is disclosed, market participants can interpret and analyze whether it signals good or bad news for investors and creditors (Morris, 1987). ESG disclosure acts as a signal that a company is committed not only to shareholders but also to the broader community in which it operates.

Agency Theory

Agency theory describes the interaction between owners as principals and managers as agents within a contractual relationship (Jensen & Meckling, 1976). The theory assumes the existence of information asymmetry that benefits the agent, potentially leading them to act in their own interests due to unequal access to information. Within this context, the debt cost hypothesis explains the relationship between creditors and

the company as an effort to mitigate agency problems between shareholders (principals) and managers (agents). Debt acts as a corporate governance mechanism that can reduce agency costs. It creates a relationship with creditors, who have a vested interest in the company's performance and debt repayment ability. Creditors may monitor firms through debt covenants, financial reports, and even intervene in cases of financial distress. This external oversight complements shareholder monitoring and helps reduce managerial opportunism (Panda & Leepsa, 2017).

Cost of Debt

The cost of debt refers to the expense a company incurs for utilizing borrowed funds. It represents the financial compensation expected by lenders for providing capital to the firm (Ashkhabi & Agustina, 2015). To calculate the cost of debt, researchers typically use an accounting measure: total interest expense over one year divided by the amount of interest-bearing debt. This method is also employed by Barrak et al. (2023), Eliwa et al. (2021), Francis et al. (2005), and Y. He et al. (2024). Therefore, the formula is:

Cost of Debt = (Interest Expense) / (Total Debt)

Environmental, Social, and Governance (ESG)

ESG is a non-financial assessment framework built on three key pillars: Environmental, Social, and Governance. This concept was first introduced in the United Nations Principles for Responsible Investment report, which encouraged investors to consider ESG scores as a central factor in their decision-making process (Yoon et al., 2018).

- **Environmental** measures a company's impact on the natural environment, including greenhouse gas emissions, renewable energy use, waste management, water usage, and resource conservation strategies.
- **Social** assesses how companies affect workers, communities, customers, and suppliers, covering areas such as human rights, employee health and safety, labor practices, diversity, and community engagement.
- **Governance** evaluates the corporate governance structure and practices, including transparency, board composition, shareholder rights, regulatory compliance, and business ethics.

This study uses an **aggregate ESG score** as the independent variable, combining assessments of environmental, social, and governance dimensions. The score is calculated in two steps: each disclosed item is scored as 1, and non-disclosed items as 0. The individual scores are summed to derive a total ESG score per firm (Haniffa & Cooke, 2005), based on Global Reporting Initiative (GRI) standards. The formula used is:

ESG Score = (ΣE + ΣS + ΣG by the Firm) / (Total E + S + G according to GRI)

The Effect of Aggregate ESG on Cost of Debt

Firms worldwide participate in ESG initiatives for various reasons, primarily to gain favorable treatment in financial markets (Cheng et al., 2014). Research shows that

firms with better ESG performance face fewer capital constraints (Braun et al., 2025; Cheng et al., 2014; Hong et al., 2012). High ESG performance is associated with stronger stakeholder engagement, reducing potential agency costs. Furthermore, companies that excel in ESG practices are more likely to publicly report their activities, increasing visibility and accountability. This enhanced transparency reduces information asymmetry between firms, investors, and creditors, thereby lowering perceived risk.

Limkriangkrai et al. (2017) found that Australian firms with higher ESG ratings also had higher leverage. Malik & Kashiramka (2024) and Zhang et al. (2024) found that ESG-active firms in India and China could significantly reduce their cost of debt. Thus, companies can use ESG disclosures to minimize debt costs by signaling their commitment to social responsibility and sustainable development (Lemma et al., 2022).

Creditors' ability to recognize factors influencing a borrower's repayment capacity is crucial for effective lending practices. Maintaining legitimacy and enhancing reputation are essential for corporate survival and sustainability, particularly in dynamic markets where reputation can significantly affect economic value. The credibility of ESG disclosures in lowering debt costs depends on whether such disclosures capture creditors' attention. If ESG information provides relevant non-financial measures, it can reduce the information asymmetry between firms and creditors by demonstrating broad-scale ESG commitment.

Previous studies mostly found a negative relationship between ESG and cost of debt (Agnese & Giacomini, 2023; Alves & Meneses, 2024; Andrieș & Sprincean, 2023; Arora & Sharma, 2022; Barrak et al., 2023; Crifo et al., 2017; Eliwa et al., 2021; L. He & Ismail, 2024; Y. He et al., 2024; W. Li et al., 2024; Malik & Kashiramka, 2024; Raimo et al., 2021; Rong & Kim, 2024; Shi et al., 2024). However, studies by Gigante & Manglaviti (2022) and Maaloul et al. (2021) found no significant effect. Others even reported positive effects, where excessive ESG investment harmed investor and creditor interests (Gonçalves et al., 2022; Guo et al., 2024; W. W. Li et al., 2024; Yang et al., 2024).

Given these research gaps, this study proposes the following hypothesis: *H1: Aggregate ESG has an effect on the cost of debt.*

The Impact of Individual ESG Dimensions

Studying individual ESG dimensions is crucial as it offers detailed insights into different aspects of a firm's environmental, social, and governance performance. However, prior studies have primarily focused on the aggregate ESG impact on the cost of debt (Velte, 2017). Analyzing each dimension separately allows for a more detailed understanding of how firms address key sustainability challenges and manage risks (Amel-Zadeh & Serafeim, 2018). This approach provides stakeholders with a comprehensive view of corporate sustainability efforts and highlights areas for improvement (Khan et al., 2016). It also enables investors, regulators, and other stakeholders to make informed decisions regarding long-term viability and ethical

practices (Friede et al., 2015). Additionally, focusing on individual ESG dimensions allows for targeted interventions to improve performance in specific areas, leading to more effective sustainability strategies and risk management practices (Grewal et al., 2016).

Therefore, the following additional hypotheses are proposed:
H2: Environmental (E) performance affects the cost of debt
H3: Social (S) performance affects the cost of debt
H4: Governance (G) performance affects the cost of debt

3. Methodology

This study employs a quantitative approach. The data used in this research are secondary data, which include the financial reports, annual reports, and sustainability reports of manufacturing companies listed with the Financial Services Authority (OJK) during the period 2020–2023. These data were obtained from the official website of the Indonesia Stock Exchange (IDX), www.idx.co.id, and the respective official websites of the companies.

The research focuses on a sample of 219 manufacturing companies from 2020 to 2023. The sampling method used is purposive sampling, with the following criteria: manufacturing companies registered with OJK, publishing financial and annual reports during the 2020–2023 period, and disclosing ESG-related items based on the Global Reporting Initiative (GRI) standards in either their annual reports or sustainability reports. Based on these criteria, a total of 426 firm-year observations were obtained as the research sample.

Hypothesis testing was conducted using the structural equation modeling (SEM) approach based on Partial Least Squares (PLS), developed by Wold (1982). The analysis technique involves two main stages: the measurement model test and the structural model test. The first hypothesis was tested using a second-order model, designed to evaluate the effect of aggregate ESG—a construct composed of environmental, social, and governance dimensions—on the cost of debt. This model provides insight into how each dimension contributes to the overall ESG construct, which in turn influences the cost of debt.

However, to understand the direct effect of each individual ESG dimension on the cost of debt—effects not assessed in the second-order model—the researcher employed a first-order model to test the second, third, and fourth hypotheses. This study also incorporates profitability and firm size as control variables.

4. Empirical Findings/Result

Results of Measurement Model Testing

Convergent Validity Test

Table 2 shows that **convergent validity is satisfied**, as all indicator loadings exceed 0.70. Additionally, to confirm the overall validity of the indicators, the **Average Variance Extracted (AVE)** values must also be evaluated. As shown in Table 3, all variables have AVE values greater than 0.50, indicating that convergent validity is met, and the analysis can proceed to the next stage.

Table 2. ***Outer Loadings***

Variable	Model Second Order	Model First Order
	Outer Loadings	Outer Loadings
COD	1,000	1,000
ESG Aggregate	1,000	-
Environmental	1,000	1,000
Governance	1,000	1,000
ROA	1,000	1,000
Size	1,000	1,000
Social	1,000	1,000

Source: Processed data by the researcher (2025)

Table 3. ***Average Variance Extracted*** **(AVE)**

Variable	Model Second Order	Model First Order
	AVE	AVE
COD	1,000	1,000
ESG Aggregate	1,000	-
Environmental	1,000	1,000
Governance	1,000	1,000
ROA	1,000	1,000
Size	1,000	1,000
Social	1,000	1,000

Source: Processed data by the researcher (2025)

Discriminant Validity Test

As shown in Table 4, all **HTMT (Heterotrait-Monotrait Ratio)** values are below 0.90, which confirms that all variables meet the criteria for **discriminant validity**.

Table 4. *Heterotrait-Monotrait* (HTMT)

Model Second Order						
	COD	ESG Aggregate	Environmental	Governance	ROA	Size
ESG Aggregate	0.024					
Environmental	0.047	0.871				
Social	0.006	0.883	0.671	0.424	0.103	0.430
Governance	0.047	0.637	0.393			
ROA	0.260	0.119	0.081	0.112		
Size	0.007	0.488	0.459	0.306	0.115	
Model First Order						
	COD	ESG Aggregate	Environmental	Governance	ROA	Size
Environmental	0.047	-				
Social	0.006	-	0.671	0.424	0.103	0.430
Governance	0.047	-	0.393			
ROA	0.260	-	0.081	0.112		
Size	0.007	-	0.459	0.306	0.115	

Source: Processed data by the researcher (2025)

Reliability Test

As shown in Table 5, **all constructs meet the reliability criteria**, with composite reliability values exceeding 0.70 and Cronbach's Alpha values above 0.60. Therefore, the research model is considered structurally sound, valid, reliable, and satisfactory.

Table 5. *Cronbach's Alpha dan Composite Reliability*

	Model Second Order		**Model First Order**	
	Cronbach's Alpha	***Composite Reliability***	***Cronbach's Alpha***	***Composite Reliability***
COD	1,000	1,000	1,000	1,000
ESG Aggregate	1,000	1,000	-	-
Environmental	1,000	1,000	1,000	1,000
Social	1,000	1,000	1,000	1,000
Governance	1,000	1,000	1,000	1,000
ROA	1,000	1,000	1,000	1,000
Size	1,000	1,000	1,000	1,000

Source: Processed data by the researcher (2025)

Results of Structural Model Testing

Multicollinearity Test

Table 6. Multicollinearity Test

	Model Second Order	**Model First Order**	
	VIF	**VIF**	**Conclusion**

ESG Aggregate > COD	1,320	-	*Non Multicollinearity*
Environmental > COD	-	1,977	*Non Multicollinearity*
Social > COD	-	1,275	*Non Multicollinearity*
Governance > COD	-	1,022	*Non Multicollinearity*
ROA > COD	1,019	1,337	*Non Multicollinearity*
Size > COD	1,319	1,974	*Non Multicollinearity*
Environmental > ESG Aggregate	1,866	-	*Non Multicollinearity*
Social > ESG Aggregate	1,924	-	*Non Multicollinearity*
Governance > ESG Aggregate	1,252	-	*Non Multicollinearity*

Source: Processed data by the researcher (2025)

All VIF values are below 5, indicating no multicollinearity issues among the variables in the model (Hair et al., 2018).

Predictive Relevance (Q^2)

Table 7. *Predictive Relevance*

	Model Second Order	**Model First Order**
	Q^2	**Q^2**
COD	0.059	0.052
ESG Aggregate	0.968	

Source: Processed data by the researcher (2025)

The Q^2 values of 0.059 (second-order) and 0.052 (first-order) indicate that the structural model has predictive relevance with relatively low prediction error.

Hypothesis Testing

In SmartPLS, hypothesis testing uses the **bootstrapping method** to reduce potential issues related to data non-normality (Hair et al., 2022). A hypothesis is considered supported if the **t-statistic exceeds 1.96**, which corresponds to a 95% confidence level (Kock, 2015).

Table 8. *Output Path Coefficient*

	Model Second Order				
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
ESG Aggregate -> COD	0.057	0.058	0.056	1.021	0.308
Environmental -> ESG Aggregate	0.456	0.456	0.014	33.519	0.000

Social -> ESG Aggregate	0.467	0.467	0.013	37.189	0.000
Governance -> ESG Aggregate	0.259	0.258	0.014	18.044	0.000
ROA -> COD	-0.267	-0.269	0.045	5.889	0.000
Size -> COD	-0.004	-0.000	0.052	0.083	0.934
Model First Order					
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Environmental -> COD	0.076	0.075	0.065	1.169	0.243
Social -> COD	-0.041	-0.038	0.074	0.548	0.584
Governance -> COD	0.069	0.069	0.051	1.361	0.174
ROA -> COD	-0.268	-0.274	0.047	5.761	0.000
Size -> COD	-0.015	-0.016	0.053	0.275	0.784

Source: Processed data by the researcher (2025)

In the second-order model, the analysis shows that aggregate ESG has a positive but not statistically significant effect on the cost of debt at the 5% significance level. Meanwhile, its constituent dimensions—Environmental, Social, and Governance—each have a positive and significant effect on aggregate ESG at the 5% level. ROA has a negative and significant effect on the cost of debt, while firm size has a negative but insignificant effect.

In the first-order model, the Environmental dimension has a positive but insignificant effect on the cost of debt. The Social and Governance dimensions show negative but insignificant effects. ROA again has a negative and significant impact, while firm size remains negative and insignificant at the 5% level.

5. Discussion

The Effect of Aggregate ESG on Cost of Debt

The analysis reveals that aggregate ESG has no significant effect on the cost of debt, thereby rejecting the first hypothesis (H1). This result is consistent with the findings of Gigante & Manglaviti (2022), Maaloul et al. (2021), and W. W. Li et al. (2024). The finding is supported by data showing that the average aggregate ESG score was 0.407, with 171 out of 205 companies (or 83%) scoring below the average. A below-average ESG score indicates suboptimal sustainability performance, potentially increasing risk and operational difficulties compared to firms with higher ESG scores. This reflects weak management effectiveness in addressing ESG-related risks and seizing ESG-driven opportunities.

ESG inefficiency in Indonesia is primarily caused by creditors' preference for traditional financial indicators, which are more reflective of a firm's short-term financial performance—unlike the long-term implications of ESG factors (Narulita et al., 2025). Creditors' primary responsibility is to assess a borrower's ability to repay within the agreed timeframe. Thus, financial ratios such as liquidity, solvency, and profitability are deemed more accurate indicators of creditworthiness. In contrast, ESG performance is more often associated with long-term risks and opportunities, such as corporate reputation, operational sustainability, and attractiveness to socially responsible investors. Although these factors may eventually affect financial performance, their impact may not manifest within the loan period. This study aligns with market inefficiency theory, which posits that markets have yet to fully integrate ESG efforts into pricing mechanisms. The potential of ESG as a holistic risk assessment tool has yet to be maximally realized (Costola & Vozian, 2025).

Furthermore, ESG implementation is hindered by the need for substantial upfront investment, which negatively impacts financial performance—especially during and after the COVID-19 pandemic. This financial strain raises creditors' concerns regarding borrowers' ability to repay loans.

The Effect of Environmental Factors on Cost of Debt

The results show that environmental factors do not have a significant effect on the company's cost of debt, thus rejecting the second hypothesis (H2). This finding is consistent with Agnese & Giacomini (2023), Hoepner et al. (2016), and Rong & Kim (2024). Data shows that the average environmental score was 0.406, with 153 out of 205 companies (75%) scoring below the average. Although companies have started disclosing environmental issues using GRI 300 standards (e.g., GRI 301—materials, GRI 302—energy, GRI 303—water and effluents, GRI 305—emissions, and GRI 308—supplier environmental assessment), disclosures related to SDG 14 (Life Below Water), such as waste (GRI 306) and biodiversity (GRI 304), remain limited.

This suggests that even though companies acknowledge their environmental impact, disclosure priorities may not adequately address marine and aquatic concerns. It may also imply that compliance with environmental reporting regulations since 2017 has been more about projecting a "green" image than genuine commitment to holistic sustainability performance (Gutiérrez-Ponce & Wibowo, 2023).

Companies lacking transparency in disclosing specific environmental indicators—such as waste and biodiversity—introduce uncertainty for creditors. This uncertainty increases credit risk because lenders lack a complete picture of potential environmental liabilities or future issues.

The Effect of Social Factors on Cost of Debt

The results indicate that social factors have no significant effect on the cost of debt, thereby rejecting the third hypothesis (H3). This is consistent with the findings of Agnese & Giacomini (2023) and Zhao & Zhang (2024). Data shows that the average social score was 0.379, with 158 out of 205 companies (77%) scoring below the average. Out of the 17 social categories in GRI 400 standards, companies tend to

disclose only a few indicators, such as GRI 401 (employment), GRI 403 (occupational health and safety), GRI 404 (training and education), GRI 405 (diversity and equal opportunity), and GRI 406 (non-discrimination).

This limited disclosure can be attributed to Indonesia's status as a developing country, where both the government and companies focus on enhancing community welfare through education and health—key drivers of social well-being and economic development (Gutiérrez-Ponce & Wibowo, 2023).

Although these indicators are important, failing to report on the remaining GRI 400 items means companies do not present a full picture of their social impact. Selective disclosure may be seen as an attempt to polish corporate image rather than make a substantive impact. This can undermine a company's credibility in the eyes of creditors, consumers, and the public.

The Effect of Governance on Cost of Debt

The results reveal that governance does not significantly affect the cost of debt, thus rejecting the fourth hypothesis (H4). This result is in line with Y. He et al. (2024) and L. Wang & Yang (2024). Data indicates that the average governance score was 0.548, with 162 out of 205 companies (79%) scoring below the average.

This non-significant relationship may be explained by the regulatory and compliance landscape in Indonesia, particularly following the enactment of POJK No. 51 of 2017. According to Suhartini et al. (2024), regulation-driven compliance (such as with POJK 51/2017) tends to be uniform across industries, leading to minimal differentiation in governance metrics, as most firms strive to meet the same standards. Consequently, creditors may prioritize demonstrable financial performance as a key indicator of effective risk management, rather than governance structure alone.

Low governance scores may also be attributed to an overemphasis on economic performance in disclosures. This could be due to pressure from stakeholders such as regulators and investors, who tend to value economic aspects more highly. In Indonesia, many stakeholders still prefer financial information over environmental and social disclosures (Megawati & Pratama, 2024).

6. Conclusions

Based on the analysis results, this study concludes that aggregate ESG and its pillars—environmental, social, and governance—do not have a significant effect on the cost of debt in Indonesia. The findings highlight that most companies still score below average in all ESG dimensions, indicating suboptimal sustainability performance. This condition may reflect the lack of strong ESG integration in corporate strategies and the limited relevance of ESG factors in creditors' decision-making processes, which remain focused on traditional financial metrics.

For future research, scholars are encouraged to explore longitudinal studies that capture the long-term effects of ESG performance on financial outcomes, including cost of capital, particularly in different economic cycles. In addition, further investigation could include the role of ESG assurance quality, sectoral differences, and stakeholder pressure as moderating variables. Examining qualitative aspects of ESG disclosure, such as the depth and credibility of the information provided, could also provide richer insights into how ESG influences financial perceptions and risks.

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