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The relationship between ESG, financial performance, and cost of debt: The role of independent assurance

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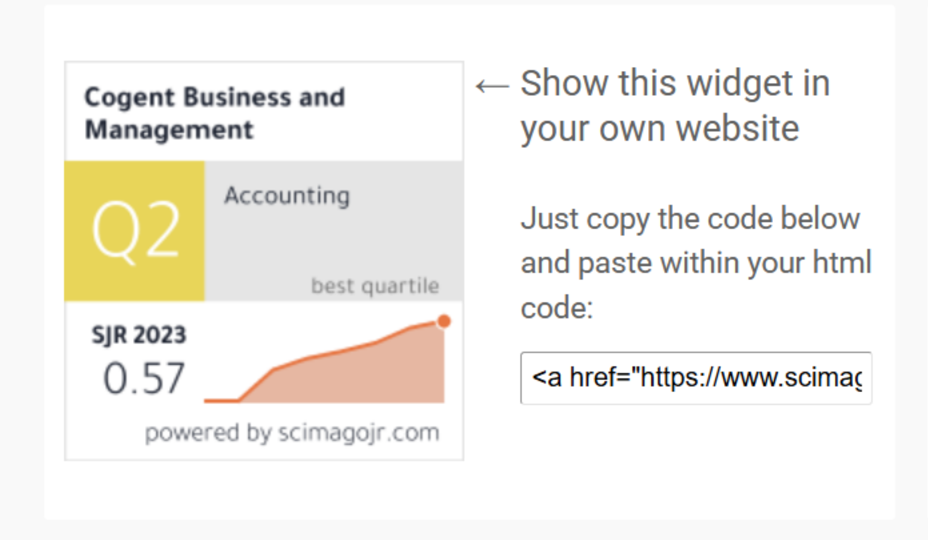

No.	Keterangan	Tanggal	Halaman
1.	Bukti Pengiriman (submit) artikel ke Jurnal	16 Juni 2024	2
2	Artikel yang disubmit		3
3.	Notifikasi submit diterima dari editor	16 Juni 2024	31
4.	Hasil cek dari editor dan keterangan bahwa manuskrip dikirim ke reviewers	24 Juni 2024	32
5.	Notifikasi hasil review (komentar substansif dari reviewer jurnal	25 September 2024	33
6.	Response penulis terhadap review (bukti submit lagi dengan revisi menanggapi review)	28 September 2024	37
7.	Artikel yang sudah revisi		42
8.	Tanggapan *reviewers* terhadap revisi manuskrip yang telah dikirim	27 November 2024	72
9.	Notifikasi *accepted*	29 November 2024	74

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ARTIKEL YANG DISUBMIT

A model for the moderating effect of independent assurance on the relationship between ESG, financial performance, and cost of debt

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ABSTRACT

This study aims to analyze the moderating model in the relationship between disclosure of information about environmental, social, and governance (ESG) dimensions, financial performance and cost of debt. This study contributes by adding independent assurance as a moderating variable in the research model to explain inconsistencies in previous research. Stakeholder trust in the quality of ESG information in sustainability accounting reports depends on whether there is independent assurance regarding the report. This study also contributes to accounting research by testing the moderation model in the COVID-19 pandemic period where the empirical evidence from previous research has not been conclusive. The research sample comprises 253 firm-years during the 2020-2022 period. Hypothesis testing was carried out using partial least squares-structural equation modeling (PLS-SEM). The results show that the implementation of ESG, as disclosed in sustainability reporting, has a positive effect on companies in terms of improving financial performance and reducing the cost of debt. The empirical evidence also shows that independent assurance has an important role for directors

in order that they feel the ESG information in risk assessment is credible meaning that the negative effect of ESG on the cost of debt is stronger if there is assurance.

Keywords: ESG, financial performance, cost of debt, independent assurance, sustainability accounting reporting

1. Introduction

The issue of sustainability has become a strategic issue for business entities nowadays due to various problems such as global warming, environmental damage, pollution, the energy crisis, and others. One of the responses to this was the "Who Cares Wins (WCW)" report in 2004 by the UN Secretary-General and the UN Global Compact which has significantly increased the popularity of the environmental, social, and governance (ESG) concept. Business entities are now increasingly aware of the importance of ESG to ensure ethical and sustainable practices in their operations, so that they can achieve goals not only in terms of profit, but also for the people and the planet (Alduais, 2023; Al Amosh and Khatib, 2021; Linnenluecke, 2022). The implementation of ESG is expected to encourage the integration of environmental awareness and social responsibility initiatives with good governance so that it can mitigate potential risks and increase profitability and company value (Malik and Kashiramka, 2024; Firmansyah et al., 2023; Alduais, 2023; Alsayegh et al., 2020).

Companies that implement ESG well can ensure shareholder value is created by improving financial performance and management quality and minimizing risks (Zumente and Bistrova, 2021), and this can give a positive impression to creditors in making financing decisions and providing benefit to the company in the capital market (Feng and Wu, 2021). The general public, investors, financial institutions, and non-financial institutions place greater emphasis on the importance of ESG disclosure by companies as one of the key indicators for assessing the company’s transparency about its information (Firmansyah et al., 2023). Stakeholders can use ESG disclosures to seek information about a company’s opportunities and risks (Almeyda and Darmansya, 2019).

The development of the ESG concept has increased interest in academic research about the relationship between ESG and the cost of capital (Li et al., 2024; Malik and Kashiramka, 2024; Wang et al., 2021; Yu et al., 2021; Zerbib, 2019) and financial performance (Malik and Kashiramka, 2024; Chen et al., 2023; Mittal et al. 2008; Nollet et al., 2016). However, some empirical evidence from previous research regarding the relationship between these three variables is not completely consistent. For example, the research results of Raimo et al. (2021), Houqe et al. (2020), Arora and Sharma (2022), and Priem and Gabellone (2024) show that companies that have a higher ESG score tend to have a lower cost of debt or a negative relationship. On the other hand, some previous research had different findings, namely that there are positive relationships (Malik and Kashiramka, 2024; Li et al., 2024) and insignificant relationships (Gigante and Manglaviti, 2022).

Likewise, empirical evidence from previous research on the relationship between ESG scores and financial performance is still inconsistent and still ambiguous (Yang et al., 2023). There are studies that find positive relationships (Malik and Kashiramka, 2024), negative relationship (Nguyen et al., 2022) and insignificant relationships (Firmansyah et al., 2023; Atan, 2016). The different results from previous studies present a research gap for this research. The inconsistency of these findings indicates the possible need to add a moderating variable to the research model (Hair et al., 2021; Baron and Kenny, 1986).

This study adds independent assurance as a moderating variable in the research model to explain the inconsistencies in the previous research. Stakeholder trust in the quality of ESG information in sustainability reports depends, among other things, on whether there is independent assurance regarding the report. The increase in the number of sustainability reports has not been accompanied by an increase in public trust due to a lack of consistency and completeness of information. For several years, the disclosure of information has been unclear and stakeholders have demanded reports that have been assured because they feel that the information tends to only convey good things and does not reflect the full truth about implementation of ESG (Martínez-Ferrero and García-Sánchez, 2017a). Therefore, currently independent assurance has become relevant and has developed rapidly in various countries (Martínez-Ferrero and García-Sánchez, 2017b; Martínez-Ferrero and García-Sánchez; 2018).

Apart from that, analysis of the impact of ESG during the COVID 19 pandemic period is also important to research because the findings are not yet conclusive (Malik and Kashiramka, 2024). Some empirical evidence shows that ESG has no effect on financial performance, cost of debt and company value (Malik and Kashiramka, 2024; Lu and Khan, 2023; Tanjung, 2023; Lin et al., 2023). The positive effects of ESG implementation and disclosure may decrease due to economic uncertainty and market volatility during the COVID 19 pandemic period (Malik and Kashiramka, 2024).

Although independent assurance practices in sustainability reporting have emerged and developed rapidly in developed countries, in developing countries it is still in the formation stage and lags behind developed countries. Independent assurance is a mechanism for assessing the quality, reliability, and transparency of sustainability reports. The existence of external assurance will improve user perceptions regarding the credibility of sustainability reports (Fernandez-Feijoo et al., 2016). Therefore, assurance statements tend to be used to enhance the credibility and reliability of social and environmental information and to provide greater confidence in the information reported. Because the information disclosed by the company may differ from the information requested by stakeholders, the assurance process can protect the interests of uninformed stakeholders. Independent assurance—which has similarities to the audit of financial statements by public accountants—is a valuable tool for establishing credibility and is useful for overcoming problems of information asymmetry (Martínez-Ferrero and García-Sánchez, 2017b). Research on independent assurance is still very limited (García-Sánchez, 2020; García-Sánchez et al., 2019; Martínez-Ferrero et al., 2018).

This research contributes by explaining the inconsistency of previous research by adding an important variable that has not yet been widely explored in accounting research, namely independent assurance for sustainability reports as a medium for ESG information. This research argues that the effect of ESG on the cost of debt and financial performance depends on independent assurance. Stakeholder trust, which then manifests in financial performance and cost of debt, depends on the credibility of ESG information. If there is assurance of the ESG information in sustainability reports, the positive (negative) effect of ESG on financial performance and the cost of debt will be even greater.

The research also contributes to the novelty of accounting research, namely testing the moderation model during the COVID-19 pandemic period where the empirical evidence from previous research has not been conclusive (Malik and Kashiramka, 2024). This study also contributes to the research on ESG in developing countries by focusing on Indonesia where ESG implementation is still not optimal; this was indicated by the results of the 2019 national ESG survey conducted by the Center for Risk Management and Sustainability. Likewise, research findings by Loh and Thomas (2018) in a paper called "Sustainability Reporting in ASEAN Countries" showed that Indonesia had the lowest score (40.6%) compared to other member countries. Companies that are aware of ESG can ensure that shareholder value is created by improving financial performance and management quality and minimizing risks (Zumente and Bistrova, 2021), and this can give a positive impression to creditors in making financing decisions and providing benefit to the company in the capital market (Feng and Wu, 2021). With the large benefits generated by ESG disclosure, it is natural for companies to pay more attention to their disclosure. However, this is unfortunate for Indonesia because its implementation is not yet optimal. This study also contributes by examining the practice of independent assurance in ESG implementation.

2. Literature review and hypothesis development

This study uses several theories—namely, the legitimacy, agency, and signaling theories—to develop a model of the relationship between ESG, cost of debt, and financial performance which is moderated by independent assurance. Legitimacy theory argues that an entity like an organization or company carries out actions that are considered to be in accordance with what is desired by the system of norms, values, and beliefs (Suchman, 1995). Legitimacy gaps can arise if the values embodied by a company are different from the values that exist in society. This can affect the company's sustainability or its ability to survive. Legitimacy theory is based on the fact that companies can reduce the legitimacy gap and increase their financial performance by disclosing information about their ESG dimensions (Amarna et al., 2024). In practice, the integration of sustainability and financial information can improve a company's management performance and business operations (Boiral, 2013).

The agency theory emphasizes agency problems and the existence of information asymmetry between principals (lenders) and agents (company managers) (Jensen and Meckling, 1976). According to agency theory (Jensen and Meckling, 1976), principals lend money to agents with the expectation of getting back the money that has been lent along with the interest that offsets the risk of providing the capital. The agency theory implies that agents have more complete information about the company than principals, which results in the emergence of information asymmetry (Gerwanski, 2020). Therefore, lenders will reward companies that offer higher transparency over companies that offer less transparency. Therefore, information asymmetry can be reduced by companies providing disclosures to external non-financial parties, such as ESG disclosures, which can be a communication tool to provide information that is not included in financial disclosures (Raimo et al., 2021).

According to the signaling theory, ESG disclosure is believed to be able to provide a positive signal to all stakeholders because it shows that a company, in its operational activities, is not solely focused on profit but instead prioritizes the values, norms, and social values that exist in the community where it operates. ESG disclosure is expected to be a social investment to satisfy stakeholders that will contribute to the value of a company. A company's sustainability also has an impact on its growth (Buallay and Hamdan, 2019). The purpose of ESG disclosure is to convince outside parties about a company's performance or capabilities which are different from other companies in an industry. Signals are given so that investors and analysts can provide an assessment based on the actual condition of a company and not as low as a company whose performance is poor because it can be detrimental to managers (Melinda and Wardhani, 2020). Voluntary disclosure has relevance to company value and cost of equity. Investors can receive signals from companies through ESG disclosures that address concerns about environmental, social, and corporate governance practices. As a positive signal for investors, a company will do its best to provide information about its business performance.

Buallay and Hamdan (2019) explain that the application of the environmental, social, and governance dimensions that constitute the ESG concept will enable entities to minimize the level of business risk will enable entities to minimize the level of business risk arising from operations related to the surrounding social environment. Disclosure about the environmental component of ESG discusses how a company's energy use, waste, use of clean water, environmentally friendly products, conservation of natural resources, behavior that affects flora and fauna, and policies related to the environment; this can be used by stakeholders to evaluate the company's operational entities. Commitment and integrity with regard to the environmental disclosure that a company makes has a positive impact on both the company and its surrounding environment which has an impact on the sustainability of its business operations. When stakeholders consider that the business has a high level of sustainability, this will also attract their attention because they will hope that it can be translated into good financial performance, including increasing product sales.

By using the legitimacy theory, an argument can be made that companies that implement ESG practices are able to perform well and build a good image in the eyes of the community. A company's commitment and seriousness towards various aspects of sustainability as demonstrated by ESG performance can be seen and assessed positively by stakeholders. Companies are increasingly aware that their connection with the communities in which they operate can influence the running of their business. This accords with the legitimacy theory, which emphasizes that companies have a contractual obligation with their social environment to act according to the principles of justice, as well as how management responds to various related groups to gain legitimacy for their actions. A company’s disclosures regarding its social and environmental responsibilities will be widely known by various stakeholders such as customers and investors, which has the potential to increase financial performance substantially (Al Amosh et al., 2023).

ESG disclosure from a social perspective is also an important factor in improving a company's financial performance. ESG social criteria show more of the company's external relationships, namely direct or indirect relationships between the company and the community, suppliers, buyers, and other entities. Social disclosure also discusses how companies deal with human rights policies and business ethics policies. As well as other policies related to social issues. When a company is able to address and manage its social disclosure well, it will certainly affect its image and performance. Meanwhile, ESG disclosure has a corporate governance component that focuses on company management from an internal perspective. This disclosure discusses how the company manages its activities such as policies, standards, corporate culture, audit processes, and compliance, among other things that need to be considered. When a company's disclosures related to governance are transparent, in accordance with regulations and codes of ethics, this becomes a positive value that can increase investor confidence to invest their capital in the company and cause consumers to buy its products. Several studies have provided empirical evidence that ESG has a positive impact on corporate financial performance (Malik and Kashiramka, 2024; Chen et al., 2023; Lu and Khan, 2023; Wu et al., 2022). Based on these arguments, the following research hypothesis is proposed:

H_1: ESG disclosure has a positive effect on financial performance

Cost of debt is a cost that must be paid by the company to creditors which includes interest on the money borrowed. The cost of debt is influenced by several factors, namely the prevailing interest rates in the market, and credit risk which is the risk that the company will not be able to fulfill its obligations to pay back the principal as well as the interest that is payable. ESG disclosure is an important consideration for external parties, including creditors, when assessing a company's reputation and risks (Almeyda and Darmansya, 2019). In addition, companies making ESG disclosures can help them overcome long-term strategic problems that make it easier for them to achieve their goals (Jeanice and Kim, 2023).

A company with better ESG practices has lower business risk so they are expected to reduce capital costs originating from debt because the cost of interest is based on information about the company's future risk options. Ge and Liu (2015) examine how corporate social responsibility (CSR) performance is associated with the costs of issuing new bonds. They find that better CSR performance is associated with stronger credit ratings. Chava (2014) finds that companies with some environmental problems have to pay much higher interest rates on their loans. In general, banks may not have a CSR compliance agenda as a criterion for approving loans. However, banks are interested in assessing a company's repayment capabilities. Goss and Roberts (2011) state that companies with higher CSR compliance scores pay lower bank fees compared to companies with lower CSR scores. Consistent with the previous argument, banks also want to lend money to companies that have a higher awareness of CSR activities because such compliance is likely to improve the company's reputation resulting in higher profitability and guaranteed loan repayment ((Malik and Kashiramka, 2024; Yeh et al., 2020). The risk mitigation perspective argues that CSR investments can reduce risks ((Malik and Kashiramka, 2024); thus, creditors are more willing to provide more lenient loan terms to socially responsible companies. Evidence from capital markets shows that a better CSR performance can lower the cost of debt (Yeh et al., 2020).

Apart from the risk of default, the increasing demand for companies to engage in ESG practices also increases lenders' awareness of the risks to a company’s reputation. ESG practices can reduce information asymmetry between lenders and borrowers or companies or organizations which will ultimately be useful for reducing errors in decision-making caused by a lack of information provided. Companies that implement higher quality ESG practices will reflect higher management quality, a better reputation and lower default risk (Oikonomou et al., 2012).

The agency and legitimacy theories indicate that ESG practices will offer non-financial information regarding a company's business operations which can be used by external parties, both from the general public and lenders, to evaluate company risks. Good ESG practices will lead to opinions of external parties that view the company as having fewer risks, thereby reducing the company's cost of debt. This is in accordance with previous research which finds that ESG practices have a negative influence on a company's cost of debt (Malik and Kashiramka, 2024; Eliwa et al., 2021; Li, et al., 2024; Raimo et al., 2021). Based on this, the hypothesis that will be used in this research is as follows:

H_2: ESG disclosure has a negative effect on a company's cost of debt.

Companies can engage in disclosure of their ESG practices by publishing sustainability reports to improve the company's reputation in the eyes of external parties. The urgency and importance of ESG disclosure practices for external parties in making their decisions stimulates the need for sustainability reports to be assured by independent external parties. Companies that use independent assurance services will increase their credibility, value, and reputation and ensure that the non-financial information they disclose is accurate and in accordance with applicable standards. In order to develop and maintain accountability for information about ESG implementation, the role of external assurance becomes crucial to ensure that non-financial information is accurate and in accordance with reporting standards (Perego and Kolk, 2012; Simnett et al., 2009). Therefore, a company using external assurance will guarantee the accuracy of ESG information disclosure which will then strengthen the negative relationship between ESG disclosure and it's cost of debt.

According to KPMG (2015), the use of independent assurance for corporate CSR reports has more than doubled from 30% in 2005 to 63% in 2015 (100 largest companies from 45 countries). These data prove that assurance of CSR reports is considered important to increase the credibility and reliability of those reports, such as external audits for financial reporting (Liao et al., 2018). However, unlike financial reports, CSR assurance is voluntary and not mandatory in the context of sustainable or integrated reporting (Maroun, 2020). There are various benefits of assurance that have been mentioned in empirical studies. Among them is one by Kim et al. (2019) who find that there is an important role of CSR information assurance services in the relationship between CSR performance and shareholder value. Therefore, companies whose CSR performance uses external guarantees achieve better financial performance than other companies that do not use guarantees for their CSR performance. Birkey et al. (2016) find that assurance in reports is significantly related to environmental reputation.

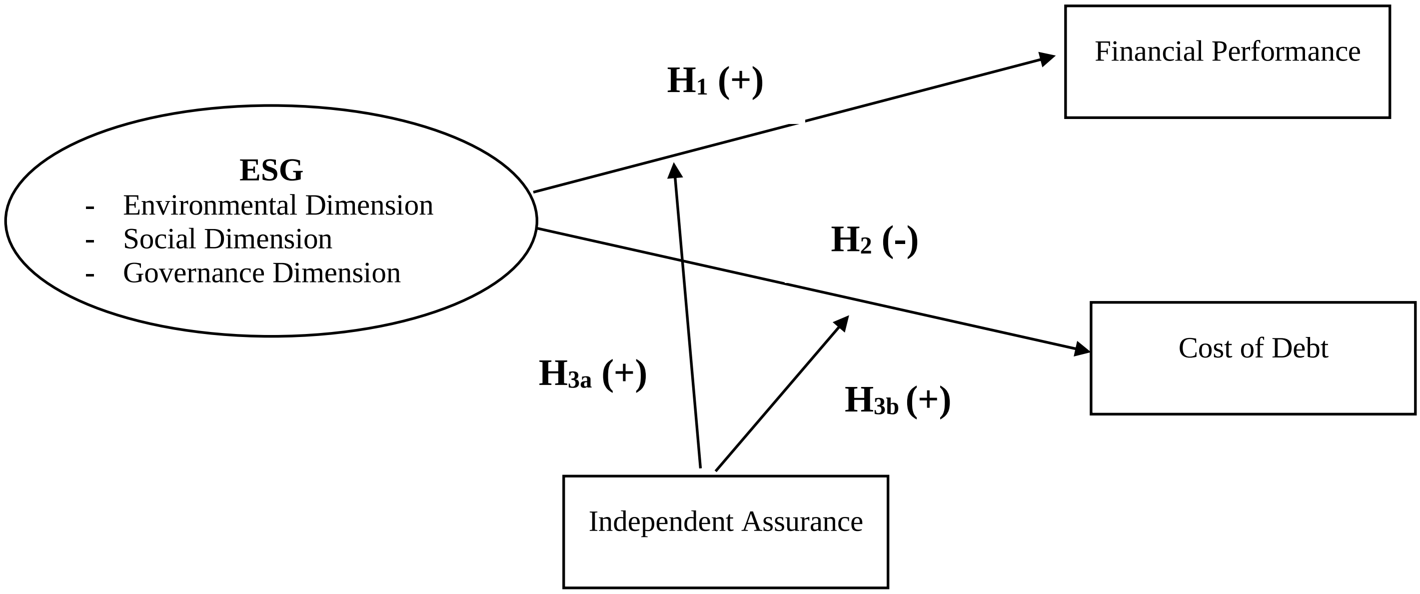
Inconsistent and incomplete disclosure in the sustainability reports published by companies can result in external parties having reduced trust in those reports (Manetti and Becatti, 2009). Therefore, the use of independent assurance to guarantee a company's sustainability report is one option that companies can use. Companies that use external assurance to guarantee their sustainability reports will generally produce better disclosures in that year and the following year (Uyar et al., 2023). This is supported by research (Michelon et al., 2018; Moroney et al., 2012; Rossi and Tarquinio, 2017) which finds that company sustainability reports that have independent assurance have significantly higher credibility than those that are not guaranteed in that way. However, unlike financial information in financial reports which must be accompanied by external assurance, it is still voluntary for companies to use external assurance on non-financial information in sustainability reports. Casey and Grenier (2015) and Weber (2018) find that the presence of independent assurance is associated with a lower cost of capital, fewer errors, and less dispersion in the estimates of analysts than in cases where companies do not provide it. This research uses the signal theory to explain whether the quality of assurance moderates the effect of disclosure in sustainability reports on the cost of share capital and the cost of debt capital. The use of independent assurance services is a signal for investors and creditors that information asymmetry is reduce meaning it can strengthen the positive (negative) effect of ESG on financial performance (cost of debt).

H_{3a}: Independent assurance strengthens the positive effect of ESG disclosure on financial performance.

H_{3b}: Independent assurance strengthens the negative effect of ESG disclosure on a company's cost of debt.

Figure 1 depicts the research model in this study. ESG is analyzed as a latent/construct variable or unobserved variable which has three dimensions which are environmental, social, and governance. ESG as an independent/exogenous variable is hypothesized to have a positive (negative) effect on financial performance and cost of debt. The two dependent/endogenous variables are observed variables which are proxied respectively by return on assets (ROA) and the ratio of cost of interest to total long-term debt. Independent assurance is hypothesized as a moderating variable that can strengthen the positive (negative) effect of ESG on financial performance (cost of debt).

Figure 1.
Research model



3. Research Methods

3.1 Population and Sample

The population of this study is all Indonesian companies listed on the Indonesia Stock Exchange (IDX) during the period 2020-2022. The sample was selected using a non-probability sampling method and purposive sampling, with the criteria being non-financial companies that were listed on the IDX between 2020 and 2022 and that published complete sustainability reports during that period.

3.2. Measurement of Variables

The dependent variables are financial performance and cost of debt. Financial performance is measured using the return on assets (ROA) proxy. Meanwhile, the cost of debt is measured using the ratio of the total cost of interest divided by total long-term debts. The independent variable, namely ESG disclosure, can be measured using the content analysis method from the Global Reporting Initiative (GRI) index. The content analysis assessment uses 35 indicator points for the environmental dimension, 37 indicator points for the social dimension, and 30 indicator points for the governance dimension. If the company makes disclosures according to the indicator points, it will be given a score of 1 and if not, it will be given a score of 0. Then, divide the company’s total score by the total score of all existing indicators. The researchers use independent or external assurance in sustainability reports as a variable that moderates the relationship between ESG disclosure and financial performance and the cost of debt. The measurement of this moderating variable uses a dummy variable: if the company uses independent assurance, it is given a score of 1 and otherwise, it is given 0. This study uses a control variable, namely firm size, which is measured using the natural logarithm of total assets (Eliwa et al., 2021).

3.3. Data Analysis Technique

Data analysis in this study used the partial least squares-structural equation modeling (PLS-SEM) method. The software used is Warp PLS 8.0. PLS is one of the methods for implementing structural equation models. PLS is employed because the measurement of ESG variables uses three formative indicators (Hair et al., 2022; Kock, 2020). By using PLS, the results of simultaneous hypothesis testing can be obtained.

4. Results and discussions

4.1. Descriptive statistics

Table 1 presents the population and sample size for this study based on purposive sampling criteria. According to the data in Table 1, it appears that the number of issuers on IDX who publish sustainability reports is still limited, namely 279 out of 608 companies (45.88%).

Table 1. Research population size and samples

No	Description	Number
1.	Non-financial companies listed on the IDX 2020-2022	608
2.	Non-financial companies that did not publish sustainability reports 2020-2022	(515)
3.	Non-financial companies that published sustainability reports 2020-2022	93
4.	Number of research samples (93 x 3)	279
5.	Number of Outliers	(26)
6.	**The number of research samples used**	253

Next, descriptive statistical analysis was carried out to provide an overall picture of the data from the companies in the research sample with statistical information such as maximum, minimum, mean, and standard deviation. Descriptive statistical analysis on dummy variables is different from other variables. For dummy variables, descriptive statistical analysis provides an overview of their distribution in the research sample. In this study, the results of descriptive statistical analysis of independent, moderating and control variables are presented in Table 2.

Table 2. Descriptive statistics

Variable	Minimum	Maximum	Mean	Median	Std. Dev
ESG	0.3333	0.9804	0.6059	0.5980	0.1489
Environmental	0.1142	0.9714	0.5389	0.5142	0.2588
Social	0.0810	1.0000	0.4834	0.4864	0.1913
Governance	0.4333	1.0000	0.8388	0.8666	0.1384
ROA	-0.4626	0.5573	0.0599	0.0444	0.1015
Cost of debt	0.0001	0.1872	0.0738	0.0705	0.0405

Source: Output from E-views 12, 2024

The results of the descriptive statistical analysis show that the ESG disclosure of companies in Indonesia has a mean value of 0.6059 or 60.59%, so it can be concluded that ESG disclosure in Indonesia can be categorized as medium. Companies in Indonesia tend to focus their ESG disclosures on the governance dimension which is supported by the highest mean value of 83.88%. On the other hand, ESG disclosure in the social and environmental dimensions is still relatively low with averages of 53.89% and 48.34% respectively, so companies in Indonesia need to improve further their disclosure about these dimensions.

The dependent variable financial performance, which is proxied by ROA, has a mean value of 0.0599. This implies that companies in Indonesia have not been able to maximize the income that can be obtained from all of their assets in 2020-2022. The highest ROA value was obtained by Garuda Indonesia in 2021 where the company experienced quite large losses so that its ROA value was negative, namely -0.4626. On the other hand, the lowest ROA value was obtained by Indo Tambangraya Megah in 2022 is 0.5573, which shows that this can make good use of all of its assets to gain profits.

According to Table 2, companies in Indonesia are among those that have a fairly low cost of debt with a mean value of 0.0738. This shows that companies in Indonesia have quite low risk so they display a fairly low mean value too. The lowest cost of debt value obtained by PT Bumi Resources Mineral Tbk was 0.0001 in 2020, which shows that this company bears the smallest cost of debt for its debt. On the other hand, the highest cost of debt value in the sample was obtained by PT Jasuindo Tiga Perkasa Tbk in 2021 was 0.1872, which indicates that this company bears the largest cost of debt among the companies in this research sample.

Table 3. Frequency of most often disclosed ESG Items

No.	**Environmental Dimension**	
	Items/Indicators	**Percentage**
1.	The process or guide determines the material topics	99%
2.	List of material topics	99%
3.	Management material topics	99%
4.	Energy consumption in the organization	97%
5.	Negative environmental impacts in the supply chain and actions taken	94%
	Social Dimension	
No.	**Items/Indicators**	**Percentage**
1.	Non-compliance with laws and regulations in the social and economic fields	88%
2.	Average training hours per year per employee	86%
3.	Occupational health and safety management system	84%
4.	Disclosure, hazard identification, risk assessment, and incident investigation	81%
5.	Recruitment of new employees and employee turnover	80%
No.	**Governance Dimension**	
	Items/Indicators	**Percentage**
1.	Governance structure and composition	100%
2.	Details of the organization	100%

3.	Activities, value chains and other business relationships	100%
4.	Labor	100%
5.	Statement on sustainable development strategy	100%

Table 4 displays the environmental, social, and governance disclosure indicators that companies most frequently disclose. Nearly all (94%) of the companies in the research sample disclosed information covered by five indicators in the environmental dimension in their sustainability reports. Furthermore, in the social dimension, 80% of the research sample disclosed all of the five indicators shown in Table 4.3 in the social dimension in their sustainability report. Finally, in the governance dimension, the entire sample of companies disclosed information related to the five governance indicators in their sustainability reports.

Table 4. Least frequent items in ESG disclosures

No.	**Environmental Dimension**	
	Items/Indicators	**Percentage**
1.	Reduction in the energy required for products and services	28%
2.	IUCN Red List species and national conservation list species with habitats within areas affected by operations	26%
3.	Ozone depleting emissions	25%
4.	Selection of new suppliers using environmental criteria	23%
5.	Negative environmental impacts in the supply chain and actions taken	9%
No.	**Social Dimension**	
	Items/Indicators	**Percentage**
1.	Operations and suppliers where the right to freedom of association and collective bargaining may be at risk	19%
2.	Incidents of violations involving the rights of indigenous peoples	13%
3.	Security officers trained in human rights policies or procedures	9%
4.	Negative social impacts in the supply chain and actions taken	8%
5.	Political contributions	5%
No.	**Governance Dimension**	
	Items/Indicators	**Percentage**
1.	The role of the board of commissioners in overseeing impact management	66%
2.	Workers who are not direct employees	52%
3.	Annual total compensation ratio	45%
4.	Instilling of policy commitment	43%
5.	Process to correct negative impacts	37%

Table 4 summarizes the indicators most frequently displayed by the sustainability reports of the companies in the sample. For the environmental dimension, the indicator that is least disclosed is the negative environmental impact in the supply chain and the actions that have been taken, where only 9% of the sample disclosed it. Furthermore, for the social dimension, the indicator that is least disclosed is the company's political contribution, where only 5% of the companies disclosed it. Finally, for the governance dimension, the indicator that is least disclosed is the process for correcting negative impacts, where disclosure is only made by 36% of the sample.

Table 5. Frequency distribution of the independent assurance variable

Score	Criteria	Number	%
1	Companies that use assurance for their SR	53	21.00%
0	Companies that do not use external assurance for SR	200	79.00%

Table 5 presents frequency data for the independent assurance variable. Table 5 presents information regarding the moderating variable, namely independent assurance in sustainability reports for all companies in the research sample. The result is that there are 53 firm-year observations where independent assurance is used for sustainability reports or 21.00% of the data from the total sample, while the other 200 firm-year observations (79.00%) in the total sample still do not use independent assurance to verify their sustainability reports. These results still show the low level of the practice of using independent assurance for issuers' sustainability reports in Indonesia, namely 21.00% of the total sample.

Table 6. Independent assurance providers

Public Accounting Firm	
Name	**Number**
Moores Rowland Indonesia	26
KPMG Phoomchai Audit Ltd	1
PwC	1
Total	**28**
Other than Public Accounting Firms	
Name	**Number**
PT. TUV Rheinland Indonesia	5
Social Responsibility Asia	12
SGS Indonesia	3
Bureau Veritas Indonesia	2
LRQA	2
PT Sucofindo	1
Total	**25**

Table 6 presents data on independent assurance service providers. Of the 53 samples that used independent assurance services, 28 of them (52.83%) used the services of a public accounting firm. Meanwhile, 25 (47.16%) used services other than public accounting firms.

4.2 Hypothesis testing

This study used the PLS-SEM method for hypothesis testing because there is a latent variable, namely ESG. PLS-SEM analysis was carried out in two stages, namely evaluation of the measurement model and structural model (Hair et al., 2022). The evaluation of the measurement model in this study was conducted to evaluate the feasibility of the formative measurement model for the ESG variable. The formative measurement model is declared feasible if the weight indicator is significant (p-values <0.01) and there is no multicollinearity (VIF <5) (Hair et al., 2022; Kock, 2020). The ESG variable in this study uses three formative measurement indicators, namely environmental, social, and governance indicators. The results in Table 4 show that the measurement model of the ESG is acceptable, with a positive significant weight value for these three indicators having a p-value < 0.01 and a VIF value of each indicator < 5.

Table 4. Results of the Measurement Model Evaluation

Dimensions	Parameter	Result	Rule of thumb	Conclusion
Environmental	P-value	< 0.001	P-values < 0.01	Accepted
	VIF	1.945	VIF < 5	Accepted
	Weight	0.429	Positive	Accepted
Social	P-value	< 0.001	P-values < 0.01	Accepted
	VIF	1.952	VIF < 5	Accepted
	Weight	0.429	Positive	Accepted
Governance	P-value	< 0.001	P-values < 0.01	Accepted
	VIF	1.271	VIF < 5	Accepted
	Weight	0.353	Positive	Accepted

After the measurement model stages are fulfilled, the next stage is testing the structural model. Evaluation of the structural model in this study was carried out by looking at the percentage of variance explained by looking at the model’s goodness of fit, and full collinearity VIF as well as the significance value of the path coefficient. From the results of the model fit output (Table 5), it can be seen that the model has a good fit, indicated by all indicators meeting the criteria in the rule of thumb (Kock, 2020).

Table 5. Model fit indices

Criteria	Result	P-Values	Rule of thumb
Average Path Coefficient (APC)	0.132	0.008	P < 0.05
Average R-Square (ARS)	0.069	0.041	P < 0.05
Average Block VIF (AVIF)	1.100		≤3.3
Average Full Collinearity VIF (AFVIF)	1.491		≤3.3
Tenenhaus GoF (GoF)	0.256		≥0.10
Sympson's paradox ratio	0.833		≥ 0.70
R-squared contribution ratio	0.992		≥ 0.90
Statistical suppression ratio	0.833		≥ 0.70

After the goodness of fit evaluation met the criteria, hypothesis testing was carried out using PLS-SEM to evaluate the path coefficient and its significance. The results of the PLS-SEM test are presented in Figure 2 which consists of the standardized path coefficient, p-value, and coefficient for the determination of R^2 according to the output from the WarpPLS 8.0 software.

Figure 2
Structural model testing result

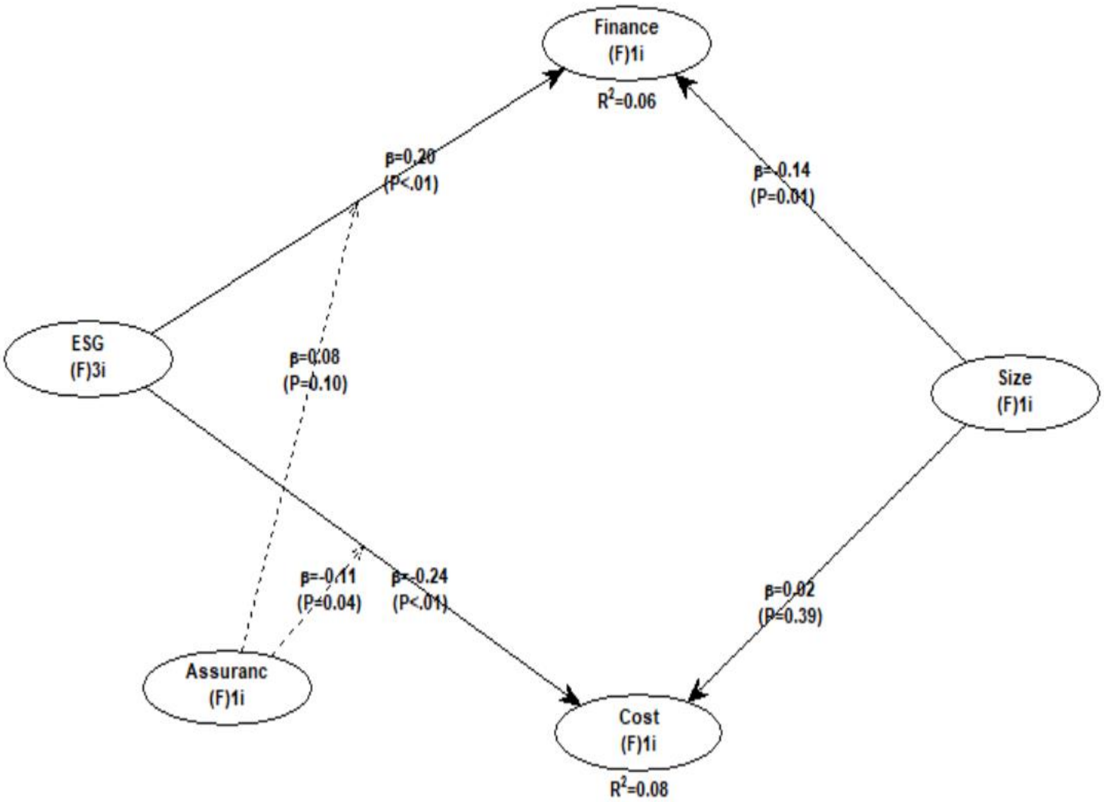


Table 6 presents the results of hypothesis testing based on PLS-SEM structural analysis. ESG has a positive effect on financial performance with a coefficient of 0.203 and is significant with a p-value <0.001, so H_1 is supported. In accordance with H_2, ESG has a negative effect on the cost of debt with a coefficient of -0.245 and is significant with a p-value <0.001. Table 6 also shows the results of testing the moderating effect of PLS-SEM using a two-stage approach as recommended by Hair et al. (2022). The test results show that H_{3a} is not supported with an interaction effect coefficient of 0.080 and is not significant. H_{3b} is supported by an interaction coefficient of -0.311 and a p-value of 0.036 so it is significant at an alpha of 5%. This shows that independent assurance strengthens the negative effect of ESG on the cost of debt.

Table 6. Path coefficients and p-values results

Structural/hypothesized paths	Parameter (β)	p-value	Results
ESG → Financial Performance	0.203	<0.001	Supported
ESG → Cost of Debt	-0.245	<0.001	Supported
ESG*Assurance→ Financial Performance	0.080	0.099	Not Supported
ESG*Assurance→ Cost of Debt	-0.311	0.036	Supported

Further analysis was carried out using multigroup analysis as recommended by Hair et al. (2022) because the independent moderation variable assurance is categorical (has-assurance versus has-no-assurance). Testing was carried out using the pooled standard error and Satterthwaite methods as recommended by Kock (2020). The test results are presented in Table 7. Panel A shows that there is no significant difference in the coefficient of the effect of ESG on financial performance for the has assurance and has no assurance groups (p-values using the pooled standard error and Satterthwaite methods are 0.389 and 0.386, respectively). Although the coefficient for the has-assurance group is greater than the has-no-assurance group (0.156 vs 0.198), the difference in coefficient is not statistically significant. On the other hand, the results in panel B show that there is a significant difference in the coefficient of the effect of ESG on the cost of debt for the has-assurance and has-no-assurance groups (p-values using the pooled standard error and Satterthwaite methods are 0.032 and 0.049, respectively). The negative effect of the has-assurance group is greater than the has-no-assurance group (-0.428 vs -0.160) meaning that the results of the multigroup analysis are consistent with the results in Table 6 that show that assurance strengthens the negative effect of ESG on the cost of debt.

Table 7. Multigroup analysis

Panel A. Multigroup analysis of the effect of ESG on financial performance

	Without assurance	With assurance
Coeficient	0.156	0.198
p-value	0.012	0.064
p-value (significance) of the difference in coefficients		
Pooled standard error method	0.389	
Satterthwaite method	0.386	

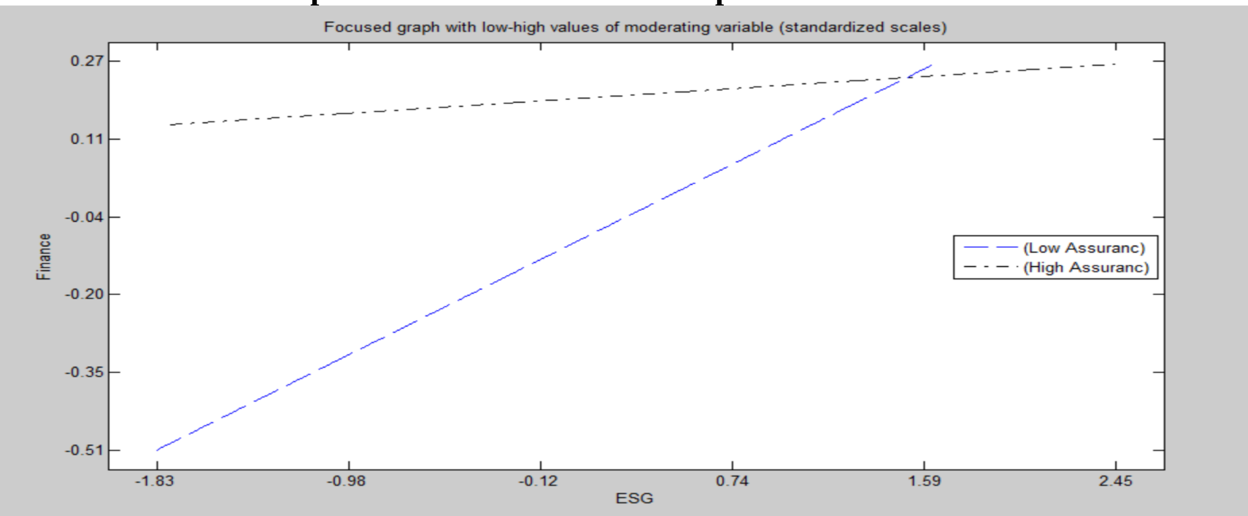
Panel B. Multigroup analysis of the effect of ESG on cost of debt

	Without assurance	With assurance
Coeficient	-0.160	-0.428
p-value	0.010	<0.001
p-value (significance) of the difference in coefficients		
Pooled standard error method	0.032	
Satterthwaite method	0.049	

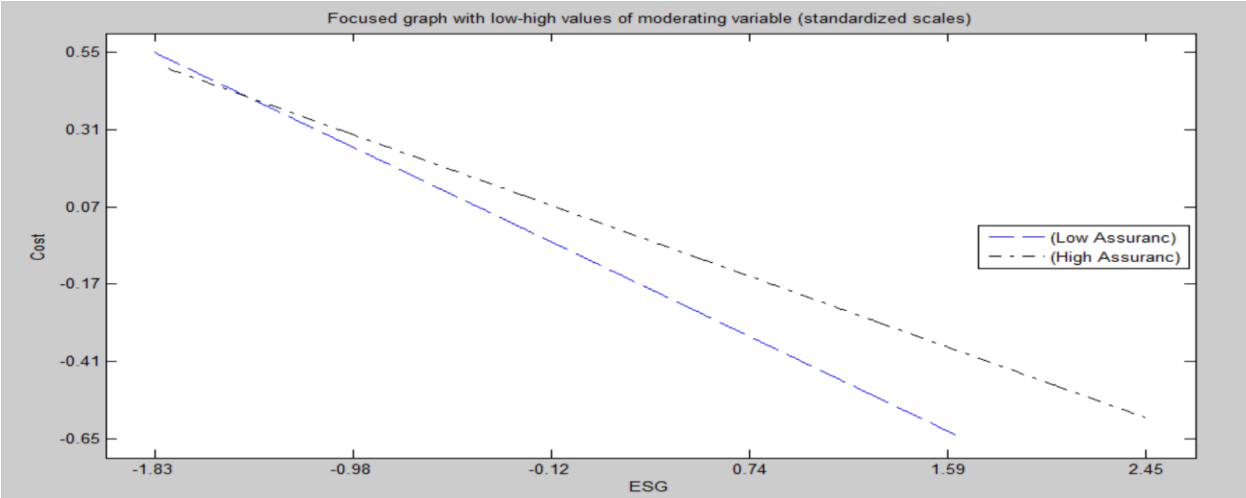
In order to clarify the results of testing the moderating effect, we followed the recommendations of Hair et al. (2022), namely by presenting a graphic illustration of the slope plot of the moderating effect of independent assurance as shown in Figure 3. In panel A, it appears that the slope plot of the effect of ESG on financial performance is higher for good assurance than for less good assurance. However, the slope plot of the effect of ESG on financial performance for good assurance becomes flatter than for less good assurance, thus indicating that independent assurance does not strengthen the positive effect of ESG on financial performance. The positive effect of ESG on financial performance does not depend on whether there is assurance regarding the disclosure of ESG information in sustainability reporting.

Figure 3
Moderating effect plot

Panel A. Plot of the slope indicating the moderating effect of independent assurance on the relationship between ESG and financial performance



Panel B. Plot of the slope indicating the moderating effect of independent assurance on the relationship between ESG and cost of debt



Panel B shows that the slope plot of the effect of ESG on the cost of debt is steeper and straighter with good assurance. These results show that in a situation where there is good independent assurance, the negative effect of ESG on the cost of debt becomes stronger (Hair et al., 2022). On the other hand, the slope plot of the negative effect of ESG on the cost of debt becomes flatter when there is less good independent assurance. This means that in situations where there is less good independent assurance, the negative effect of ESG on the cost of debt becomes weaker (Hair et al., 2022). This additional analysis shows support for the hypothesis that independent assurance strengthens the negative effect of ESG on the cost of debt. Empirical evidence shows that creditors need guarantees from independent parties to verify the accuracy and reliability of ESG disclosure information in sustainability financial reports before deciding upon lower interest charges. Creditors need more reliable and relevant information that has been provided with assurance in order to assess the company's business risks which are reflected in the ESG practices of the prospective debtor.

4.3. Discussion

This study provides empirical evidence that supports the legitimacy and signaling theories according to which ESG disclosure can create a good image for a company and thereby it can gain legitimacy in the eyes of stakeholders. Apart from that, information about ESG can be a positive signal for stakeholders which will further increase product sales and this will then translate into an improved financial performance. The implementation of ESG can improve financial performance by providing opportunities for companies to support sustainability, build a solid reputation, gain the trust of stakeholders, and contribute to addressing sustainable development issues at the national level (Chen et al., 2023). These findings support previous research which has found that implementing ESG can improve a company’s financial performance (Chen et al., 2023; Lu and Khan, 2023; Malik and Kashiramka,2024; Wu et al., 2022).

This research also provides empirical evidence showing that a company's ESG disclosure has a significant negative effect on its cost of debt. This is because lenders not only assess the company's risk based on its profitability but also use ESG disclosure to assess it. Therefore, more ESG disclosure will significantly reduce a company's cost of debt. This empirical evidence also supports the legitimacy theory according to which companies will try to be seen as operating in accordance with societal norms. This empirical evidence supports the argument of Eliwa et al. (2021) that companies need to provide something that can influence the public's assessment and to gain their recognition, such as by making ESG disclosures. Companies that have poor ESG disclosure will tend to have a higher cost of debt because they will have difficulty getting support from external parties who will consider such companies to be riskier, which will result in an increase in their cost of debt. Apart from that, the empirical evidence from this study also supports the agency theory which focuses on information asymmetry problems that arise between a company and external parties, as well as how to deal with these information asymmetry problems. In this context, companies' financial reports are not enough to reduce information asymmetry, so they need to take other steps to increase their transparency to external parties. One way to minimize the emergence of information asymmetry according to agency theory is to offer more transparency, such as by making ESG disclosures. More ESG disclosure will minimize the emergence of information asymmetry between internal and external parties such as lenders because it can reduce the level of company risk which results in lower interest rates and a lower cost of debt. This empirical evidence is consistent with previous research (Xu et al., 2021; Eliwa et al., 2021; Malik and Kashiramka, 2024; Raimo et al., 2021) which finds that ESG disclosure has a significant negative effect on the cost of debt.

The results of the testing of the moderating effect show that independent assurance does not strengthen the positive effect of ESG disclosure on financial performance. This positive effect remains whether or not an external, independent party assures the ESG disclosures. This shows that stakeholders such as consumers and investors do not need the confidence that independent assurance provides regarding the good image that a company has built through its disclosure of ESG information. On the contrary, this study's empirical evidence shows that independent assurance can strengthen the negative effect of ESG disclosure on the cost of debt. This finding could mean that creditors need independent assurance regarding ESG disclosures to believe in the credibility of information in sustainability reporting in credit-granting decisions. The empirical evidence from this study supports previous research (Michelon et al., 2018; Moroney et al., 2012; Rossi and Tarquinio, 2017; Uyar et al., 2023) that has found that the existence of independent assurance will strengthen the negative effect of ESG on the cost of debt.

5. Conclusions

This study shows that the level of ESG disclosure can be categorized as moderate, namely 65% of full disclosure. The governance dimension is the one that is expressed the most, compared to the other two dimensions. Apart from that, the use of independent assurance is still relatively low, namely 21% of the whole sample. This study concludes that the implementation of ESG as disclosed in sustainability reporting has a positive impact on companies in terms of improving financial performance and reducing the cost of debt. This empirical evidence demonstrates the important role of implementing ESG, including in developing countries such as Indonesia from which the sample was drawn for this research.

This research contributes by explaining inconsistencies in previous research findings by adding independent assurance as a moderating variable. Using this research model, the authors argue that the effect of ESG disclosure on financial performance and the cost of debt depends on whether there is assurance regarding the ESG disclosure in sustainability reporting. Empirical evidence shows that independent assurance has an important role for directors in order that they feel the ESG information in risk assessment is credible meaning that the negative effect of ESG on the cost of debt is stronger if there is assurance. However, the role of assurance is not significant for stakeholders such as consumers and investors, indicating an insignificant moderating effect.

This study has limitations, including the fact that the ESG measurements are limited to information available in sustainability reporting and not from other data sources. However, the choice of research design is reasonable because the majority of ESG information is presented in sustainability reporting. Another limitation is the use of proxies for the variable measurement. However, this study contributes by providing empirical evidence on the implementation of ESG in developing countries which is still limited. In addition, this research contributes by explaining the role of independent assurance in strengthening the effect of ESG on financial performance and the cost of debt.

Author contributions
Conceptualization: DD, DR
Data collection: DR, AT, DD
Formal analysis: DR, DD
Methodology: DD, DR
Project administration and software: DR, AT
Validation: DR, DD
Writing – original draft: DD, DR, AT
Writing – review and editing: DD, DR, AT
All authors agree to be accountable for all aspects of the work.

Data availability statement
The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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NOTIFIKASI SUBMIT DITERIMA DARI EDITOR JURNAL

Q QABM-peerreview@journals.taylorandfrancis.com

To: Darsono

Sun 16/06/2024 17:26

Taylor & Francis
Taylor & Francis Group

Dear Darsono Darsono,

Thank you for your submission.

Submission ID	**241022653**
Manuscript Title	**A model for the moderating effect of independent assurance on the relationship between ESG, financial performance, and cost of debt**
Journal	**Cogent Business & Management**
Article Publishing Charge (APC)	**USD $1680.0 (plus VAT or other local taxes where applicable in your country)**

**APC only payable if your article is accepted*

If you made the submission, you can check its progress and make any requested revisions on the Author Portal.

Thank you for submitting your work to our journal.
If you have any queries, please get in touch with QABM-peerreview@journals.taylorandfrancis.com.

For any queries relating to your APC, please get in touch with APC@tandf.co.uk

Kind Regards,
Cogent Business & Management Editorial Office

HASIL CEK DARI EDITOR DAN KETERANGAN BAHWA MANUSKRIP DIKIRIM KE REVIEWERS

CM

Cogent Business & Management<onbehalfof@manuscriptcentral.com>

To: Darsono

Mon 24/06/2024 18:52

Cc: Darsono; dwi.ratmono2@gmail.com; **+2 others**

24-Jun-2024

QABM-2024-1626

Dear Dr Darsono Darsono,

We have carefully checked over your above referenced manuscript, entitled "A model for the moderating effect of independent assurance on the relationship between ESG, financial performance, and cost of debt", and I am pleased to confirm that we will now send it for peer review in Cogent Business & Management.

Thank you for submitting to Cogent Business & Management. We will be back in touch in due course.

Best regards,
Swarnima Tiwari
Cogent Business & Management Editorial Office

NOTIFIKASI HASIL REVIEW
(KOMENTAR SUBSTANSIF DARI REVIEWER JURNAL)

CM

Cogent Business & Management<onbehalfof@manuscriptcentral.com>

To: Darsono

Wed 25/09/2024 09:52

Cc: Darsono; dwi.ratmono2@gmail.com; **+2 others**

24-Sep-2024

Ms. No. 241022653

A model for the moderating effect of independent assurance on the relationship between ESG, financial performance, and cost of debt

Cogent Business & Management (Open Research)

Dear Dr Darsono Darsono:

Wed 25/09/2024 09:52

24-Sep-2024

Ms. No. 241022653

A model for the moderating effect of independent assurance on the relationship between ESG, financial performance, and cost of debt

Cogent Business & Management (Open Research)

Dear Dr Darsono Darsono:

Your manuscript: "A model for the moderating effect of independent assurance on the relationship between ESG, financial performance, and cost of debt", submitted to Cogent Business & Management (Open Research), has been reviewed. While the overall sentiment regarding your paper is positive, the reviewer comments suggest that major revisions are required before your manuscript could be accepted for publication. Please attend to these constructive criticisms offered by the reviewers and be sure to explicate any methodological questions that have been introduced by the reviewers. The reviewer comments are included at the bottom of this letter.

Your revision is due by 22-Oct-2024.

If you would like to submit a revision, please:

1) Submit a list of changes or a rebuttal against each point in the reviewer comments. More information can be found here: https://authorservices.taylorandfrancis.com/publishing-your-research/peer-review/#respondtoreviewers

2) Show any changes to the text, by using a different color font or by highlighting the changes (please do not use the Track Changes feature in Microsoft Word).

3) Any figures should be saved as either .ps, .eps, .tif or .jpeg file types. If you have built your

paper in LaTex, please ensure that all relevant .sty, .bib, .cl etc. supplementary files are included so that the manuscript can be correctly built.

4) Make sure to refer to the formatting requirements for this journal found on the journal's Information for Authors page here:[include journals IFA link].

5) Upload all source files including a clean copy of your manuscript as well as the version with changes.

IMPORTANT: Your original files are available to you when you upload a revision. Please delete any files that you do not want to include with your revision.

To submit a revision, go to:
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For further assistance, please contact the Editorial Office team at QABM-peerreview@journals.taylorandfrancis.com.

You may request an extension of the due date of 22-Oct-2024 by contacting the journal.

If you do not want to submit a revision, please respond to this email with the text: 'Decline to revise'. Please note if your manuscript becomes overdue, after a certain time period it will be withdrawn.

Thank you for submitting your manuscript to Cogent Business & Management (Open Research). I look forward to receiving your revision.

Sincerely,
Dr Thomas G. G. Pittz
Academic Editor, Cogent Business & Management (Open Research)
tpittz97@gmail.com

Comments from the Reviewers:

Reviewer: 1

Comments to the Author
The paper ''A model for the moderating effect of independent insurance on the relationship between ESG, financial performance and cost of debt'' is well structured and captures all the necessary aspects of a complex paper from all points of view.
I have no comments to make on the methodology nor the results of the study.
Good luck to the authors!

Reviewer: 2

Comments to the Author
Dear Authors,
Thank you for your paper. Although I've found it quite novel into the literature mainstream, I've some concerns regarding the framework you used and the managerial implications deriving from it. Therefore, I suggest you to deeply review this two side of your research, by looking clearly at the effects of the external support on your dependent variables.

Reviewer: 3

Comments to the Author
Congratulations on your paper. Robust analysis and interesting contribution to the literature. Please consider the comments below to enhance the quality of your article.

Abstract. The sentences are very complex - simplify and rewrite abstract.
Title could be more simple: “Relationship between ESG disclosure, financial performance and cost of debt: the example of Indonesian markets and the role of external assurance”
It is not clear what “moderating effect” or “moderating variable” means, consider removing the “moderating” word unless it is defined in the literature.

Detailed comments:
p1 row 47. indicate upfront for which country, what source of data
p2 row 40. you want to cite Flammer who develops the signal theory and shows that the issuer of green bonds benefits from a positive market reaction, especially when it is the first ESG issuance and when there is an external assurance.
p2 row 54. you also want to cite the meta study by Friede et al. (2015) or more recent example applied to emerging markets by Possebon et al (2024 - ESG ratings in Brazil)
p3 row 20. Another reference is the study by Glisovic et al (2012) showing that ESG businesses, such as microfinance, do not get a pricing premium.
p3 row 55. consider adding a reference to de Mariz (2022), the Promise of sustainable finance in brazil. Brazil is the second largest EM market for labeled bonds, with some interesting analogies with Indonesia, and disclosure / reporting remains a key hurdle.
p4 row 44. 2018 feels a bit dated. would you have a more recent source for that statement? ESG issuance started to increase in earnest around 2020
p5-6-7. good revision of the literature and connection with current theories. that being said, consider including some considerations against providing more disclosure, such as cost, lack of consensus on the datapoints that need to be disclosed, lack of market pressure to publish data (weak market discipline) and any other reasons. You want to give a balanced view of the disclosure debate.
p7 row 44. you want to add a reference to Flammer who analyses the impact of CSR disclosure with a quasi-experiment and finds outperformance
p7 row 48. similarly, the European Central bank published a study in august 2024, which is the first of its kind, analyzing lending rates and ESG characteristics of borrowers in the EU - they find a significant relationship. suggest to add this research, because it is very recent and material. “ECB 2024. working paper series. Climate risk, bank lending and monetary policy, Altavilla, Boucinha, Pagano, Polo”
p10 row 21. be very careful to not use the words “effect” or “cause” or “impact”. your study does not assess causality, but correlation. This is a common mistake in the literature. there could be reverse causality or a third variable to causes both robust ESG disclosure and good financial performance.
p11 row 4. what do you mean by “complete” sustainability reporting. it is not clear what complete vs non complete would refer to. do you assess the quality of data that is reported, or only whether it is reported or not? does it matter under which framework the data are reported, such as GRI or SASB, or any framework is useful? do you indicate which frameworks are most commonly used (GRI, SASB) etc? Please provide more details.
p11 row 55. incorrect number. if you want to describe the number of issuers, then it appears the number in the text should be 93, not 279
p12 row 15.how do you define “outliers”? please clarify
p12 row 27. what are the control variables? do you control for size of the company? what other control variables are applied?
p12 row 42. how do you conclude that it is “medium”? do you have data for other countries?

p12 row 52. your interpretation of the data is misguided. if you dont provide a comparison / benchmark, it is not possible to assess if it is good or bad (and 5% does not sound bad for ROA). mixing up negative ROA and positive ROA is not insightful. suggest to remove those sentences
p13 row 9. again your interpretation does not seem to be correct. 7% cost of debt is low or high, depending on the benchmark you are using. PT Bumi has a cost of debt of 0%, which very much looks like a typo or a data glitch. please double check and adjust text
Table 3 and Table 4. well done, interesting data
p15 Table 6. why did you create two categories (public accounting and others) and not keep as one category of providers? do they abide by different rules? if the rules are the same, then i would keep under 1 category only.
p21. consider adding a reference to greenwashing, which is a key discussion in sustainable finance circles. for example the good paper by ICMA on greenwashing risk (2023).
p22, row 33. would you use the word “depends on” or rather “increases with”. the results suggest that there is a correlation btween disclosure and cost of debt, and that relationship increases with external assurance.
Qualify better the limitations of your sample (one country, just 3 years etc).

RESPONSE PENULIS TERHADAP REVIEW (BUKTI SUBMIT LAGI DENGAN REVISI MENANGGAPI HASIL REVIEW),

Darsono

To: tpittz97@gmail.com

Sat 28/09/2024 20:39

Dear Dr Thomas G. G. Pittz
Academic Editor, Cogent Business & Management

Thank you for your information and support.
We have revised the manuscript according to the suggestions from the reviewers. We have presented the responses to all comments from the reviewers in detail in the Table of response.docx file which is part of the supplementary document for reviews. We have also uploaded the revised version of the manuscript with green highlights for each suggestion from the reviewers. In addition, we have also uploaded a clean copy of the manuscript.
We are waiting for the next process.

Best regards,
Dr. Darsono Darsono
Universitas Diponegoro, Indonesia

Table of response

We would like to thank the reviewers for their insightful and invaluable feedback. We have considered all the suggestions and these improve our paper. We believe our paper is now ready for publication. Details of our responses are shown in the table below.

Reviewers' comment's	Response
Reviewer 1	
The paper "A model for the moderating effect of independent insurance on the relationship between ESG, financial performance and cost of debt" is well structured and captures all the necessary aspects of a complex paper from all points of view. I have no comments to make on the methodology nor the results of the study. Good luck to the authors!	Thank you for your comments and support.
Reviewer 2	
Dear Authors, Thank you for your paper. Although I've found it quite novel into the literature mainstream, I've some concerns regarding the framework you used and the managerial implications deriving from it.	Thank you for your comments and support. We have added more comprehensive literature support for the dependent variable, in accordance with your and reviewer 3's

Therefore, I suggest you to deeply review these two sides of your research, by looking clearly at the effects of the external support on your dependent variables.	suggestions. We have also added managerial implications to the conclusions section about the importance of the role of ESG in improving financial performance and reducing the cost of debt.
Reviewer 3	
Congratulations on your paper. Robust analysis and interesting contribution to the literature. Please consider the comments below to enhance the quality of your article. Abstract. The sentences are very complex - simplify and rewrite abstract. Title could be more simple: “Relationship between ESG disclosure, financial performance and cost of debt: the example of Indonesian markets and the role of external assurance” It is not clear what “moderating effect” or “moderating variable” means, consider removing the “moderating” word unless it is defined in the literature.	Thank you for your valuable comments. Here is our revised manuscript based on your suggestions. We mark our revisions in green. We have revised by rewriting the abstract section to be simpler. We have revised the title to: The relationship between ESG, financial performance, and cost of debt: The role of independent assurance
Detailed comments: p1 row 47. indicate upfront for which country, what source of data	We have revised: The research sample consisted of 253 Indonesian firms-years during the period 2020-2022.
p2 row 40. you want to cite Flammer who develops the signal theory and shows that the issuer of green bonds benefits from a positive market reaction, especially when it is the first ESG issuance and when there is an external assurance.	We have cited Flammer's (2021) findings: Flammer (2021) provides empirical evidence that issuers of green bonds benefit from a positive market reaction, especially when it is the first ESG issuance and when there is an external assurance.
p2 row 54. you also want to cite the meta study by Friede et al. (2015) or more recent example applied to emerging markets by Possebon et al (2024 - ESG ratings in Brazil)	We have cited Friede et al. (2015) and Possebon et al (2024 - ESG ratings in Brazil)
p3 row 20. Another reference is the study by Glisovic et al (2012) showing that ESG businesses, such as microfinance, do not get a pricing premium.	We have cited Glisovic et al (2012)
p3 row 55. consider adding a reference to de Mariz (2022), the Promise of sustainable finance in brazil. Brazil is the second largest EM market for labeled bonds, with some interesting analogies	We have cited de Mariz (2022)

with Indonesia, and disclosure / reporting remains a key hurdle. p4 row 44. 2018 feels a bit dated. would you have a more recent source for that statement? ESG issuance started to increase in earnest around 2020 p5-6-7. good revision of the literature and connection with current theories. that being said, consider including some considerations against providing more disclosure, such as cost, lack of consensus on the datapoints that need to be disclosed, lack of market pressure to publish data (weak market discipline) and any other reasons. You want to give a balanced view of the disclosure debate.	We have revised the 2018 quote by replacing it with a more recent source: Likewise, the results of research conducted by the Center for Governance and Sustainability NUS Business School (2020) entitled Corporate Sustainability Reporting in ASEAN Countries show that companies in Indonesia have low scores for governance disclosure.
p7 row 44. you want to add a reference to Flammer who analyses the impact of CSR disclosure with a quasi-experiment and finds outperformance	We have cited Flammer (2015).
p7 row 48. similarly, the European Central bank published a study in august 2024, which is the first of its kind, analyzing lending rates and ESG characteristics of borrowers in the EU - they find a significant relationship. suggest to add this research, because it is very recent and material. “ECB 2024. working paper series. Climate risk, bank lending and monetary policy, Altavilla, Boucinha, Pagano, Polo”	We have cited ECB working paper series (2024): The findings of Altavilla et al. (2024) in the ECB 2024 working paper series entitled "Climate risk, bank lending and monetary policy", show that banks charge higher interest rates to firms featuring greater carbon emissions, and lower rates to firms assuming lower emissions, controlling for their probability of default.
p10 row 21. be very careful to not use the words “effect” or “cause” or “impact”. your study does not assess causality, but correlation. This is a common mistake in the literature. there could be reverse causality or a third variable to causes both robust ESG disclosure and good financial performance.	We have revised according to your suggestions regarding use of the word “effect”.
p11 row 4. what do you mean by “complete” sustainability reporting. it is not clear what complete vs non complete would refer to. do you assess the quality of data that is reported, or only whether it is reported or not? does it matter under which framework the data are reported, such as GRI or SASB, or any framework is useful? do you indicate which frameworks are most commonly used (GRI, SASB) etc? Please provide more details.	We have revised the phrase “complete sustainability reports” to “sustainability reports”. This revision is to clarify that only companies that publish sustainability reports are included in the final sample.
p11 row 55. incorrect number. if you want to	Thank you for your correction. We have revised it accordingly.

describe the number of issuers, then it appears the number in the text should be 93, not 279	
p12 row 15.how do you define “outliers”? please clarify.	Thank you for your comment. Outliers, or anomalies in the parlance of data mining, are observations with a unique combination of characteristics identifiable as distinctly different from what is “normal" (Hair et al. 2022). All of the analyzes focused on outlier detection are based on establishing the norms of comparison so that individual observations can then be evaluated and outlier detection can be objective and routinized. Outliers can cause assumptions from statistical analysis techniques to not be met. We refer to Hair et al. Standard Scores). An outlier designation then occurs when an observation falls well to the outer boundaries of the distribution of values, many times identified as cases with standardized values of 63, which makes them quite unique in terms of that characteristic.
p12 row 27. what are the control variables? do you control for size of the company? what other control variables are applied?	We use the control variable, namely company size, as shown in Figure 2. Company size is measured by the natural logarithm of total assets, following previous research using the natural logarithm of total assets (Eliwa et al., 2021). To make it easier for readers, we have revised Table 2 by adding descriptive statistics about the control size variable. We have also revised the manuscript by writing an explanatory sentence about the control variable before Table 2.
p12 row 42. how do you conclude that it is “medium”? do you have data for other countries?	We agreed with your comments. We have revised by remove those sentences.
p12 row 52. your interpretation of the data is misguided. if you dont provide a comparison / benchmark, it is not possible to assess if it is good or bad (and 5% does not sound bad for ROA). mixing up negative ROA and positive ROA is not insightful. suggest to remove those sentences	We agreed with your comments. We have revised it according to your comments.
p13 row 9. again your interpretation does not seem to be correct. 7% cost of debt is low or high, depending on the benchmark you are using. PT Bumi has a cost of debt of 0%, which very much looks like a typo or a data glitch. please double check and adjust text	Thank you very much for your comments.
Table 3 and Table 4. well done, interesting data	Thank you for your comment. In the context of Indonesia, the provision of independent/external assurance services for sustainability reporting can be done by public

p15 Table 6. why did you create two categories (public accounting and others) and not keep as one category of providers? do they abide by different rules? if the rules are the same, then i would keep under 1 category only.	accounting firms or others. If a public accounting firm provides the services, they must follow the rules on public accounting professional standards applicable in Indonesia. While service providers other than public accounting firms do not have to follow these rules. Because there are differences in the rules, we create two categories in table 6.
p21. consider adding a reference to greenwashing, which is a key discussion in sustainable finance circles. for example the good paper by ICMA on greenwashing risk (2023).	We have revised it by adding a reference to greenwashing by citing the paper by ICMA (2023) on that page.
p22, row 33. would you use the word “depends on” or rather “increases with”. the results suggest that there is a correlation between disclosure and cost of debt, and that relationship increases with external assurance.	We have revised the sentence: The authors argue that the impact of ESG disclosure on financial performance and debt costs **increases with** whether there is assurance regarding ESG disclosure in sustainability reporting.
Qualify better the limitations of your sample (one country, just 3 years etc).	We have revised it by adding the limitation of data only from one country and only covering a 3-year period.

ARTIKEL YANG SUDAH DIREVISI

The relationship between ESG, financial performance, and cost of debt: The role of independent assurance

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ABSTRACT

This study aims to analyze the moderating model in the relationship between disclosure of environmental, social, and governance (ESG), financial performance and cost of debt. This study contributes by adding independent assurance as a moderating variable in the research model to explain inconsistencies in previous research. Stakeholder trust in the quality of ESG information in sustainability accounting reports depends on whether there is independent assurance/audit regarding the report. This study also contributes to accounting research by testing the moderation model in the COVID-19 pandemic period where the empirical evidence from previous research has not been conclusive. The research sample consisted of 253 Indonesian firms-years listed in Indonesian Stock Exchange during the period 2020-2022. Hypothesis testing was carried out using partial least squares-structural equation modeling (PLS-SEM). The results show that the implementation of ESG, as disclosed in sustainability reporting, has a positive (negative) relationship with financial performance (cost of debt). The relationship between ESG and financial performance and cost of debt increases when there is an independent assurance/audit in sustainability reporting.

Keywords: ESG, financial performance, cost of debt, independent assurance, sustainability accounting reporting

6. Introduction

The issue of sustainability has become a strategic issue for business entities nowadays due to various problems such as global warming, environmental damage, pollution, the energy crisis, and others. One of the responses to this was the "Who Cares Wins (WCW)" report in 2004 by the UN Secretary-General and the UN Global Compact which has significantly increased the popularity of the environmental, social, and governance (ESG) concept. Business entities are now increasingly aware of the importance of ESG to ensure ethical and sustainable practices in their operations, so that they can achieve goals not only in terms of profit, but also for the people and the planet (Alduais, 2023; Al Amosh and Khatib, 2021; Linnenluecke, 2022). The implementation of ESG is expected to encourage the integration of environmental awareness and social responsibility initiatives with good governance so that it can mitigate potential risks and increase profitability and company value (Malik and Kashiramka, 2024; Firmansyah et al., 2023; Alduais, 2023; Alsayegh et al., 2020).

Companies that implement ESG well can ensure shareholder value is created by improving financial performance and management quality and minimizing risks (Zumente and Bistrova, 2021), and this can give a positive impression to creditors in making financing decisions and providing benefit to the company in the capital market (Feng and Wu, 2021). Flammer (2021) provides empirical evidence that issuers of green bonds benefit from a positive market reaction, especially when it is the first ESG issuance and when there is an external assurance. The general public, investors, financial institutions, and non-financial institutions place greater emphasis on the importance of ESG disclosure by companies as one of the key indicators for assessing the company's transparency about its information (Firmansyah et al., 2023). Stakeholders can use ESG disclosures to seek information about a company's opportunities and risks (Almeyda and Darmansya, 2019).

The development of the ESG concept has increased interest in academic research about the relationship between ESG and the cost of capital (Li et al., 2024; Malik and Kashiramka, 2024; Wang et al., 2021; Yu et al., 2021; Zerbib, 2019) and financial performance (Malik and

Kashiramka, 2024; Chen et al., 2023; Mittal et al. 2008; Nollet et al., 2016; Friede et al., 2015; Possebon et al., 2024).

However, some empirical evidence from previous research regarding the relationship between these three variables is not completely consistent. For example, the research results of Raimo et al. (2021), Houqe et al. (2020), Arora and Sharma (2022), and Priem and Gabellone (2024) show that companies that have a higher ESG score tend to have a lower cost of debt or a negative relationship. On the other hand, some previous research had different findings, namely that there are positive relationships (Malik and Kashiramka, 2024; Li et al., 2024) and insignificant relationships (Gigante and Manglaviti, 2022).

Likewise, empirical evidence from previous research on the relationship between ESG scores and financial performance is still inconsistent and still ambiguous (Yang et al., 2023). There are studies that find positive relationships (Malik and Kashiramka, 2024), negative relationship (Nguyen et al., 2022) and insignificant relationships (Firmansyah et al., 2023; Atan, 2016; Glisovic et al., 2012). The different results from previous studies present a research gap for this research. The inconsistency of these findings indicates the possible need to add a moderating variable to the research model (Hair et al., 2021; Baron and Kenny, 1986).

This study adds independent assurance/audit as a moderating variable in the research model to explain the inconsistencies in the previous research. Stakeholder trust in the quality of ESG information in sustainability reports depends, among other things, on whether there is independent assurance or audit regarding the report. The increase in the number of sustainability reports has not been accompanied by an increase in public trust due to a lack of consistency and completeness of information. For several years, the disclosure of information has been unclear and stakeholders have demanded reports that have been assured because they feel that the information tends to only convey good things and does not reflect the full truth about implementation of ESG (Martínez-Ferrero and García-Sánchez, 2017a). Therefore, currently independent assurance has become relevant and has developed rapidly in various countries (Martínez-Ferrero and García-Sánchez, 2017b; Martínez-Ferrero and García-Sánchez; 2018).

Apart from that, analysis of the impact of ESG during the COVID 19 pandemic period is also important to research because the findings are not yet conclusive (Malik and Kashiramka, 2024). Some empirical evidence shows that ESG has no effect on financial performance, cost of debt and company value (Malik and Kashiramka, 2024; Lu and Khan, 2023; Tanjung, 2023; Lin et al., 2023). The positive effects of ESG implementation and disclosure may decrease due to economic uncertainty and market volatility during the COVID 19 pandemic period (Malik and Kashiramka, 2024).

Although independent assurance practices in sustainability reporting have emerged and developed rapidly in developed countries, in developing countries it is still in the formation stage and lags behind developed countries (de Mariz, 2022). Independent assurance is a mechanism for assessing the quality, reliability, and transparency of sustainability reports. The existence of external assurance will improve user perceptions regarding the credibility of sustainability reports (Fernandez-Feijoo et al., 2016). Therefore, assurance statements tend to be used to enhance the credibility and reliability of social and environmental information and to provide greater confidence in the information reported. Because the information disclosed by the company may differ from the information requested by stakeholders, the assurance process can protect the interests of uninformed stakeholders. Independent assurance—which has similarities to the audit of financial statements by public accountants—is a valuable tool for establishing credibility and is useful for overcoming problems of information asymmetry (Martínez-Ferrero and García-Sánchez, 2017b). Research on independent assurance is still very limited (García-Sánchez, 2020; García-Sánchez et al., 2019; Martínez-Ferrero et al., 2018).

This research contributes by explaining the inconsistency of previous research by adding an important variable that has not yet been widely explored in accounting research, namely independent assurance for sustainability reports as a medium for ESG information. This research argues that the effect of ESG on the cost of debt and financial performance depends on independent assurance. Stakeholder trust, which then manifests in financial performance and cost of debt, depends on the credibility of ESG information. If there is assurance of the ESG information in sustainability reports, the positive (negative) effect of ESG on financial performance and the cost of debt will be even greater.

The research also contributes to the novelty of accounting research, namely testing the moderation model during the COVID-19 pandemic period where the empirical evidence from previous research has not been conclusive (Malik and Kashiramka, 2024). This study also contributes to the research on ESG in developing countries by focusing on Indonesia where ESG implementation is still not optimal; this was indicated by the results of the 2019 national ESG survey conducted by the Center for Risk Management and Sustainability. Likewise, the results of research conducted by the Center for Governance and Sustainability NUS Business School (2020) entitled Corporate Sustainability Reporting in ASEAN Countries show that companies in Indonesia have low scores for governance disclosure. Companies that are aware of ESG can ensure that shareholder value is created by improving financial performance and management quality and minimizing risks (Zumente and Bistrova, 2021), and this can give a positive impression to creditors in making financing decisions and providing benefit to the company in the capital market (Feng and Wu, 2021). With the large benefits generated by ESG disclosure, it is natural for companies to pay more attention to their disclosure. However, this is unfortunate for Indonesia because its implementation is not yet optimal. This study also contributes by examining the practice of independent assurance in ESG implementation.

7. Literature review and hypothesis development

This study uses several theories—namely, the legitimacy, agency, and signaling theories—to develop a model of the relationship between ESG, cost of debt, and financial performance which is moderated by independent assurance. Legitimacy theory argues that an entity like an organization or company carries out actions that are considered to be in accordance with what is desired by the system of norms, values, and beliefs (Suchman, 1995). Legitimacy gaps can arise if the values embodied by a company are different from the values that exist in society. This can affect the company's sustainability or its ability to survive. Legitimacy theory is based on the fact that companies can reduce the legitimacy gap and increase their financial performance by disclosing information about their ESG dimensions (Amarna et al., 2024). In practice, the integration of sustainability and financial information can improve a company's management performance and business operations (Boiral, 2013).

The agency theory emphasizes agency problems and the existence of information asymmetry between principals (lenders) and agents (company managers) (Jensen and Meckling, 1976). According to agency theory (Jensen and Meckling, 1976), principals lend money to agents with the expectation of getting back the money that has been lent along with the interest that offsets the risk of providing the capital. The agency theory implies that agents have more complete information about the company than principals, which results in the emergence of information asymmetry (Gerwanski, 2020). Therefore, lenders will reward companies that offer higher transparency over companies that offer less transparency. Therefore, information asymmetry can be reduced by companies providing disclosures to external non-financial parties, such as ESG disclosures, which can be a communication tool to provide information that is not included in financial disclosures (Raimo et al., 2021).

According to the signaling theory, ESG disclosure is believed to be able to provide a positive signal to all stakeholders because it shows that a company, in its operational activities, is not solely focused on profit but instead prioritizes the values, norms, and social values that exist in the community where it operates. ESG disclosure is expected to be a social investment to satisfy stakeholders that will contribute to the value of a company. A company's sustainability also has an impact on its growth (Buallay and Hamdan, 2019). The purpose of ESG disclosure is to convince outside parties about a company's performance or capabilities which are different from other companies in an industry. Signals are given so that investors and analysts can provide an assessment based on the actual condition of a company and not as low as a company whose performance is poor because it can be detrimental to managers (Melinda and Wardhani, 2020). Voluntary disclosure has relevance to company value and cost of equity. Investors can receive signals from companies through ESG disclosures that address concerns about environmental, social, and corporate governance practices. As a positive signal for investors, a company will do its best to provide information about its business performance.

Buallay and Hamdan (2019) explain that the application of the environmental, social, and governance dimensions that constitute the ESG concept will enable entities to minimize the level of business risk will enable entities to minimize the level of business risk arising from operations related to the surrounding social environment. Disclosure about the environmental component of ESG discusses how a company's energy use, waste, use of clean water, environmentally friendly products, conservation of natural resources, behavior that affects flora and fauna, and policies related to the environment; this can be used by stakeholders to evaluate the company's operational entities. Commitment and integrity with regard to the environmental disclosure that a company makes has a positive impact on both the company and its surrounding environment which has an impact on the sustainability of its business operations. When stakeholders consider that the business has a high level of sustainability, this will also attract their attention because they will hope that it can be translated into good financial performance, including increasing product sales.

By using the legitimacy theory, an argument can be made that companies that implement ESG practices are able to perform well and build a good image in the eyes of the community. A company's commitment and seriousness towards various aspects of sustainability as demonstrated by ESG performance can be seen and assessed positively by stakeholders. Companies are increasingly aware that their connection with the communities in which they operate can influence the running of their business. This accords with the legitimacy theory, which emphasizes that companies have a contractual obligation with their social environment to act according to the principles of justice, as well as how management responds to various related groups to gain legitimacy for their actions. A company's disclosures regarding its social and environmental responsibilities will be widely known by various stakeholders such as customers and investors, which has the potential to increase financial performance substantially (Al Amosh et al., 2023).

ESG disclosure from a social perspective is also an important factor in improving a company's financial performance. ESG social criteria show more of the company's external relationships, namely direct or indirect relationships between the company and the community, suppliers, buyers, and other entities. Social disclosure also discusses how companies deal with human rights policies and business ethics policies. As well as other policies related to social issues. When a company is able to address and manage its social disclosure well, it will certainly affect its image and performance. Meanwhile, ESG disclosure has a corporate governance component that focuses on company management from an internal perspective. This disclosure discusses how the company manages its activities such as policies, standards, corporate culture, audit processes, and compliance, among other things that need to be considered. When a company's disclosures related to governance are transparent, in accordance with regulations and codes of ethics, this becomes a positive value that can increase investor confidence to invest their capital in the company and cause consumers to buy its products. Several studies have provided empirical evidence that ESG has a positive impact on corporate financial performance (Malik and Kashiramka, 2024; Chen et al., 2023; Lu and Khan, 2023; Wu et al., 2022). Based on these arguments, the following research hypothesis is proposed:

H_1: ESG disclosure has a positive relationship with financial performance.

Cost of debt is a cost that must be paid by the company to creditors which includes interest on the money borrowed. The cost of debt is influenced by several factors, namely the prevailing interest rates in the market, and credit risk which is the risk that the company will not be able to fulfill its obligations to pay back the principal as well as the interest that is payable. ESG disclosure is an important consideration for external parties, including creditors, when assessing a company's reputation and risks (Almeyda and Darmansya, 2019). In addition, companies making ESG disclosures can help them overcome long-term strategic problems that make it easier for them to achieve their goals (Jeanice and Kim, 2023).

A company with better ESG practices has lower business risk so they are expected to reduce capital costs originating from debt because the cost of interest is based on information about the company's future risk options. Ge and Liu (2015) examine how corporate social responsibility (CSR) performance is associated with the costs of issuing new bonds. They find that better CSR performance is associated with stronger credit ratings. Flammer (2015) analyzed the impact of CSR using a quasi-experimental method and found that managers could benefit from integrating CSR considerations into their strategic planning. Chava (2014) finds that companies with some environmental problems have to pay much higher interest rates on their loans. In general, banks may not have a CSR compliance agenda as a criterion for approving loans. However, banks are interested in assessing a company's repayment capabilities. The findings of Altavilla et al. (2024) in the ECB 2024 working paper series entitled "Climate risk, bank lending and monetary policy", show that banks charge higher interest rates to firms featuring greater carbon emissions, and lower rates to firms assuming lower emissions, controlling for their probability of default. Goss and Roberts (2011) state that companies with higher CSR compliance scores pay lower bank fees compared to companies with lower CSR scores. Consistent with the previous argument, banks also want to lend money to companies that have a higher awareness of CSR activities because such compliance is likely to improve the company's reputation resulting in higher profitability and guaranteed loan repayment ((Malik and Kashiramka, 2024; Yeh et al., 2020). The risk mitigation perspective argues that CSR investments can reduce risks ((Malik and Kashiramka, 2024); thus, creditors are more willing to provide more lenient loan terms to socially responsible companies. Evidence from capital markets shows that a better CSR performance can lower the cost of debt (Yeh et al., 2020).

Apart from the risk of default, the increasing demand for companies to engage in ESG practices also increases lenders' awareness of the risks to a company’s reputation. ESG practices can reduce information asymmetry between lenders and borrowers or companies or organizations which will ultimately be useful for reducing errors in decision-making caused by a lack of information provided. Companies that implement higher quality ESG practices will reflect higher management quality, a better reputation and lower default risk (Oikonomou et al., 2012).

The agency and legitimacy theories indicate that ESG practices will offer non-financial information regarding a company's business operations which can be used by external parties, both from the general public and lenders, to evaluate company risks. Good ESG practices will lead to opinions of external parties that view the company as having fewer risks, thereby reducing the company's cost of debt. This is in accordance with previous research which finds that ESG practices have a negative influence on a company's cost of debt (Malik and Kashiramka, 2024; Eliwa et al., 2021; Li, et al., 2024; Raimo et al., 2021). Based on this, the hypothesis that will be used in this research is as follows:

H_2: ESG disclosure has a negative relationship with cost of debt.

Companies can engage in disclosure of their ESG practices by publishing sustainability reports to improve the company's reputation in the eyes of external parties. The urgency and importance of ESG disclosure practices for external parties in making their decisions stimulates the need for sustainability reports to be assured by independent external parties. Companies that use independent assurance services will increase their credibility, value, and reputation and ensure that the non-financial information they disclose is accurate and in accordance with applicable standards. In order to develop and maintain accountability for information about ESG implementation, the role of external assurance becomes crucial to ensure that non-financial information is accurate and in accordance with reporting standards (Perego and Kolk, 2012; Simnett et al., 2009). Therefore, a company using external assurance will guarantee the accuracy of ESG information disclosure which will then strengthen the negative relationship between ESG disclosure and it's cost of debt.

According to KPMG (2015), the use of independent assurance for corporate CSR reports has more than doubled from 30% in 2005 to 63% in 2015 (100 largest companies from 45 countries). These data prove that assurance of CSR reports is considered important to increase the credibility and reliability of those reports, such as external audits for financial reporting (Liao et al., 2018). However, unlike financial reports, CSR assurance is voluntary and not mandatory in the context of sustainable or integrated reporting (Maroun, 2020). There are various benefits of assurance that have been mentioned in empirical studies. Among them is one by Kim et al. (2019) who find that there is an important role of CSR information assurance services in the relationship between CSR performance and shareholder value. Therefore, companies whose CSR performance uses external guarantees achieve better financial performance than other companies that do not use guarantees for their CSR performance. Birkey et al. (2016) find that assurance in reports is significantly related to environmental reputation.

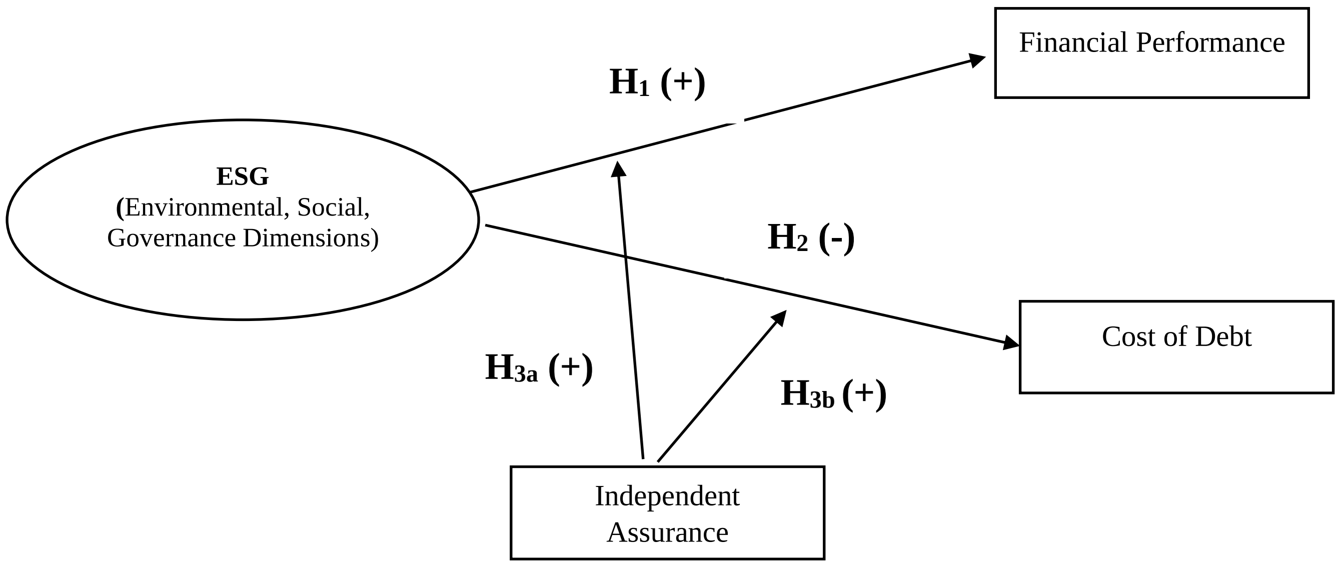
Inconsistent and incomplete disclosure in the sustainability reports published by companies can result in external parties having reduced trust in those reports (Manetti and Becatti, 2009). Therefore, the use of independent assurance to guarantee a company's sustainability report is one option that companies can use. Companies that use external assurance to guarantee their sustainability reports will generally produce better disclosures in that year and the following year (Uyar et al., 2023). This is supported by research (Michelon et al., 2018; Moroney et al., 2012; Rossi and Tarquinio, 2017) which finds that company sustainability reports that have independent assurance have significantly higher credibility than those that are not guaranteed in that way. However, unlike financial information in financial reports which must be accompanied by external assurance, it is still voluntary for companies to use external assurance on non-financial information in sustainability reports. Casey and Grenier (2015) and Weber (2018) find that the presence of independent assurance is associated with a lower cost of capital, fewer errors, and less dispersion in the estimates of analysts than in cases where companies do not provide it. This research uses the signal theory to explain whether the quality of assurance moderates the effect of disclosure in sustainability reports on the cost of share capital and the cost of debt capital. The use of independent assurance services is a signal for investors and creditors that information asymmetry is reduce meaning it can strengthen the positive (negative) relationship of ESG with financial performance (cost of debt).

H_{3a}: Independent assurance strengthens the positive relationship of ESG disclosure with financial performance.

H_{3b}: Independent assurance strengthens the negative relationship of ESG disclosure with cost of debt.

Figure 1 depicts the research model in this study. ESG is analyzed as a latent/construct variable or unobserved variable which has three dimensions which are environmental, social, and governance. ESG as an independent/exogenous variable is hypothesized to have a positive (negative) relationship with financial performance and cost of debt. The two dependent/endogenous variables are observed variables which are proxied respectively by return on assets (ROA) and the ratio of cost of interest to total long-term debt. Independent assurance is hypothesized as a moderating variable that can strengthen the positive (negative) relationship of ESG and financial performance (cost of debt).

Figure 1.
Research model



8. Research Methods

3.2 Population and Sample

The population of this study is all Indonesian companies listed on the Indonesian Stock Exchange (IDX) during the period 2020-2022. The sample was selected using a non-probability sampling method and purposive sampling, with the criteria being non-financial companies that were listed on the IDX between 2020 and 2022 and that published sustainability reports during that period.

3.2. Measurement of Variables

The dependent variables are financial performance and cost of debt. Financial performance is measured using the return on assets (ROA) proxy. Meanwhile, the cost of debt is measured using the ratio of the total cost of interest divided by total long-term debts. The independent variable, namely ESG disclosure, can be measured using the content analysis method from the Global Reporting Initiative (GRI) index. The content analysis assessment uses 35 indicator points for the environmental dimension, 37 indicator points for the social dimension, and 30 indicator points for the governance dimension. If the company makes disclosures according to the indicator points, it will be given a score of 1 and if not, it will be given a score of 0. Then, divide the company's total score by the total score of all existing indicators. The researchers use independent or external assurance in sustainability reports as a variable that moderates the relationship between ESG disclosure and financial performance and the cost of debt. The measurement of this moderating variable uses a dummy variable: if the company uses independent assurance, it is given a score of 1 and otherwise, it is given 0. This study uses a control variable, namely firm size, which is measured using the natural logarithm of total assets (Eliwa et al., 2021).

3.3. Data Analysis Technique

Data analysis in this study used the partial least squares-structural equation modeling (PLS-SEM) method. The software used is Warp PLS 8.0. PLS is one of the methods for implementing structural equation models. PLS is employed because the measurement of ESG variables uses three formative indicators (Hair et al., 2022; Ratmono et al., 2021; Kock, 2020). By using PLS, the results of simultaneous hypothesis testing can be obtained.

9. Results and discussions

9.1. Descriptive statistics

Table 1 presents the population and sample size for this study based on purposive sampling criteria. According to the data in Table 1, it appears that the number of issuers on IDX who publish sustainability reports is still limited, namely 93 out of 608 companies (15.29%).

Table 4. Research population size and samples

No	Description	Number
1.	Non-financial companies listed on the IDX 2020-2022	608
2.	Non-financial companies that did not publish sustainability reports 2020-2022	(515)
3.	Non-financial companies that published sustainability reports 2020-2022	93
4.	Number of research samples (93 x 3)	279
5.	Number of Outliers	(26)
6.	**The number of research samples used**	253

Next, descriptive statistical analysis was carried out to provide an overall picture of the data from the companies in the research sample with statistical information such as maximum, minimum, mean, and standard deviation. Descriptive statistical analysis on dummy variables is different from other variables. For dummy variables, descriptive statistical analysis provides an overview of their distribution in the research sample. In this study, the results of descriptive statistical analysis of independent, dependent, moderating and control variables are presented in Table 2. The control variable used is company size which is measured using the natural logarithm of total assets (Eliwa et al., 2021).

Table 5. Descriptive statistics

Variable	Minimum	Maximum	Mean	Median	Std. Dev
ESG	0.3333	0.9804	0.6059	0.5980	0.1489
Environmental	0.1142	0.9714	0.5389	0.5142	0.2588
Social	0.0810	1.0000	0.4834	0.4864	0.1913
Governance	0.4333	1.0000	0.8388	0.8666	0.1384
Financial performance	-0.4626	0.5573	0.0599	0.0444	0.1015
Cost of debt	0.0001	0.1872	0.0738	0.0705	0.0405
Size	27.2775	33.6551	30.3295	30.3097	1.3660

The results of the descriptive statistical analysis show that the ESG disclosure of companies in Indonesia has a mean value of 0.6059 or 60.59%. Companies in Indonesia tend to focus their ESG disclosures on the governance dimension which is supported by the highest mean value of 83.88%. On the other hand, ESG disclosure in the social and environmental dimensions is still relatively low with averages of 53.89% and 48.34% respectively, so companies in Indonesia need to improve further their disclosure about these dimensions.

The dependent variable financial performance, which is proxied by ROA, has a mean value of 0.0599. This implies that companies in Indonesia have not been able to maximize the income that can be obtained from all of their assets in 2020-2022. The highest ROA value was obtained by Garuda Indonesia in 2021 where the company experienced quite large losses so that its ROA value was negative, namely -0.4626. On the other hand, the lowest ROA value was obtained by Indo Tambangraya Megah in 2022 is 0.5573, which shows that this can make good use of all of its assets to gain profits.

According to Table 2, the mean of cost of debt is 0.0738. The lowest cost of debt value obtained by PT Bumi Resources Mineral Tbk was 0.0011 in 2020, which shows that this company bears the smallest cost of debt for its debt. On the other hand, the highest cost of debt value in the sample was obtained by PT Jasuindo Tiga Perkasa Tbk in 2021 was 0.1872, which indicates that this company bears the largest cost of debt among the companies in this research sample.

Table 6. Frequency of most often disclosed ESG Items

No.	Environmental Dimension	
	Items/Indicators	**Percentage**
1.	The process or guide determines the material topics	99%
2.	List of material topics	99%
3.	Management material topics	99%
4.	Energy consumption in the organization	97%
5.	Negative environmental impacts in the supply chain and actions taken	94%
	Social Dimension	
No.	**Items/Indicators**	**Percentage**
1.	Non-compliance with laws and regulations in the social and economic fields	88%
2.	Average training hours per year per employee	86%
3.	Occupational health and safety management system	84%
4.	Disclosure, hazard identification, risk assessment, and incident investigation	81%
5.	Recruitment of new employees and employee turnover	80%
No.	**Governance Dimension**	
	Items/Indicators	**Percentage**
1.	Governance structure and composition	100%
2.	Details of the organization	100%
3.	Activities, value chains and other business relationships	100%
4.	Labor	100%
5.	Statement on sustainable development strategy	100%

Table 3 displays the environmental, social, and governance disclosure indicators that companies most frequently disclose. Nearly all (94%) of the companies in the research sample disclosed information covered by five indicators in the environmental dimension in their sustainability reports. Furthermore, in the social dimension, 80% of the research sample disclosed all of the five indicators shown in Table 3 in the social dimension in their sustainability report. Finally, in the governance dimension, the entire sample of companies disclosed information related to the five governance indicators in their sustainability reports.

Table 4. Least frequent items in ESG disclosures

No.	Environmental Dimension	
	Items/Indicators	**Percentage**
1.	Reduction in the energy required for products and services	28%
2.	IUCN Red List species and national conservation list species with habitats within areas affected by operations	26%
3.	Ozone depleting emissions	25%
4.	Selection of new suppliers using environmental criteria	23%
5.	Negative environmental impacts in the supply chain and actions taken	9%
No.	**Social Dimension**	
	Items/Indicators	**Percentage**
1.	Operations and suppliers where the right to freedom of association and collective bargaining may be at risk	19%
2.	Incidents of violations involving the rights of indigenous peoples	13%
3.	Security officers trained in human rights policies or procedures	9%
4.	Negative social impacts in the supply chain and actions taken	8%
5.	Political contributions	5%
No.	**Governance Dimension**	
	Items/Indicators	**Percentage**
1.	The role of the board of commissioners in overseeing impact management	66%
2.	Workers who are not direct employees	52%
3.	Annual total compensation ratio	45%
4.	Instilling of policy commitment	43%
5.	Process to correct negative impacts	37%

Table 4 summarizes the indicators least frequently displayed by the sustainability reports of the companies in the sample. For the environmental dimension, the indicator that is least disclosed is the negative environmental impact in the supply chain and the actions that have been taken, where only 9% of the sample disclosed it. Furthermore, for the social dimension, the indicator that is least disclosed is the company's political contribution, where only 5% of the companies disclosed it. Finally, for the governance dimension, the indicator that is least disclosed is the process for correcting negative impacts, where disclosure is only made by 36% of the sample.

Table 5. Frequency distribution of the independent assurance variable

Score	Criteria	Number	%
1	Companies that use assurance for their SR	53	21.00%
0	Companies that do not use external assurance for SR	200	79.00%

Table 5 presents frequency data for the independent assurance variable. Table 5 presents information regarding the moderating variable, namely independent assurance in sustainability reports for all companies in the research sample. The result is that there are 53 firm-year observations where independent assurance is used for sustainability reports or 21.00% of the data from the total sample, while the other 200 firm-year observations (79.00%) in the total sample still do not use independent assurance to verify their sustainability reports. These results still show the low level of the practice of using independent assurance for issuers' sustainability reports in Indonesia, namely 21.00% of the total sample.

Table 6. Independent assurance providers

Public Accounting Firm	
Name	**Number**
Moores Rowland Indonesia	26
KPMG Phoomchai Audit Ltd	1
PwC	1
Total	**28**
Other than Public Accounting Firms	
Name	**Number**
PT. TUV Rheinland Indonesia	5
Social Responsibility Asia	12
SGS Indonesia	3
Bureau Veritas Indonesia	2
LRQA	2
PT Sucofindo	1
Total	**25**

Table 6 presents data on independent assurance service providers. Of the 53 samples that used independent assurance services, 28 of them (52.83%) used the services of a public accounting firm. Meanwhile, 25 (47.16%) used services other than public accounting firms.

4.2 Hypothesis testing

This study used the PLS-SEM method for hypothesis testing because there is a latent variable, namely ESG. PLS-SEM analysis was carried out in two stages, namely evaluation of the measurement model and structural model (Ratmono et al., 2021; Hair et al., 2022). The evaluation of the measurement model in this study was conducted to evaluate the feasibility of the formative measurement model for the ESG variable. The formative measurement model is declared feasible if the weight indicator is significant (p-values <0.01) and there is no multicollinearity (VIF <5) (Hair et al., 2022; Kock, 2020). The ESG variable in this study uses three formative measurement indicators, namely environmental, social, and governance indicators. The results in Table 7 show that the measurement model of the ESG is acceptable, with a positive significant weight value for these three indicators having a p-value < 0.01 and a VIF value of each indicator < 5.

Table 7. Results of the Measurement Model Evaluation

Dimensions	Parameter	Result	Rule of thumb	Conclusion
Environmental	P-value	< 0.001	P-values < 0.01	Accepted
	VIF	1.945	VIF < 5	Accepted
	Weight	0.429	Positive	Accepted
Social	P-value	< 0.001	P-values < 0.01	Accepted
	VIF	1.952	VIF < 5	Accepted
	Weight	0.429	Positive	Accepted
Governance	P-value	< 0.001	P-values < 0.01	Accepted
	VIF	1.271	VIF < 5	Accepted
	Weight	0.353	Positive	Accepted

After the measurement model stages are fulfilled, the next stage is testing the structural model. Evaluation of the structural model in this study was carried out by looking at the percentage of variance explained by looking at the model's goodness of fit, and full collinearity VIF as well as the significance value of the path coefficient. From the results of the model fit output (Table 8), it can be seen that the model has a good fit, indicated by all indicators meeting the criteria in the rule of thumb (Kock, 2020).

Table 8. Model fit indices

Criteria	Result	P-Values	Rule of thumb
Average Path Coefficient (APC)	0.132	0.008	P < 0.05
Average R-Square (ARS)	0.069	0.041	P < 0.05
Average Block VIF (AVIF)	1.100		≤3.3
Average Full Collinearity VIF (AFVIF)	1.491		≤3.3
Tenenhaus GoF (GoF)	0.256		≥0.10
Sympson's paradox ratio	0.833		≥ 0.70
R-squared contribution ratio	0.992		≥ 0.90
Statistical suppression ratio	0.833		≥ 0.70

After the goodness of fit evaluation met the criteria, hypothesis testing was carried out using PLS-SEM to evaluate the path coefficient and its significance. The results of the PLS-SEM test are presented in Figure 2 which consists of the standardized path coefficient, p-value, and coefficient for the determination of R^2 according to the output from the WarpPLS 8.0 software.

Figure 2
Structural model testing result

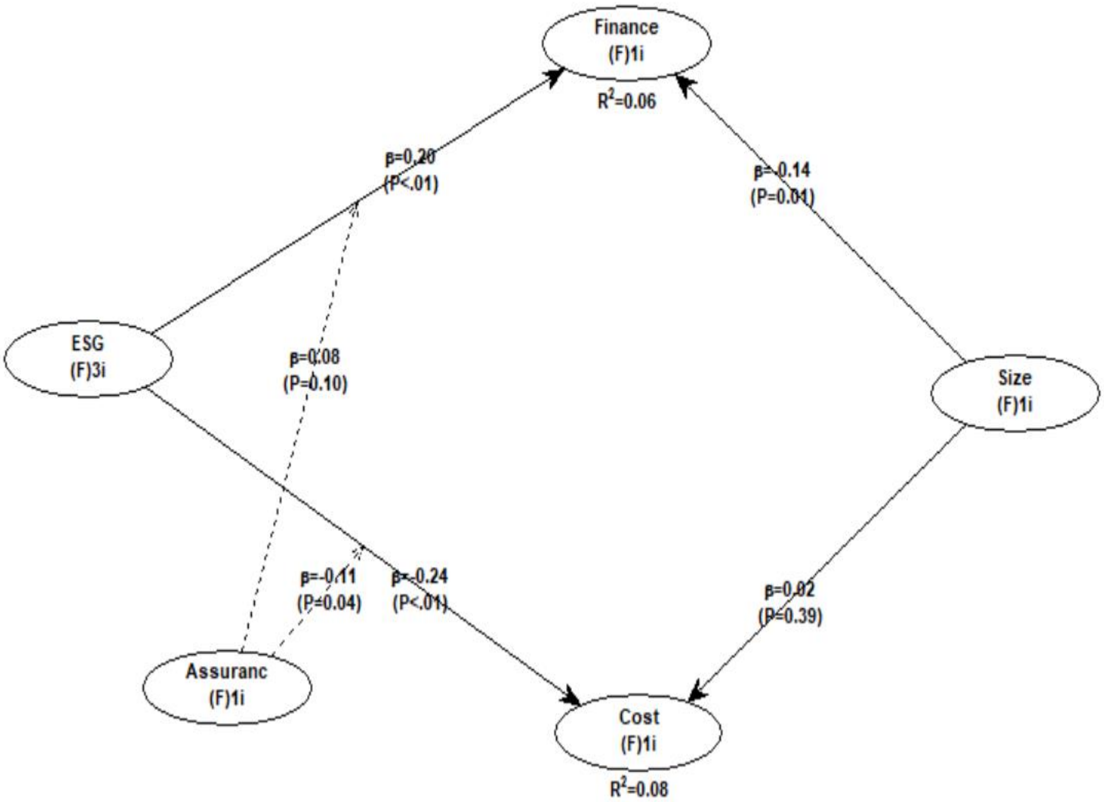


Table 9 presents the results of hypothesis testing based on PLS-SEM structural analysis. ESG has a positive relationship with financial performance with a coefficient of 0.203 and is significant with a p-value <0.001, so H_1 is supported. In accordance with H_2, ESG has a negative relationship with the cost of debt with a coefficient of -0.245 and is significant with a p-value <0.001. Table 9 also shows the results of testing the moderating effect of PLS-SEM using a two-stage approach as recommended by Hair et al. (2022). The test results show that H_{3a} is not supported with an interaction effect coefficient of 0.080 and is not significant. H_{3b} is supported by an interaction coefficient of -0.311 and a p-value of 0.036 so it is significant at an alpha of 5%. This shows that independent assurance strengthens the negative relationship of ESG with the cost of debt.

Table 9. Path coefficients and p-values results

Structural/hypothesized paths	Parameter (β)	p-value	Results
ESG → Financial Performance	0.203	<0.001	Supported
ESG → Cost of Debt	-0.245	<0.001	Supported
ESG*Assurance→ Financial Performance	0.080	0.099	Not Supported
ESG*Assurance→ Cost of Debt	-0.311	0.036	Supported

Further analysis was carried out using multigroup analysis as recommended by Hair et al. (2022) because the independent moderation variable assurance is categorical (has-assurance versus has-no-assurance). Testing was carried out using the pooled standard error and Satterthwaite methods as recommended by Kock (2020). The test results are presented in Table 10. Panel A shows that there is no significant difference in the coefficient of the effect of ESG on financial performance for the has assurance and has no assurance groups (p-values using the pooled standard error and Satterthwaite methods are 0.389 and 0.386, respectively). Although the coefficient for the has-assurance group is greater than the has-no-assurance group (0.156 vs 0.198), the difference in coefficient is not statistically significant. On the other hand, the results in panel B show that there is a significant difference in the coefficient of the effect of ESG on the cost of debt for the has-assurance and has-no-assurance groups (p-values using the pooled standard error and Satterthwaite methods are 0.032 and 0.049, respectively). The negative effect of the has-assurance group is greater than the has-no-assurance group (-0.428 vs -0.160) meaning that the results of the multigroup analysis are consistent with the results in Table 6 that show that assurance strengthens the negative effect of ESG on the cost of debt.

Table 10. Multigroup analysis

Panel A. Multigroup analysis of the effect of ESG on financial performance

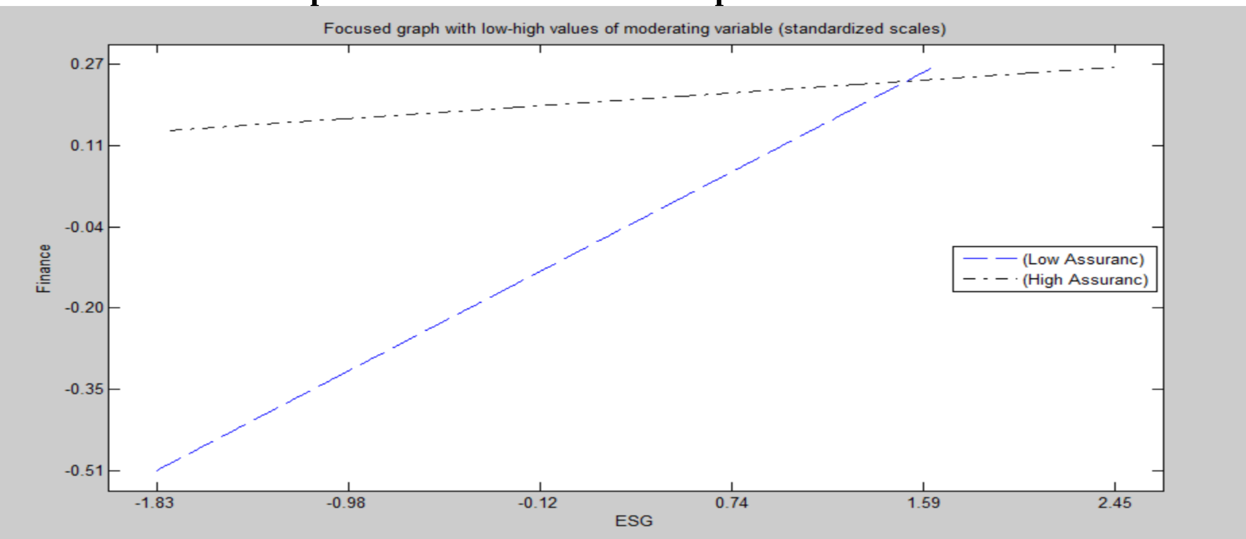
	Without assurance	With assurance
Coeficient	0.156	0.198
p-value	0.012	0.064
p-value (significance) of the difference in coefficients		
Pooled standard error method	0.389	
Satterthwaite method	0.386	

Panel B. Multigroup analysis of the effect of ESG on cost of debt

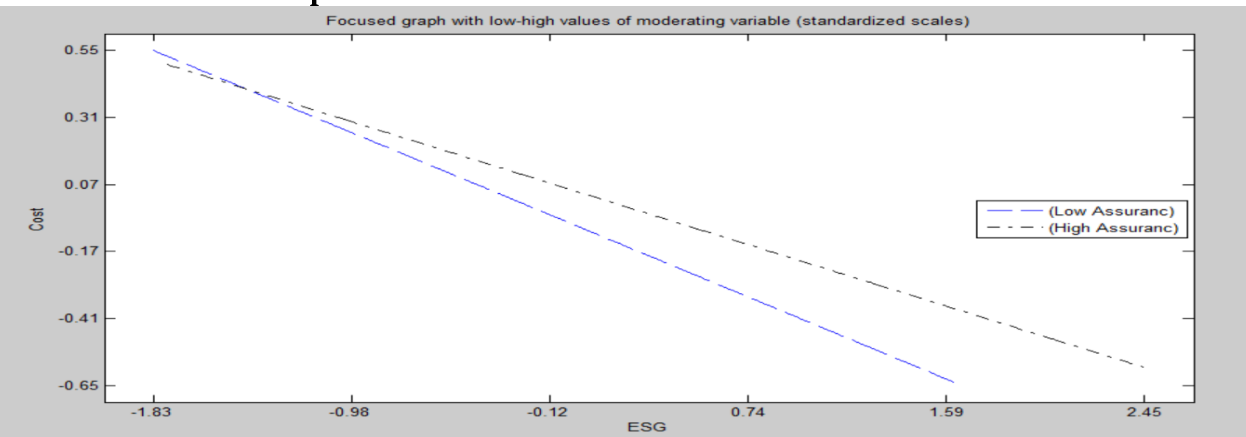
	Without assurance	With assurance
Coeficient	-0.160	-0.428
p-value	0.010	<0.001
p-value (significance) of the difference in coefficients		
Pooled standard error method	0.032	
Satterthwaite method	0.049	

In order to clarify the results of testing the moderating effect, we followed the recommendations of Hair et al. (2022), namely by presenting a graphic illustration of the slope plot of the moderating effect of independent assurance as shown in Figure 3. In panel A, it appears that the slope plot of the effect of ESG on financial performance is higher for good assurance than for less good assurance. However, the slope plot of the effect of ESG on financial performance for good assurance becomes flatter than for less good assurance, thus indicating that independent assurance does not strengthen the positive effect of ESG on financial performance. The positive effect of ESG on financial performance does not depend on whether there is assurance regarding the disclosure of ESG information in sustainability reporting.

Figure 3
Moderating effect plot
Panel A. Plot of the slope indicating the moderating effect of independent assurance on the relationship between ESG and financial performance



Panel B. Plot of the slope indicating the moderating effect of independent assurance on the relationship between ESG and cost of debt



Panel B shows that the slope plot of the effect of ESG on the cost of debt is steeper and straighter with good assurance. These results show that in a situation where there is good independent assurance, the negative effect of ESG on the cost of debt becomes stronger (Hair et al., 2022). On the other hand, the slope plot of the negative effect of ESG on the cost of debt becomes flatter when there is less good independent assurance. This means that in situations where there is less good independent assurance, the negative effect of ESG on the cost of debt becomes weaker (Hair et al., 2022). This additional analysis shows support for the hypothesis that independent assurance strengthens the negative effect of ESG on the cost of debt. Empirical evidence shows that creditors need guarantees from independent parties to verify the accuracy and reliability of ESG disclosure information in sustainability financial reports before deciding upon lower interest charges. Creditors need more reliable and relevant information that has been provided with assurance in order to assess the company's business risks which are reflected in the ESG practices of the prospective debtor.

4.3. Discussion

This study provides empirical evidence that supports the legitimacy and signaling theories according to which ESG disclosure can create a good image for a company and thereby it can gain legitimacy in the eyes of stakeholders. Apart from that, information about ESG can be a positive signal for stakeholders which will further increase product sales and this will then translate into an improved financial performance. The implementation of ESG can improve financial performance by providing opportunities for companies to support sustainability, build a solid reputation, gain the trust of stakeholders, and contribute to addressing sustainable development issues at the national level (Chen et al., 2023). These findings support previous research which has found that implementing ESG can improve a company’s financial performance (Chen et al., 2023; Lu and Khan, 2023; Malik and Kashiramka,2024; Wu et al., 2022).

This research also provides empirical evidence showing that a company’s ESG disclosure has a significant negative relationship with cost of debt. This is because lenders not only assess the company's risk based on its profitability but also use ESG disclosure to assess it. Therefore, more ESG disclosure will significantly reduce a company's cost of debt. This empirical evidence also supports the legitimacy theory according to which companies will try to be seen as operating in accordance with societal norms. This empirical evidence supports the argument of Eliwa et al. (2021) that companies need to provide something that can influence the public's assessment and to gain their recognition, such as by making ESG disclosures. Companies that have poor ESG disclosure will tend to have a higher cost of debt because they will have difficulty getting support from external parties who will consider such companies to be riskier, which will result in an increase in their cost of debt. Apart from that, the empirical evidence from this study also supports the agency theory which focuses on information asymmetry problems that arise between a company and external parties, as well as how to deal with these information asymmetry problems. In this context, companies' financial reports are not enough to reduce information asymmetry, so they need to take other steps to increase their transparency to external parties. One way to minimize the emergence of information asymmetry according to agency theory is to offer more transparency, such as by making ESG disclosures. More ESG disclosure will minimize the emergence of information asymmetry between internal and external parties such as lenders because it can reduce the level of company risk which results in lower interest rates and a lower cost of debt. ESG disclosure plays an important role in sustainable finance and is not necessarily a tool for greenwashing. As ICMA (2023) found that greenwashing is not common in the green bond market, but the ambition and materiality in the early development of the new sustainability bond market may be inadequate. This empirical evidence is consistent with previous research (Xu et al., 2021; Eliwa et al., 2021; Malik and Kashiramka, 2024; Raimo et al., 2021) which finds that ESG disclosure has a significant negative relationship with the cost of debt.

The results of the testing of the moderating effect show that independent assurance does not strengthen the positive relationship of ESG disclosure with financial performance. This positive relationship remains whether or not an external, independent party assures the ESG disclosures. This shows that stakeholders such as consumers and investors do not need the confidence that independent assurance provides regarding the good image that a company has built through its disclosure of ESG information. On the contrary, this study's empirical evidence shows that independent assurance can strengthen the negative relationship of ESG disclosure with the cost of debt. This finding could mean that creditors need independent assurance regarding ESG disclosures to believe in the credibility of information in sustainability reporting in credit-granting decisions. The empirical evidence from this study supports previous research (Michelon et al., 2018; Moroney et al., 2012; Rossi and Tarquinio, 2017; Uyar et al., 2023) that has found that the existence of independent assurance will strengthen the negative effect of ESG on the cost of debt.

10. Conclusions

This study shows that the level of ESG disclosure can be categorized as moderate, namely 65% of full disclosure. The governance dimension is the one that is expressed the most, compared to the other two dimensions. Apart from that, the use of independent assurance is still relatively low, namely 21% of the whole sample. This study concludes that the implementation of ESG as disclosed in sustainability reporting has a positive impact on companies in terms of improving financial performance and reducing the cost of debt. This empirical evidence demonstrates the important role of implementing ESG, including in developing countries such as Indonesia from which the sample was drawn for this research.

This research contributes by explaining inconsistencies in previous research findings by adding independent assurance as a moderating variable. Using this research model, the authors argue that the impact of ESG disclosure on financial performance and debt costs increases with whether there is assurance regarding ESG disclosure in sustainability reporting. The empirical evidence of this study also has managerial implications regarding the role of ESG in improving financial performance and reducing the cost of debt. Empirical evidence shows that independent assurance has an important role for directors in order that they feel the ESG information in risk assessment is credible meaning that the negative relationship of ESG with the cost of debt is stronger if there is assurance. However, the role of assurance is not significant for stakeholders such as consumers and investors, indicating an insignificant moderating effect.

This study has limitations, including the fact that the ESG measurements are limited to information available in sustainability reporting and not from other data sources. However, the choice of research design is reasonable because the majority of ESG information is presented in sustainability reporting. Another limitation is the use of proxies for the variable measurement. Moreover, the sample is only from one country and only covers data for 3 years. However, this study contributes by providing empirical evidence on the implementation of ESG in developing countries which is still limited. In addition, this research contributes by explaining the role of independent assurance in strengthening the relationship ESG with financial performance and the cost of debt.

Author contributions

Conceptualization: DD, DR,
Data collection: DR, AT, DD, TC
Formal analysis: DR, DD, TC
Methodology: DD, DR

Project administration and software: DR, AT, TC
Validation: DR, DD
Writing – original draft: DD, DR, AT, TC
Writing – review and editing: DD, DR, AT, TC
All authors agree to be accountable for all aspects of the work.

Data availability statement
The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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TANGGAPAN REVIEWERS TERHADAP ARTIKEL YANG SUDAH DIREVISI

Cogent Business & Management<onbehalfof@manuscriptcentral.com>

To:
Darsono
Cc:
Darsono;dwi.ratmono2@gmail.com;+2 others

Wed 27/11/2024 22:23

27-Nov-2024

Dear Dr Darsono Darsono:

Ref: The relationship between ESG, financial performance, and cost of debt: The role of independent assurance

Our reviewers have now considered your paper and have recommended publication in Cogent Business & Management (Open Research). We are pleased to accept your paper in its current form which will now be forwarded to the publisher for copy editing and typesetting. The reviewer comments are included at the bottom of this letter.

You will receive proofs for checking, and instructions for transfer of copyright in due course.

The publisher also requests that proofs are checked through the publisher's tracking system and returned within 48 hours of receipt.

Thank you for your contribution to Cogent Business & Management (Open Research) and we look forward to receiving further submissions from you.

Sincerely,

Dr Thomas G. Pittz
Deputy Academic Editor
Cogent Business & Management (Open Research)

Reviewer(s)' Comments to Author:
Reviewer: 1

Comments to the Author
Congratulations on the revised version of the paper. best regards

Reviewer: 2

Comments to the Author
Dear authors, I congratulate you on your study undertaken. One can see that the article is well

researched and well documented. I leave below some opinions regarding this work:

The article is well structured, with a clear introduction, a review of relevant literature, and a detailed methodological section. The results are clearly presented, and the tables are well organized, providing a comprehensive overview of the data collected and analyzed. The use of the PLS-SEM method is particularly appropriate for analyzing complex relationships between variables, reinforcing the study's methodological rigor. Furthermore, the research makes an original contribution by including independent assurance as a moderating variable, addressing inconsistencies identified in previous literature and offering fresh insights into the topic. Notably, the analysis was conducted in the context of the COVID-19 pandemic, which adds significant practical relevance to the findings, as it reflects the unique challenges and opportunities during this period. Grounded in contemporary issues such as sustainability and reducing financing costs, the study holds strong implications for both academic and practical advancements in the field.

Elements that could be improved

- There is a limitation of the time period analyzed (2020-2022), which reduces the generalizability of the findings.
- The evidence is limited to Indonesian companies, and this should be discussed in more detail in the limitations section to avoid generalizations.
- The discussion of managerial implications remains somewhat sketchy; it might be useful to explore how the results can be applied to different industries or markets.
- It could explore in more detail how different ESG reporting frameworks (e.g. GRI vs SASB) may influence the results.
- In addition, future research could examine other emerging markets to see if the findings are replicable.
- The study could benefit from including a comparison between developed and emerging markets to highlight the particularities of the Indonesian market.

In conclusion, the study brings an important perspective on emerging markets, for which I congratulate the authors.

NOTIFIKASI ACCEPTED

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OABM-production@journals.tandf.co.uk

To: Darsono

Fri 29/11/2024 07:56

Taylor & Francis Group
an informa business

Dear Darsono Darsono,

Congratulations! We are pleased to share that your article "The relationship between ESG, financial performance, and cost role of independent assurance" has been accepted for publication in Cogent Business & Management.

To move forward with publication, we need you to review and accept the terms and conditions of an author publishing agr

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