BOARD CHARACTERISTICS AND ENVIRONMENTAL PERFORMANCE : DOES OWNERSHIP MODERATE THE IMPACT?

Hesniati[1]; Vina Sonata[2]; Hery Haryanto[3]
Fakultas Bisnis dan Manajemen, Universitas Internasional Batam, Indonesia[123]
Email : Hesniati@uib.edu[1]; 2141241.vina@uib.edu[2]

ABSTRACT

Examining the impact of ownership on business governance's attenuation on sustainability performance is the primary goal of this study. For the years 2018–2022, 52 energy-related businesses traded on the Indonesia Stock Exchange were subject to panel data regression and Moderated Regression Analysis. Managerial ownership has the potential to reduce board independence and increase the beneficial impact of board size and environmental committee on environmental performance. At the same time, the impact of board size on environmental performance is amplified by blockholder ownership. Managers should encourage more involvement from boards and environmental committees in green initiatives. Those that hold blocks in different industries should really have a handle on environmental best practices. This study adds to the existing literature by examining the effects of other types of ownership on environmental performance, including managerial and blockholder ownership, and by demonstrating how corporate governance moderates these effects. This study's results open up a new avenue for researchers to explore when trying to pin down the traits of blockholders.

Keywords : Environmental Performance; Board Characteristics; Managerial Ownership; Blockholder Ownership

ABSTRAK

Meneliti dampak kepemilikan pada pelemahan tata kelola bisnis terhadap kinerja keberlanjutan adalah tujuan utama dari penelitian ini. Untuk tahun 2018-2022, 52 perusahaan terkait energi yang diperdagangkan di Bursa Efek Indonesia menjadi subjek regresi data panel dan Moderated Regression Analysis. Kepemilikan manajerial memiliki potensi untuk mengurangi independensi dewan dan meningkatkan dampak menguntungkan dari ukuran dewan dan komite lingkungan terhadap kinerja lingkungan. Pada saat yang sama, dampak ukuran dewan pada kinerja lingkungan diperkuat oleh kepemilikan blockholder. Manajer harus mendorong lebih banyak keterlibatan dewan dan komite lingkungan dalam inisiatif ramah lingkungan. Mereka yang memiliki blok di industri yang berbeda harus benar-benar memiliki pegangan pada praktik terbaik lingkungan. Studi ini menambah literatur yang ada dengan menguji efek dari jenis kepemilikan lain terhadap kinerja lingkungan, termasuk kepemilikan manajerial dan pemegang saham, dan dengan menunjukkan bagaimana tata kelola perusahaan memoderasi efek-efek ini. Hasil penelitian ini membuka jalan baru bagi para peneliti untuk mengeksplorasi ketika mencoba menjabarkan sifat-sifat blockholder.

Kata kunci : Kinerja Lingkungan; Karakteristik Dewan; Kepemilikan Manajerial; Kepemilikan Blockholder

INTRODUCTION

Background

Industrial operations in the energy industry have the potential to harm the natural world (Rahmatika, 2021). The world's largest wind and solar power systems and photovoltaic capacity in 2019 were held by a number of American and Chinese enterprises. Paraguay, meantime, has accomplished something really remarkable: it gets all of its energy from renewable sources. As an example, according to Papadis and Tsatsaronis (2020), Norway and Costa Rica both reached high percentages of renewable energy, with 97% and 93% respectively. Indonesia ranks 164th out of 180 nations worldwide in the Environmental Performances Index for 2022, which ranks countries according to their environmental performance when compared, analyzed, and understood (EPI, 2022).

In their pursuit of a more sustainable future, the authorities, academia, and business leaders are increasingly concerned about corporate economic performance. Indra Al Irsyad et al. (2020), Mayer (2020), and Zulfikar et al. (2021) all agree that energy effectiveness pollutant reduction, and renewable energy use are all crucial components of Indonesia's energy sector's environmental performance. Coal still accounts for over 61% of total power usage in Indonesia's energy industry in 2023. With ambitious targets set for 2025 and 2030, the Indonesian administration intends to increase the share of renewable energy to 23% and 25% respectively. Improving power generating capacity and building transmission and redistribution network infrastructure are part of the national strategy, which is in line with these efforts (Lembaga Internasional Trade Administration, 2024).

Administration has a favorable effect on the application of high environmental performance, according to previous studies that examined the implications across different industries and nations. According to many studies (Mititean, 2023), factors including gender diversity on boards, the number of directors, and the presence of environmental committees all contribute to better environmental performance. Nonetheless, results vary depending on the ownership arrangement. For example, according to Al Amosh & Khatib (2022), blockholder ownership has a substantial negative effect on sustainability. performance; according to Bosun-Fakunle et al. (2023), business ownership has a positive effect on occurring performance; and according to

Baba & Baba (2021), blockholder possession has a substantial positive effect on environmental earnings, while managerial ownership has no impact. There is a need for further study on Indonesian enterprises because of the divergent viewpoints that have arisen from these results on the moderating effect of ownership structure.

Several contributions are sought to be made by this research. To start, it employs methodologies from the Natural Resource-Based View (NRBV) and Agency Theory, with an emphasis on how strong governance practices may boost environmental performance in corporations and provide them an edge in the market. Second, for the benefit of scholars and policymakers, the research aspires to determine the moderating impacts on the execution of governmental activities that may enhance environmental performance.

LITERATURE REVIEW

Theoretical Framework

Using NRBV and Agency Theory as analytical frameworks, this research formulates assumptions about environmental performance. The resources and talents that drive sustainably friendly economic operations provide a corporation a competitive edge, according to Hart & Dowell (2011). It is critical to keep an eye on managers to make sure they are acting in a way that benefits shareholders, says Agency Theory. According to Alwadani et al. (2024), in order for corporations to get more involved in environmental practices, governance systems are essential. The ownership structure and internal controls of a firm may impact its capacity to administer and monitor environmental management (Hart & Hart, 2013).

Environmental Performance

In their 2023 study, Abedin and colleagues made According to the definition, environmental performance is the sum of a company's actions' impacts on ecosystems and the environment. Managing in a way that prevents the loss of natural resources while simultaneously increasing long-term shareholder value via the capitalization of environmental possibilities is what environmental performance is all about. A company's significant role in promoting a healthy and sustainable environment is the core notion underpinning environmental performance. How well a business handles its effects on the environment is one indicator of its environmental performance. The

capacity of the organization to successfully establish a happy workplace is the most important component of environmental performance (Fakunle et al., 2023).

Gender Diversity

The use of clean energy, pollution control measures, and corporate recycling policies are the three indicators of an organization's environmental policy. The formulation of successful environmental policies requires a board of directors that is diverse in gender. (The Mititean, 2023). Environmental challenges are often better addressed by boards with gender diversity (Martín & Herrero, 2020). Having members of both sexes on the board is, therefore, crucial. Lack of diversity, size, and independence on a business's board of directors may have a negative impact on the company's economic performance. A big and independent board is better able to oversee operations and process information than a small one (Fakunle et al., 2023). Gender has a favorable effect on environmental performance, according to prior study.

H_1: Gender diversity has a favorable effect on how well the environment is managed.

Board Size

More members on the board means more opportunities to learn from each other's experiences and perspectives. Furthermore, advisors from professionals might be sought out by a bigger board in order to tackle common environmental problems (Martín dan Herrero, 2020). Having additional experts on the board to manage different parts of the company's operations is a sign of a bigger board. Larger boards are more successful because they can lower agency costs caused by inefficient management and provide greater assistance to management (Hesniati et al., 2022). Adebin et al. (2023) found that the board may improve environmental performance. According to earlier studies conducted by Nguyen et al. (2021), the size of the board has a beneficial effect on environmental performance.

H_2: Board size positively impacts environmental performance.

Board Independence

In contrast to insiders who could be swayed by economic interests, external individuals who are not associated with the firm, known as board independence, provide more impartial counsel (Martín dan Herrero, 2020). Greater board independence leads to more transparent and environmentally conscious companies. According to Abedin et al. (2023), a highly independent board may improve environmental performance.

Actions may be properly controlled and monitored by independent boards. Furthermore, according to Hussain et al. (2018), independent boards represent more transparency and result in better long-term value. Independent boards have a beneficial effect on environmental performance, according to earlier studies (Arayssi et al., 2020).

H_3: Board independence positively impacts environmental performance.

Environmental Committee

The environmental committee is the highest decision-making body in each company. The environmental committee has many responsibilities regarding environmental practices (Gerged *et al*., 2023). One of the committee's responsibilities is to manage the company's environmental risks, including reputation and legitimacy risks (Manurung, Hardika 2019). The presence of an environmental committee can enhance the implementation of corporate governance (Alan &Jonathan, 2015 Alwadani *et al*., 2024).

H_4: When it comes to sustainability, a sustainability committee is a boon.

Ownerships as Moderator

One way to bring managers closer to the company's shareholders is via managerial ownership, which is defined as the proportion of ownership owned by management. This congruence guarantees that management's stances are congruent with those of the owners (shareholders). Managerial ownership is seen to have an impact on the firm, which in turn influences how well it does in its mission to maximize value (Mappadang, 2021). Al Amosh and Khatib (2022) found that when managers have a stake in the company's success, it shows up in the results for the environment.

H_5: There is a favorable correlation between administrative ownership and environmental performance.

H_6: The connection across economic performance and administration is affected by managerial ownership.

A blockholder is someone who owns five percent or more of the shares in circulation. The disclosure of economic performance is significantly and positively influenced by these blockholders. According to Al Amosh (2022), blockholders have a lot of sway on how a firm discloses information and how well it does overall. According to Truong (2024), concentrated ownership has the potential to spur the adoption of ESG, SSG, and governance standards. In most cases, having blockholders around improves

the transparency of environmental performance reporting. Reason being, blockholders are more committed to investing in environmental and social causes over the long run and place a premium on actions that impact the company's image (Baba & Baba, 2021).

H_7: Sustainability performance is positively impacted by blockholder ownership.

H_8: The connection between leadership and ecological efficiency is affected by the ownership of blocks.

RESEARCH METHODS

Method is a method of work that can be used to obtain something. While the research method can be interpreted as a work procedure in the research process, both in searching for data or disclosing existing phenomena (Zulkarnaen, W., et al., 2020:229). Secondary sources and a purposive sample technique are used in this investigation. Based on Sugiyono's (2019) research, this study use Panel Data Econometric and MRA to examine energy businesses listed on the IDX that have published their financial statements sequentially from 2018 to 2022. The data set includes 52 firms' financial reports spanning 5 years, for a total of 260 records. Data analysis using panel data regression improves estimation accuracy with more observations, increases degrees of freedom, and decreases omitted factor bias (Salsabila et al., 2022). The goal of using MRA is to learn more about the impact of moderator factors on the connection between dependent and independent factors.

The measurement of factors in this study is described as follows (Table 1):

The regression equations in this study are as follows:

$$EP = \beta_0 + \beta_1 BG + \beta_2 BS + \beta_3 BI + \beta_4 BEC + \beta_5 MO + \beta_6 IO + \epsilon$$

$$EP = \beta_0 + \beta_1 BG + \beta_1 BG + \beta_2 BS + \beta_3 BI + \beta_4 BEC + \beta_5 BG*MO + \beta_6 BS*MO + \beta_7 BI*MO + \beta_8 BEC*MO + \epsilon$$

$$EP = \beta_0 + \beta_1 BG + \beta_1 BG + \beta_2 BS + \beta_3 BI + \beta_4 BEC + \beta_5 BG*BO + \beta_6 BS*BO + \beta_7 BI*BO + \beta_8 BEC*BO + \epsilon$$

Which:

EP: Dependent factor.

β0: Intercept is the value of EP when all independent factors (BG, BS, BI, BEC, MO) are zero.

β1, β2, β3, β4: Regression coefficients for independent factors (BG, BS, BI, BEC).

β5, β6, β7, β8: The moderation factor's interaction calculation with the independent factors.
ϵ: Random error or disturbance in the model.

RESULT AND DISCUSSION

Results

Research methods used in the research included conventional effect models, random effects, descriptive statistics, and panel data tests with fixed effects. Moderation tests of management and blockholder ownership, along with R Square tests, were conducted after the study. Within the Discussion section, we go into the outcomes of the hypothesis.

Each firm in the energy industry typically has four directors, with a maximum of eleven directors. The minimum number of directors is two. Nevertheless, compared to other industries, including tourism, the energy industry has a much lower percentage of female directors—just 9.45% on average (IEA, 2020). On average, 6% of energy company boards are independent. Just around nine or ten of the fifty-two enterprises in this industry have an environmental committee, making up about 17.69% of the total. With an average ownership percentage of 56.68%, blockholders dominate the energy industry, while management ownership is a meager 4.68%. Also, energy businesses' environmental performance disclosure varies from 0% to 97.30% according to GRI guidelines. Nevertheless, with an average of just 21.29 percent, it seems that energy businesses are not consistently disclosing their environmental performance.

According to the correlation study, there is a negative relationship between environmental effectiveness and gender, board independence, and management ownership.This finding suggests that sustainability performance declines when gender diversity, board independence, and management ownership increase. However, there is a positive correlation between economic performance and board and committee size, suggesting that bigger boards and committees might lead to better environmental performance.

Panel Data Regression

In order to get the best model, panel data is used in this research. Three methods are investigated in panel data regression testing: FEM, CEM, and REM. Table 4 summarizes the results, which show that REM is the best model for this research.

To evaluate FEM against CEM, one uses the Chow test. It is more reasonable to use the FEM model if the p-value is less than 0.05. In contrast, the Hausman test evaluates REM models with FEM models.The REM model is deemed the most appropriate when the p-value surpasses 0.05 (Anderson et al., 2014). The REM model was used for this investigation.

A factor is deemed important if its probability value is less than 0.05. The converse is also true: results are not deemed significant if factor probability values are higher than 0.05 (Anderson et al., 2014). A larger board and the presence of an overall committee are positively and significantly associated with better environmental performance, according to the results of the hypothesis test. On the other hand, environmental performance is severely affected by board independence. Having said that, when it comes to environmental performance, gender and ownership do not matter.

Even after controlling for management ownership's moderating effect, the hypothesis test's findings are stable. Management buy-in amplifies the impact of a large board and an environmental committee on green initiatives. The impact of board independence on economic performance is, however, diminished. Although management ownership acts as a moderator, gender remains a non-factor in environmental performance.

According to Table 7, the only way blockholder ownership modifies the effect of board size on sustainability sustainability is by amplifying it. When blockholder participation is present as a the instructor, however, gender, associations, board independence, and economic competence are all unaffected.

Gender, board size, board independence, ownership, and the existence of a prevalent committee are some of the board features examined in this research; additional variables, not examined here, account for the remaining portion of the variance in environmental performance, which is 24.63%.

Discussion

A larger board and the presence of an environmental committee are associated with better direct reporting of economic performance, according to the results of the hypothesis test. This data reveals that transparency about environmental procedures is more common among corporations with bigger boards. The presence of an environmental committee also increases the probability of such revelations. Essentially,

Submitted : 25/09/2024 |Accepted : 24/10/2024 |Published : 30/12/2024
P-ISSN; 2541-5255 E-ISSN: 2621-5306 | Page 3009

these variables promote more transparency when it comes to reporting environmental concerns. The results are in line with what we would expect from a company with a bigger board and an environmental committee that actively works to enhance the company's environmental performance (Alwadani et al., 2024).

Results from the hypothesis and prudence tests show that management ownership may boost the effect of board size and the monitoring committee on environmental performance, even if blockholders largely oversee the energy sector. Managers are in a better position to encourage the board and environmental committee to participate in environmental practices than blockholder ownership. This study highlights the importance of management, not blockholders, in pushing environmental standards, since it indicates that most energy firms are governed by individuals from other sectors. These results open the door for further research on the traits of blockholders in the academic community.

The research also shows that a company's sustainability productivity can suffer if the board becomes more independent. It also implies that management ownership reduces the effect of board independence on environmental performance. Managers are more likely to focus on a business's occurring performance, according to the research, while independent boards are more likely to emphasize shareholder welfare. The conclusions reached here are in agreement with those of Alwadani et al. (2024).

CONCLUSION

The purpose of this research was to examine how ownership affects the environmental performance and corporate governance of Indonesian energy businesses. Managerial ownership, according to the results, amplifies the effect of a large board and an environmental committee on ecological performance. On the other hand, board independence is lessened as a result.

Managers in Indonesia's energy industry may draw substantial conclusions from this research. It implies that they should be more involved in environmental activities, both in terms of authority and responsibility. When it comes to environmental matters, a bigger and more engaged board can make better decisions. It is also wise to urge autonomous boards to keep an eye on environmental performance using GRI metrics. When it comes to making decisions on the environment, it is crucial to have a fair representation of genders.

There are a few restrictions on the research. To start, it ignores anything outside of the energy industry for the last five years. The second limitation is that the data used for the study can only be found in the company's annual reports and on the Internet. In conclusion, other aspects remain unexplored, since the research yielded an adjusted R2 of 24.63%. Consequently, this study recommends that future studies gather data over a longer duration and include more areas. It also suggests adding other ownership attributes as variables to be measured.

BIBLIOGRAPHY

Abedin, S. H., Subha, S., Anwar, M., Kabir, M. N., Tahat, Y. A., & Hossain, M. (2023). Environmental Performance and Corporate Governance: Evidence from Japan. *Sustainability (Switzerland)*, *15*(4), 1–21. https://doi.org/10.3390/su15043273

Al Amosh, H., & Khatib, S. F. A. (2022). Ownership structure and environmental, social and governance performance disclosure: the moderating role of the board independence. *Journal of Business and Socio-Economic Development*, *2*(1), 49–66. https://doi.org/10.1108/jbsed-07-2021-0094

Alan, H. R. D., & Jonathan, E. E. (2015). The Role of Board Environmental Committees in Corporate Environmental Performance. *Journal of Business Ethics*. https://doi.org/10.1007/s10551-015-2664-7

Ali, H. R., Mohammad, A. J., & Al-kake, F. R. A. (2021). *The Impact Of Corporate Governance On Environmental Performance Of Public Listed Companies In Malaysia : A Robust Standard Error Approach*. *18*(March 2022), 605–623.

Alwadani, N., Al-Shaer, H., & Albitar, K. (2024). The impact of internal governance mechanisms on environmental performance of Saudi firms. *International Journal of Accounting and Information Management*, *32*(1), 40–57. https://doi.org/10.1108/IJAIM-04-2023-0084

Anderson, D. R., Sweeney, D. J., Williams, T. A., Camm, J. D., & Cochran, J. J. (2014). *Statiscis for Business Economics*. 1–1204.

Arayssi, M., Jizi, M., & Tabaja, H. H. (2020). The impact of board composition on the level of ESG disclosures in GCC countries. *Sustainability Accounting, Management and Policy Journal*, *11*(1), 137–161. https://doi.org/10.1108/SAMPJ-05-2018-0136

Baba, B. U., & Baba, U. A. (2021). The effect of ownership structure on social and environmental reporting in Nigeria: the moderating role of intellectual capital disclosure. *Journal of Global Responsibility*, *12*(2), 210–244. https://doi.org/10.1108/JGR-06-2019-0060

Bosun-Fakunle, Y. F., Mary, J., & Gbenga, E. (2023). Effect of Corporate Governance on Environmental Performance: Empirical Evidence from Zimbabwe. *American Journal of Industrial and Business Management*, *13*(03), 163–181. https://doi.org/10.4236/ajibm.2023.133012

Diantimala, Y., & Amril, T. A. (2018). The Effect of Ownership Structure, Financial and Environmental Performances on Environmental Disclosure. *Accounting Analysis Journal*, *7*(1), 70–77. https://doi.org/10.15294/aaj.v5i3.20019

EPI. (2022). *2022 EPI Results*. Enviromental Performance Index.

García Martín, C. J., & Herrero, B. (2020). Do board characteristics affect environmental performance? A study of EU firms. *Corporate Social Responsibility*

and Environmental Management, *27*(1), 74–94. https://doi.org/10.1002/csr.1775

Gerged, A. M., Chijoke-Mgbame, A. M., Konadu, R., & Cowton, C. J. (2023). Does the presence of an environmental committee strengthen the impact of board gender diversity on corporate environmental disclosure? Evidence from sub-Saharan Africa. *Business Strategy and the Environment*, *32*(4), 2434–2450. https://doi.org/10.1002/bse.3257

Hart, S. L., & Dowell, G. (2011). A natural-resource-based view of the firm: Fifteen years after. *Journal of Management*, *37*(5), 1464–1479. https://doi.org/10.1177/0149206310390219

Hart, S. L., & Hart, S. L. (2013). *A Natural-Resource-Based View of the Firm*. *20*(4), 986–1014.

Hesniati, H., Ogawa, A. Y., Clarence, A., Topher, C., & Engelina, J. (2022). Pengaruh Inflation, Interest Rate, dan Exchange Rate terhadap IHSG di Bursa Efek Indonesia pada Tahun 2011-2021. *Studi Ilmu Manajemen Dan Organisasi*, *3*(1), 261–271. https://doi.org/10.35912/simo.v3i1.1078

Hussain, N., Rigoni, U., & Orij, R. P. (2018). Corporate Governance and Sustainability Performance: Analysis of Triple Bottom Line Performance. *Journal of Business Ethics*, *149*(2), 411–432. https://doi.org/10.1007/s10551-016-3099-5

IEA. (2020). *Gender diversity in energy: what we know and what we don't know*. International Energy Agency. https://www.iea.org/commentaries/gender-diversity-in-energy-what-we-know-and-what-we-dont-know

Indra Al Irsyad, M., Halog, A., Nepal, R., & Koesrindartoto, D. P. (2020). Economical and environmental impacts of decarbonisation of Indonesian power sector. *Journal of Environmental Management*, *259*(November 2018), 109669. https://doi.org/10.1016/j.jenvman.2019.109669

Lembaga Internasional Trade Administration. (2024). *International Trade Administration*. Lembaga Internasional Trade Administration. https://www.trade.gov/country-commercial-guides/indonesia-energy

Manurung, D. T., Hardika, A. L., Hapsari, D. W., & Sebayang, M. M. (2019). The Role of Corporate Governance and Environmental Committees on Greenhouse Gas Disclosure. *Journal of Environmental Management and Tourism*, *9*(7), 1403–1413.

Mappadang, A. (2021). Managerial Ownership, Leverage, Profitability, Corporate Value: An Interactive Effect In Indonesia Stock Exchange. *Widyakala: Journal of Pembangunan Jaya University*, *8*(2), 54. https://doi.org/10.36262/widyakala.v8i2.443

Mayer, A. (2020). Social support for de-carbonizing the energy system: The role of expressive partisanship. *Environmental Science and Policy*, *109*(August 2019), 83–94. https://doi.org/10.1016/j.envsci.2020.03.013

Mititean, P. (2023). Board attributes and social and environmental performance. Evidence from the energy sector. *Journal of Accounting and Management Information Systems*, *22*(1), 130–146. https://doi.org/10.24818/jamis.2023.01007

Muhammad, H., & Migliori, S. (2022). Effects of board gender diversity and sustainability committees on environmental performance: A quantile regression approach. *Journal of Management and Organization*. https://doi.org/10.1017/jmo.2022.8

Nguyen, T. H. H., Elmagrhi, M. H., Ntim, C. G., & Wu, Y. (2021). Environmental performance, sustainability, governance and financial performance: Evidence from heavily polluting industries in China. *Business Strategy and the Environment*, *30*(5),

2313–2331. https://doi.org/10.1002/bse.2748

Orazalin, N. S., Ntim, C. G., & Malagila, J. K. (2024). Board Sustainability Committees, Climate Change Initiatives, Carbon Performance, and Market Value. *British Journal of Management*, *35*(1), 295–320. https://doi.org/10.1111/1467-8551.12715

Papadis, E., & Tsatsaronis, G. (2020). Challenges in the decarbonization of the energy sector. *Energy*, *205*, 118025. https://doi.org/10.1016/j.energy.2020.118025

Rahmatika, D. N. (2021). Exploring The Relation Of Environmental Disclosure, Environmental Performance and Company Charagteristics In Indonesia: An Empirical Analysis. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, *5*(4), 1331–1345.

Salsabila, N. A., Juliarto, H. K., Syawal, A. F., & Nohe, D. A. (2022). Analisis Regresi Data Panel pada Ketimpangan Pendapatan Daerah di Provinsi Kalimantan Timur. *Prosiding Seminar Nasional Matematika, Statistika, Dan Aplikasinya*, *2*, 241–253.

Salsabila, S., & Santoso, U. (2021). Pengaruh Kepemilikan Saham Mayoritas Terhadap Kinerja Keuangan Perusahaan Farmasi (Studi Perusahaan Farmasi Yang Terdaftar Di Bei Tahun 2015-2019). *Jurnal Administrasi Bisnis*, *17*(2), 129–158. https://doi.org/10.26593/jab.v17i2.5238.129-158

Sugiyono. (2019). *Metode Kuantitatif, Kualitatif, dan R & D*. Alfabeta.

Sukhani, N., & Hanif, H. (2023). The Role of Environmental Performance in The Effect of Managerial Ownership, Independent Board of Commissioners, and Social Costs On Corporate Social Responsibility Disclosure. *Journal of The Community Development in Asia*, *6*(2), 55–69. https://doi.org/10.32535/jcda.v6i2.2325

Tania, K. S., & Hesniati, H. (2022). The effect of gender diversity on firm performance in Indonesia. *Jurnal Manajemen Strategi Dan Aplikasi Bisnis*, *5*(2), 267–284. https://doi.org/10.36407/jmsab.v5i2.667

Truong, T. H. D. (2024). Environmental, social and governance performance and firm value: does ownership concentration matter? *Management Decision*. https://doi.org/10.1108/MD-10-2023-1993

Wahyuningsih, I., & Meiranto, W. (2021). Pengaruh Good Corporate Governance dan Regulasi Pemerintah Terhadap Pengungkapan Informasi Akuntansi Lingkungan. *Diponegoro Journal Of Accounting*, *10*(4), 1–12.

Wirantika, A. D., Pradita, D. R. S., & Sany. (2020). *Pengaruh Asimetri Informasi, Female Director, Board Independence Terhadap Manajemen Laba pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia Periode 2016-2020*. 1182–1192.

Zulfikar, Z., Syahnur, S., & Majid, M. S. A. (2021). The Effect of Energy Consumption, Energy Resources, Economic Growth, and Road Infrastructure on Co2 Emissions in Indonesia. *International Journal of Quantitative Research and Modeling*, *2*(3), 173–183. https://doi.org/10.46336/ijqrm.v2i3.173

Zulkarnaen, W., Fitriani, I., & Yuningsih, N. (2020). Development of Supply Chain Management in the Management of Election Logistics Distribution that is More Appropriate in Type, Quantity and Timely Based on Human Resources Competency Development at KPU West Java. MEA Scientific Journal (Management, Economics, & Accounting), 4(2), 222-243. https://doi.org/10.31955/mea.vol4.iss2.pp222-243.

PICTURES, GRAPHS AND TABLES

Table 1 Factor Measurement

Factor	Formula	Reference
Dependent Factor		
Environmental Performance (EP)	The total number of GRI environmental standards reported by the company is divided among 37 GRI environmental measurement items.	(Orazalin *et al*., 2024)
Independent Factor		
Gender Diversity (BG)	The number of female board members is divided among the board of directors.	(Wirantika *et al*., 2020)
Board Size (BS)	The number of board members.	(Fakunle *et al*., 2023)
Board Independence (BI)	The number of independent commissioners divided by the total number of board commissioners	(Fakunle *et al*., 2023)
Environmental Committee (BEC)	1: The company has an environmental committee 0: The company does not have an environmental committee	(Wahyuningsih & Meiranto, 2021)
Managerial Ownership (MO)	The number of shares owned by management divided by the total number of outstanding shares.	(Fakunle *et al.,* 2023)
Blockholder Ownership (BO)	The number of shares owned by blockholders divided by the total number of outstanding shares.	(Diantimala & Amril, 2018)Salsabila dan Santoso 2021

Table 2 Descriptive Statistics

Variabel	N	Min.	Maks.	Mean	Std Deviation
Gender diversity (BG)	260	0.0000	0.6700	0.094538	0.1536310
Board size (BS)	260	2.0000	11.0000	4.103846	1.6324368
Board independence (BI)	260	0.0000	0.5000	0.059981	0.1112376
Environmental committee (BEC)	260	0.0000	1.0000	0.176923	0.3823396
Managerial ownership (MO)	260	0.0000	0.6567	0.046763	0.0968139
Blockholder ownership (BO)	260	0.0000	0.9700	0.576822	0.252899
Environmental performance (EP)	260	0.0000	0.9730	0.212994	0.2358871

Table 3 Correlation Test

Probability	BG	BS	BI	BEC	MO	IO	EP
BG	1.000000						
BS	0.005855 0.9262	1.000000					
BI	-0.098051 0.1198	-0.030149 0.6332	1.000000				
BEC	-0.139663 0.0263	0.310730 0.0000	-0.099097 0.1159	1.000000			
MO	0.096421 0.1261	-0.126311 0.0447	0.061216 0.3322	-0.115968 0.0655	1.000000		
IO	-0.145036 0.0210	-0.121236 0.0541	-0.064890 0.3039	0.067728 0.2832	-0.136102 0.0304	1.000000	
EP	-0.070640 0.2630	0.365020 0.0000	-0.280807 0.0000	0.355076 0.0000	-0.129000 0.0403	0.092577 0.1420	1.000000

Table 4 Uji Chow & Hausman

Panel Data Regression	Prob.	Result
Chow	0.0000	FEM
Hausman	0.2897	REM

Table 5 Hypotheses Testing

Factor	Coefficient	Prob.	Result
Gender diversity	-0.024194	0.8115	H_1 rejected
Board size	0.030964	0.0083	H_2 accepted
Board independence	-0.623958	0.0000	H_3 rejected
Environmental committee	0.177022	0.0011	H_4 accepted
Managerial ownership	-0.183639	0.2522	H_5 rejected
Blockholder ownership	0.098799	0.0648	H_7 rejected
C	0.042803	0.5093	

Dependent: Environmental performance

Table 6 Moderation of Managerial Ownership (MO)

Factor	Coefficient	Prob.
Gender diversity (BG)	-0.045	0.661
Board size (BS)	0.037	0.000
Board independence (BI)	-0.780	0.000
Environmental committee (BEC)	0.157	0.002
BG*MO	-0.963	0.396
BS*MO	-0.215	0.000
BI*MO	3.779	0.000
BEC*MO	5.683	0.000
C	0.070	0.142

Dependent: Environmental performance

Table 7 Moderation of Blockholder Ownership (BO)

Factor	Coefficient	Prob.
Gender diversity (BG)	-0.234	0.305
Board size (BS)	0.028	0.036
Board independence (BI)	-0.347	0.182
Environmental committee (BEC)	0.021	0.858
BG*BO	0.332	0.335
BS*BO	0.009	0.532
BI*BO	-0.479	0.253
BEC*BO	0.249	0.170
C	0.082	0.114

Dependent: Environmental performance

Table 8 R Square Test

Dependent	Prob (F-statistic)	Adjusted R-squared
Environmental performance	0.0000	0.246330