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Determinants of Carbon Emission Disclosure on Environmental Performance with Green Investment as a Moderating Variable

Hariatih[1*], Ridhan Rahmah[1]

[1] Institut Teknologi dan Bisnis Nobel Indonesia, Makassar, Indonesia

[*] *Corresponding author: Hariatih (hariatih@nobel.ac.id)*

Abstract

Climate change, driven by carbon emissions, has prompted companies to enhance transparency through carbon emission disclosure. However, the relationship between carbon emission disclosure and environmental performance remains debated, particularly due to the lack of an operational mechanism linking the two. This study aims to examine the effect of carbon emission disclosure on environmental performance and to test the moderating effect of green investment. The sample consists of 6 Sharia-compliant companies listed on the Sri-Kehati Index at the Indonesia Stock Exchange from 2020 to 2024, yielding 30 observations. Data were analyzed using a quantitative approach with Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS version 4. The results indicate that carbon emission disclosure has a positive and significant effect on environmental performance. Furthermore, green investment significantly strengthen this relationship. These findings confirm that carbon emission transparency must be followed by tangible resource allocation to green initiatives to generate substantive environmental impact. The study offers practical implications for regulators and firms in designing effective sustainability strategies grounded in Sharia values.

Keywords

Carbon Emission Disclosure, Environmental Performance, Green Investment, Sustainability.

1. Introduction

Climate change is one of the most pressing global challenges today, and carbon emissions are a key driver of this phenomenon (Bhat et al., 2022; Najia et al., 2025). Disclosure of carbon emissions by companies is becoming increasingly important, not only as a form of social responsibility but also as a tool to increase transparency and accountability in business practices (Cappellieri et al., 2025). Research into the factors influencing carbon emissions disclosure can provide important insights into corporate policies and strategies for managing their environmental impact. Standards related to social responsibility, particularly regarding social issues, were established by the Indonesian Institute of Accountants through Statement of Financial Accounting Standards (*Pernyataan Standar Akuntansi Keuangan*/PSAK) Number 1 of 2019. This standard examines companies' transparency in implementing social responsibility, particularly regarding the environment (Natalia, 2022). Therefore, companies that are highly concerned with environmental issues will have an impact on investment value and other benefits.

A company's environmental performance is often assessed by how well it manages carbon emissions and other environmental impacts (Bakry et al., 2023). On the other hand, green investment has emerged as a promising solution to reduce the negative impacts of industrial activities on the environment (Rosyid & Mulatsih, 2024; Wati & Latifah, 2024; Gunawan et al., 2024). This investment focuses not only on economic returns but also on sustainability and environmental preservation. In this study, green investment can serve as an moderating variable linking carbon emission disclosure and environmental performance (Rachmawati, 2021). Excellent environmental performance is key to creating a sustainable environment. As a form of social responsibility, companies must prioritize environmental performance. Investors also use environmental performance as a basis for investment decisions. Therefore, good environmental performance will enhance a company's legitimacy in the public eye (Hadiwibowo et al., 2023; Rizqulloh et al., 2024).

Sustainability-oriented green investment not only encourages companies to be more transparent about their environmental impact but also provides financial incentives to adopt environmentally friendly practices (Peng, 2024; Mei & Zhang, 2025). With increasing investor interest in good environmental performance, companies that actively disclose carbon emissions tend to attract more green investment, which in turn can improve their environmental performance (Huynh et al., 2025). The implementation of carbon emission disclosure is a crucial factor impacting environmental performance. This implementation motivates companies to pay greater attention to environmental issues, particularly the carbon emissions generated by their industrial activities (Sisdianto et al., 2024; Maryati & Soediro, 2024). Unfortunately, many large companies are still reluctant to implement carbon emission disclosure because they are considered less likely to contribute to increased profits and actually increase company costs. Research by Hidayat et al. (2022) shows that environmental performance significantly influences carbon emission disclosure. Conversely, research by Maulana et al. (2021) shows that environmental performance has no effect on environmental disclosure.

To encourage companies to improve carbon emission disclosure, companies can utilize green investment as an effort to manage the environment. Green investment is a preventative measure taken by companies to preserve the environment and minimize the impact of their business activities by providing financing for environmentally friendly projects. Research by Novia and Candy (2023) shows that green investment impacts financial performance. Meanwhile, research by Dani and Harto (2022) indicates that green investment has no impact on carbon emission disclosure. The difference between this study and previous studies is that the research subjects used companies listed on the Sharia-compliant Sri-Kehati index,

which is incorporated in the Indonesia Stock Exchange, generally have different characteristics than non-Sharia-compliant companies. These distinct characteristics include environmental and social awareness and good corporate governance. This serves as a signal for companies to increase their concern for environmental issues, making carbon emission disclosure a key element to implement, thereby improving their environmental performance.

Understanding the relationship between the determinants of carbon emission disclosure and environmental performance, as well as the role of green investment as an moderating variable, is crucial for creating effective strategies to address climate change and promote sustainability in the industrial sector (Sorroche et al., 2023). This aligns with the company's vision, particularly to promote national independence and create new opportunities through a green economy. The objectives of this study are to determine how carbon emission disclosure affects a company's environmental performance, moderated by green investment.

2. Literature Review and Hypothesis Development

2.1. Carbon Emission Disclosure and Environmental Performance

Carbon Emission Disclosure (CED) refers to the voluntary or mandatory disclosure of the amount, sources, and management strategies of greenhouse gas (GHG) emissions, primarily carbon dioxide (CO_2), in corporate reports or platforms such as the Carbon Disclosure Project (CDP) (Hariatih et al., 2024). As a key component of the Environmental, Social, and Governance (ESG) framework, the development of CED has been driven by increasing global pressure on climate change, particularly following the Paris Agreement (2015) and regulatory initiatives such as the EU Corporate Sustainability Reporting Directive (CSRD). Grounded in Stakeholder Theory, CED reflects corporate efforts to address the interests of stakeholders, including society, investors, and regulators, through enhanced environmental transparency (Mansour et al., 2025).

Environmental performance refers to an organization's ability to minimize negative environmental impacts through effective resource management, waste reduction, energy efficiency, and emissions mitigation (Wang et al., 2025). Unlike narrative-based environmental disclosure, environmental performance is objective and measurable, commonly assessed using indicators such as carbon emission intensity, renewable energy consumption, waste generation, water use efficiency, and recycling rates. From the Resource-Based View (RBV), superior environmental performance demonstrates a firm's capability to manage valuable and scarce resources, thereby contributing to sustainable competitive advantage (He, 2025).

Disclosure of carbon emissions reflects a company's commitment to environmental transparency and public accountability (Caputo et al., 2021; Siswati, 2025). According to Stakeholder Theory, companies that actively disclose carbon emissions tend to respond to pressure from investors, regulators, and the public to improve their operational practices (Kartikasary et al., 2023). This transparency not only builds social legitimacy but also encourages the internalization of environmental responsibility in strategic decision-making processes. Furthermore, CED serves as an early signal (signaling mechanism) that a company is serious about managing its environmental impacts, which then encourages the allocation of resources to improve actual environmental performance (Wang et al., 2025). Therefore, the higher the level of carbon emission disclosure, the better the company's environmental performance.

H1: Carbon emission disclosure has a significant effect on environmental performance.

2.2. Green Investment as a Moderating Variable

Green investment refers to the allocation of corporate resources to projects, technologies, or initiatives aimed at preserving the environment while generating long-term economic value (Zhang et al., 2022; Rosyid & Mulatsih, 2024). These investments focus not only on financial returns but also on ecological sustainability through funding renewable energy, energy efficiency, waste management, and carbon emission mitigation (Zhang et al., 2025). Within the framework of stakeholder theory, green investment represents a strategic response to increasing demands from institutional investors and regulators for greater environmental accountability.

Mei and Zhang (2025) emphasized that green investment functions as both a financial incentive and an operational mechanism for adopting environmentally friendly practices, particularly under stringent environmental regulations. Empirical evidence shows that companies with high transparency in carbon emission disclosure tend to attract greater green investment flows, thereby strengthening their capacity to improve environmental performance (Huynh et al., 2025). However, this relationship is not always linear; Dani and Harto (2022) found that green investment does not consistently influence carbon emission disclosure, suggesting that such investments may be driven by strategic rather than normative motivations. Nevertheless, green investment has been shown to positively affect financial performance when supported by strong internal environmental policies, indicating its role as both an ecological instrument and a business strategy (Novia & Candy, 2023).

Although carbon emission disclosure is important, its impact on environmental performance is not always immediate. Without concrete follow-up actions, CED risks becoming symbolic disclosure or greenwashing (Frendy et al., 2024). In this context, green investment plays a crucial moderating role by translating transparency into operational change through direct investment in environmentally responsible projects such as renewable energy, energy efficiency, and sustainable waste management (Huang & Lei, 2021).

According to signaling theory, high levels of CED create public expectations that companies will act consistently with their disclosures; to maintain credibility, firms are therefore encouraged to follow transparency with green investments (Zhou & Chen, 2024). These investments serve as an operational mechanism that converts environmental commitments into tangible improvements in environmental performance. Supporting this argument, Zhang et al. (2025) found that firms with high CED tend to increase green capital expenditure, which subsequently reduces carbon emission intensity, while Nirino et al. (2022) showed that the link between environmental reporting and environmental performance becomes significant only when moderated by sustainable resource allocation.

H2: Green investment moderates the effect of carbon emission disclosure on environmental performance.

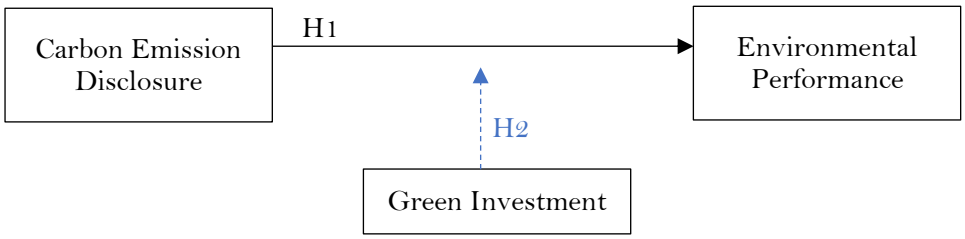

Figure 1. Conceptual Framework

Figure 1 illustrates the proposed research framework examining the relationship between carbon emission disclosure, green investment, and environmental performance. The model posits that carbon emission disclosure has a direct effect on environmental performance (H1). In addition, green investment is hypothesized to act as a moderating variable that transmits the effect of carbon emission disclosure on environmental performance (H2), indicating that disclosure-driven transparency encourages green investment, which in turn enhances environmental outcomes

3. Methods

This study adopts a quantitative research design grounded in the positivist paradigm, aiming to test causal relationships among variables using numerical data and statistical analysis (Cresswell & Cresswell, 2017). The quantitative approach is appropriate for examining the direct and moderating effects of Carbon Emission Disclosure on environmental performance. The data source consists of secondary data obtained from annual reports and sustainability reports of Sharia-compliant companies listed on the Sri-Kehati Index of the Indonesia Stock Exchange (IDX) for the period 2020–2024. Data were collected through documentary and archival methods from the official IDX website. The study employs purposive sampling, resulting in 6 companies and 30 firm-year observations, based on the availability and completeness of the required data.

The research variables include Carbon Emission Disclosure (independent variable), Environmental Performance (dependent variable), and Green Investment (moderating variable). Data extraction was conducted using a structured document analysis checklist to ensure consistency in measurement across firms and periods. Validity and reliability testing were conducted using the PLS-SEM measurement model. Convergent validity was assessed through outer loadings and Average Variance Extracted (AVE), while discriminant validity was evaluated using the Fornell–Larcker criterion and cross-loadings. Construct reliability was examined using Cronbach's alpha and composite reliability, ensuring that all measurement indicators met acceptable thresholds.

The data analysis procedure followed several stages. First, descriptive statistics were conducted to examine data distribution. Second, the measurement model was evaluated to confirm validity and reliability. Third, the structural model was assessed using path coefficient analysis, including R^2 values, effect sizes, and bootstrapping procedures to test the significance of direct and moderating effects. All analyses were performed using SmartPLS Version 4, which is suitable for moderating testing with relatively small sample sizes.

4. Results

The data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS version 4. Following the guidelines for PLS-SEM analysis, the evaluation was performed in two sequential stages: assessment of the measurement model to ensure the validity and reliability of the constructs, and assessment of the structural model to test the hypothesized relationships and explanatory power of the model.

The assessment of convergent validity and reliability for the measurement model is presented in Table 1. All constructs demonstrate satisfactory convergent validity, as indicated by outer loadings ranging from 0.798 to 0.881, with all individual indicators exceeding the recommended threshold of 0.70. Furthermore, the Average Variance Extracted (AVE) values for all constructs are above the minimum requirement of 0.50, ranging from 0.675 to 0.738. Reliability is confirmed through Cronbach's alpha values greater than 0.70 (0.842 to 0.888) and composite reliability (CR) scores ranging from 0.892 to 0.918, both well above the acceptable threshold

of 0.70. These results collectively indicate that the measurement items reliably and validly capture their respective latent constructs.

Table 1. Measurement Model

Construct	Outer Loadings (Range)	Cronbach's α	Composite Reliability (CR)	Average Variance Extracted (AVE)
Carbon Emission Disclosure (CED)	0.811 – 0.878	0.873	0.910	0.717
Green Investment (GI)	0.798 – 0.865	0.842	0.892	0.675
Environmental Performance (EP)	0.836 – 0.881	0.888	0.918	0.738

Structural model testing was conducted to determine how much the dependent variable (Y) is simultaneously able to explain the independent variable (X) as seen from the coefficient of determination value. The requirements for the coefficient of determination (R-square) model are categorized as follows: values > 0.67 are considered strong, 0.19-0.67 are moderate, and < 0.19 are low. Table 1 presents the results of the coefficient of determination test.

Table 2. Coefficient Determination Test (R-Square)

Items	Value
R-square	0.293
R-square adjusted	0.212

Table 2 shows that the R-square value is 0.293 for the environmental performance variable, indicating that the model built, namely Influence Carbon Emission Disclosure (CED), explains 29.3% of the environmental performance with a moderate rating.

The effect size test is used to show the influence of the independent variable on the dependent variable using the effect size (F^2) value. The magnitude of the influence is divided into three categories: a small category with a value of $0.02 \leq F^2 < 0.15$, a medium/moderate category with a value of $0.15 \leq F^2 < 0.35$, and a large category with a value greater than or equal to 0.35.

Table 3. Effect Size Test

Relationship	Effect Size	The Magnitude of the Influence
Carbon Emission Disclosure → Environmental Performance	0.532	Big
Green Investment x Carbon Emission Disclosure → Environmental Performance	0.075	Big

The results of this test indicate that the majority of variables have a significant influence. The F^2 value for the variable carbon emission disclosure on environmental performance is 0.532, indicating a strong influence. The F^2 value for the variable green investment moderating the effect of carbon emission disclosure on environmental performance is 0.075, indicating a strong influence.

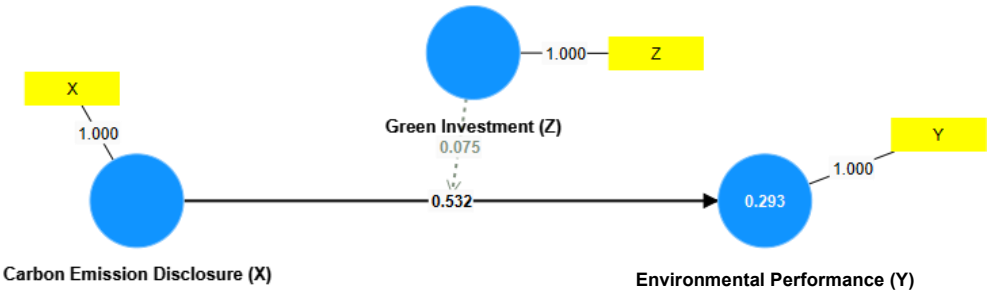

Figure 2. Output Results PLS-SEM

Table 4. Hypothesis Test

Relationship	Path Coefficient	P-Value
Carbon Emission Disclosure → Environmental Performance	0.532	0.000
Green Investment x Carbon Emission Disclosure → Environmental Performance	0.075	0.000

Hypothesis testing in this study is performed using the path coefficient and p-value. If the confidence level is 95% with an alpha value of 5%, resulting in a p-value <0.05, the result is considered significant. Based on Figure 2 and Table 4, the hypothesis test shows that the value of the influence of carbon emission disclosure on environmental performance has a path coefficient value of 0.532 and a p-value of 0.000 <0.005. This indicates that carbon emission disclosure has a positive and significant effect on environmental performance. The higher the implementation of carbon emission disclosure, the higher the environmental performance of a company. Furthermore, green investment strengthens the effect of carbon emission disclosure on environmental performance with a path coefficient value of 0.075 with a p-value of 0.000 <0.005.

5. Discussion

The results of the hypothesis testing indicate that Carbon Emission Disclosure (CED) has a positive and significant effect on corporate environmental performance. This finding supports Hypothesis 1 (H1) and aligns with theoretical arguments based on stakeholder theory (Mu et al., 2024). Companies that transparently disclose carbon emissions tend to respond to pressure from investors, regulators, and the public to increase environmental accountability. This transparency not only provides social legitimacy but also encourages the internalization of environmental responsibility in strategic decision-making processes (Frendy et al., 2024).

This finding is also consistent with an empirical study by Sisdianto et al. (2024), which states that implementing CED motivates companies to pay greater attention to environmental issues, particularly in carbon emission management. In the context of sharia-compliant companies listed on the Sri-Kehati Index, commitment to sustainability principles and social responsibility is an integral part of corporate identity. Therefore, CED is not merely defensive, but proactive as part of a sustainable business strategy (Hadiwibowo et al., 2023). However, it is important to note that the coefficient of determination (R^2) of 0.293 indicates that CED only explains 29.3% of the variation in environmental performance. This suggests that other factors, such as environmental governance, green innovation, or regulatory pressure, also play a significant role in determining corporate environmental performance (Choudhary & Sangwan, 2022).

Moderation tests indicate that green investment moderates the relationship between CED and environmental performance, albeit with a relatively small indirect

effect. This finding supports Hypothesis 2 (H2) and confirms that green investment serves as an operational mechanism bridging transparency (CED) and tangible outcomes (environmental performance). According to Signaling Theory, a high CED creates public expectations that a company will act consistently with its claims (Zhang et al., 2025). To maintain credibility and avoid accusations of greenwashing, companies follow up these disclosures with capital allocations to environmentally friendly projects such as renewable energy, energy efficiency, or waste management (Rachmawati, 2021; Wang et al., 2025). These investments then directly reduce the company's ecological footprint, thereby improving its actual environmental performance.

This finding aligns with research by Mei and Zhang (2025), which confirms that green investment serves as both a financial incentive and an operational mechanism to encourage environmentally friendly practices. Furthermore, these results also explain inconsistencies in previous literature. For example, Dani and Harto (2022) found that green investment had no effect on CED, but in this study, green investment's role is seen as a consequence of CED, not its cause. This highlights the importance of distinguishing the direction of causal relationships in environmental studies. Although the moderation effect is statistically significant, indicating that green investment strengthens the effect of carbon emission disclosure on environmental performance. Other mechanisms, such as green innovation by Lu and Li (2023) or the implementation of environmental management systems by Ronalter et al. (2023), likely also play a role, particularly in the context of Islamic companies that place an intrinsic value on sustainability.

This study enriches the literature by confirming the moderating effect of green investment in the CED environmental performance relationship, particularly in the context of Islamic companies a segment that remains underexplored in global environmental accounting studies (Rosyid & Mulatsih, 2024). These findings provide a basis for regulators (such as the Financial Services Authority (*Otoritas Jasa Keuangan*/OJK) and the Indonesian Institute of Auditors (*Ikatan Akuntan Indonesia*/IAI) to encourage the integration of CED and green investment incentives into sustainability reporting policies. For companies, these results confirm that transparency without concrete action carries a low risk of impact. Therefore, CED must be accompanied by the allocation of real resources to green initiatives to create sustainable environmental value.

6. Conclusion

This study examines the effect of carbon emission disclosure on environmental performance and the moderating effect of green investment among Islamic companies listed on the Sri-Kehati Index of the Indonesia Stock Exchange during 2020–2024. Using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4, the findings indicate that carbon emission disclosure has a positive and significant effect on environmental performance. This result supports Stakeholder Theory, suggesting that transparency in carbon disclosure strengthens corporate accountability and motivates firms to improve environmental management practices.

The results also show that green investment moderates the relationship between carbon emission disclosure and environmental performance. This finding highlights that disclosure alone is insufficient; tangible capital allocation to environmentally friendly projects is required to translate transparency into real environmental outcomes. Without such investment, carbon emission disclosure risks remaining symbolic and may lead to greenwashing rather than substantive sustainability improvements. The moderating role of green investment thus confirms its function as an operational mechanism linking disclosure to performance.

This study contributes to the sustainability literature by integrating stakeholder theory with an operational perspective on green investment in the context of sharia-compliant firms. The findings suggest that regulators and policymakers should not only mandate carbon disclosure but also promote incentives for green investment to enhance environmental performance. However, this study has limitations. The sample is limited to six Islamic companies, restricting generalizability. Environmental performance is measured using secondary data, which may not fully capture operational complexity, and no control variables were included. Future research should expand the sample, incorporate additional mediators or controls, and adopt mixed methods to better capture managerial decision-making processes.

References

Bakry, W., Mallik, G., Nghiem, X. H., Sinha, A., & Vo, X. V. (2023). Is green finance really "green"? Examining the long-run relationship between green finance, renewable energy and environmental performance in developing countries. *Renewable Energy*, *208*(2), 341–355.

Bhat, M. Y., Sofi, A. A., & Sajith, S. (2022). Domino-effect of energy consumption and economic growth on environmental quality: role of green energy in G20 countries. *Management of Environmental Quality: An International Journal*, *33*(3), 756-775

Cappellieri, F., Lombardi, R., Pizzo, M., & Vinciguerra, R. (2025). Environmental reporting in public sector organizations: A review of literature for the future paths of research. *Financial Accountability and Management*, *41*(1), 159–199.

Caputo, F., Pizzi, S., Ligorio, L., & Leopizzi, R. (2021). Enhancing environmental information transparency through corporate social responsibility reporting regulation. *Business Strategy and the Environment*, *30*(8), 3470–3484.

Choudhary, K., & Sangwan, K. S. (2022). Green supply chain management pressures, practices and performance: A critical literature review. *Benchmarking: An International Journal*, *29*(5), 1393–1428.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. London: Sage Publications.

Dani, I. M., & Harto, P. (2022). Pengaruh kinerja lingkungan dan green investment terhadap pengungkapan emisi karbon. *Diponegoro Journal of Accounting*, *11*(4), 67-69.

Frendy, Oshika, T., & Koike, M. (2024). Environmental greenwashing in Japan: The roles of corporate governance and assurance. *Meditari Accountancy Research*, *32*(7), 266–295.

Gunawan, S. N., Sembiring, F., & Paramita, S. (2024). The effect of green investment, corporate social responsibility, and good corporate governance on green company value mediated by return on investment. *JASA (Jurnal Akuntansi, Audit dan Sistem Informasi Akuntansi)*, *8*(3), 673-687.

Hadiwibowo, I., Limarty, D., & Azis, M. T. (2023). Pengungkapan emisi karbon, penerapan green accounting dan kinerja lingkungan pada nilai perusahaan. *Jurnal Riset Akuntansi Mercu Buana*, *9*(2), 290-300.

Hariatih, H., Rahmah, R., Azzahra, N., & Amri, A. N. (2024). Carbon emission disclosure: Reviewed from profitability and environmental performance in sharia-based high profile companies. *Enrichment: Journal of Management*, *14*(4), 658–667.

He, Q. (2025). The influence of organizational policies on firm environmental performance through sustainable technologies and innovation and stakeholder concerns. *Scientific Reports*, *15*(1), 1–14.

Hidayat, I., Ismail, T., Taqi, M., & Yulianto, A. S. (2022). Investigating in disclosure of carbon emissions: Influencing the elements using panel data. *Jurnal Reviu Akuntansi dan Keuangan*, *12*(3), 721–732.

Huang, L., & Lei, Z. (2021). How environmental regulation affect corporate green investment: Evidence from China. *Journal of Cleaner Production*, *279*(3), 123-560.

Huynh, T. D., Li, F. W., & Xia, Y. (2025). Something in the air: Does air pollution affect fund managers' carbon divestment? *Review of Accounting Studies*, *3*(4), 12-14.

Kartikasary, M., Wijanarko, H. M. R., Tihar, A., & Zaldin, A. (2023). *The effect of financial distress and firm size on carbon emission disclosure.* In *E3S Web of Conferences* (Vol. 426, p. 02093). Les Ulis: EDP Sciences.

Wang, L., Ding, X., Yang, Y., & Wu, R. (2025a). Corporate environmental performance and bond financing cost: A multi-stakeholder signaling perspective. *International Review of Financial Analysis*, *106*, 104479.

Lu, Z., & Li, H. (2023). Does environmental information disclosure affect green innovation? *Economic Analysis and Policy*, *80*(3), 47–59.

Mansour, M., Abu-Allan, A. J., Alshdaifat, S. M., E'leimat, D. A., & Saleh, M. W. A. (2025). Board effectiveness and carbon emission disclosure: Evidence from ASEAN countries. *Discover Sustainability*, *6*(1), 1–25.

Maryati, S., & Soediro, A. (2024). Environmental management accounting and financial performance: green innovation and financial performance as mediator. *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE)*, *7*(1), 4749-4769.

Maulana, A., Theresna Ruchjana, E., Nurdiansyah, D. H., & Karawang, U. S. (2021). The effect of company size, profitability, leverage, and environmental performance on environmental disclosure. *Business and Accounting*, *4*(2), 34-38.

Mei, K., & Zhang, Z. (2025a). Environmental regulation, green investment and corporate green governance: Evidence from China's new environmental protection law. *Finance Research Letters*, *76*(3), 345-349.

Mu, H. L., Xu, J., & Chen, S. (2024). The impact of corporate social responsibility types on happiness management: A stakeholder theory perspective. *Management Decision*, *62*(2), 591–613.

Najia, N., Taher, H., & Elkader, G. A. (2025). The effect of environmental deterioration and socio-cultural factors on economic sustainability in Asia Pacific selected countries. *International Journal of Energy Economics and Policy*, *15*(1), 8–14.

Natalia, I. (2022). Refleksi Yudhistira dalam tanggung jawab sosial dan akuntansi lingkungan. *Jurnal Akuntansi Multiparadigma*, *13*(1), 42–59.

Nirino, N., Battisti, E., Ferraris, A., Dell'Atti, S., & Briamonte, M. F. (2022). How and when corporate social performance reduces firm risk? The moderating role of corporate governance. *Corporate Social Responsibility and Environmental Management*, *29*(6), 1995–2005.

Novia, J., & Candy, C. (2023). Pengaruh green investment dalam financial performance: Efek moderasi dari environmental policy. *Widya Cipta: Jurnal Sekretari dan Manajemen*, *7*(2), 65–73.

Peng, B. (2024). Navigating green horizons: An empirical exploration of business practices aligned with environmental goals in the era of sustainable economy. *Managerial and Decision Economics*, *45*(7), 4732-4752.

Rachmawati, S. (2021). Green strategy moderate the effect of carbon emission disclosure and environmental performance on firm value. *International Journal of Contemporary Accounting*, *3*(2), 133-152.

Rizqulloh, A. D. B., Mutmainah, R. E., & Lataruva, E. (2024). Enhancing corporate environmental performance through green human resource management. *Research Horizon*, *4*(4), 65-72.

Ronalter, L. M., Bernardo, M., & Romaní, J. M. (2023). Quality and environmental management systems as business tools to enhance ESG performance: A cross-regional empirical study. *Environment, Development and Sustainability*, *25*(9), 9067–9109.

Rosyid, R., & Mulatsih, S. N. (2024). The role of green investment and environmental performance on financial performance with moderation of company size. *Jurnal Comparative: Ekonomi dan Bisnis*, *6*(1), 62–76.

Sisdianto, E., Ahmad Razimi, M. S., Sampurna, D. S., Susanti, S., & Cahya, B. T. (2024). Economic performance: Impact of implementing environment cost and disclosure carbon emissions Fiqh Al Bi'ah (environment) analysis approach. *Paper Asia*, *40*(6), 86–98.

Siswati, C. R. (2025). The effect of carbon emission disclosure, green accounting, and institutional ownership on firm value. *Research Horizon*, *2*(5), 34-35.

Sorroche-del-Rey, Y., Piedra-Muñoz, L., & Galdeano-Gómez, E. (2023). Interrelationship between international trade and environmental performance: Theoretical approaches and indicators for sustainable development. *Business Strategy and the Environment*, *32*(6), 2789–2805.

Wang, X., Gao, X., & Sun, M. (2025). Construction and analysis of corporate greenwashing index: A deep learning approach. *EPJ Data Science 2025, 14*(1), 1–25.

Wati, A. S., & Latifah, L. (2024). The effect of environmental performance, green innovation, and good corporate governance on financial performance. *AJAR, 7*(02), 296-323.

Zhang, H., Fang, B., & Shao, L. (2025). From brown investment to green investment: Will the Russia–Ukraine war present opportunities or threats? *Finance Research Letters, 85*(5), 108-113.

Zhang, H., Shao, Y., Han, X., & Chang, H. L. (2022). A road towards ecological development in China: The nexus between green investment, natural resources, green technology innovation, and economic growth. *Resources Policy, 77*(4), 102-106.

Zhou, Y., & Chen, L. (2024). Public attention and "environmental disclosure greenwashing": Pressure from oversight or incentive from legitimacy. *China Finance Review International, 5*(2), 567-569.

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The authors declare that there is no conflict of interest.

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Ethical approval was obtained for this study. The manuscript represents original work and has not been previously published, nor is it under consideration by another journal.

Data Disclosure Statement
The data that support the findings of this study are available from the corresponding author upon reasonable request.