Corporate Governance and ESG Disclosure: An Empirical Study of Companies in the Basic Materials and Energy Sectors

Felicia Cindy Kurniawan, Senny Harindahyani*

,University of Surabaya, Indonesia
**Corresponding author. Email: senny.h@staff.ubaya.ac.id*

ABSTRACT
This study investigates the impact of corporate governance mechanisms, namely board effectiveness, audit committee effectiveness, and foreign ownership, on the quality of Environmental, Social, and Governance (ESG) disclosure. Focusing on firms in the basic materials and energy sectors listed on the Indonesia Stock Exchange during the 2022–2024 period, the study employs a content analysis approach based on the Global Reporting Initiative (GRI) Standards 2021, combined with panel data regression analysis using 447 firm-year observations. The empirical results indicate that board effectiveness, audit committee effectiveness, and foreign ownership have a positive and significant influence on ESG disclosure quality. These findings are consistent with Agency Theory, which emphasizes monitoring mechanisms to reduce information asymmetry, and Resource Dependence Theory, which highlights the role of governance structures in providing strategic resources. Overall, the study underscores the importance of effective governance in improving transparency within environmentally sensitive industries operating under a two-tier governance system.

Keywords: *Board Effectiveness, Audit Committee, Foreign Ownership, ESG Disclosure*

1. INTRODUCTION

The significance of sustainability concerns on the global agenda has compelled corporations to enhance the transparency of ESG disclosures to meet stakeholder expectations and comply with relevant global standards (Khamisu & Paluri, 2024; Tsang *et al.*, 2023). The basic materials and energy industries (IDX, 2021) face increased sustainability constraints owing to the extractive nature of their activities and their direct environmental impacts, leading to heightened expectations for transparency (World Bank Group, 2025). Cross-continental data indicate that mining activities resulted in the loss of 3,264 km² of tropical forest from 2000 to 2019, with Indonesia being a significant contributor to mining-related deforestation (Giljum *et al.*, 2022). The Ministry of National Development Planning/Bappenas reports that the energy and transportation sectors account for 50.6% of total emissions in Indonesia in 2022. Nickel processing projects in South Sulawesi and adjacent areas, along with iron ore and gold mining, result in water and air pollution, deforestation, displacement of farmers, and adverse public health impacts near mining operations (National Research and Innovation Agency, 2024). This situation underscores the necessity for corporate transparency through sustainability disclosures, reflecting responsibility, regulatory adherence, and corporate accountability regarding transition risks, climate governance frameworks, and readiness for transformation (Global Sustainable Investment Review, 2023; Hilson, 2012; Lončar *et al.*, 2019; PwC, 2024).

In 2022, IDX Energy achieved a growth rate of 100.05%, establishing it as the top-performing sector. In 2023, IDX Basic Materials recorded a 7.51% increase (Financial Services Authority, 2024). This illustrates that both sectors possess substantial economic importance and influence the dynamics of the Indonesian capital market. Consequently, examining these attributes provides a crucial basis for understanding disparities in business ESG disclosure practices within the scope of this study.

The significance of corporate governance (CG) is paramount in the formulation of ESG disclosures (Alodat *et al.*, 2023; Ding *et al.*, 2024). The functions of corporate governance, especially the board of commissioners, the audit committee, and foreign ownership (BEI, n.d.), significantly enhance the quality of ESG disclosures (Alodat *et al.*, 2023; Ding *et al.*, 2024). The board of commissioners serves as the principal oversight entity to ensure the effective implementation of sustainability policies and procedures (Jensen & Meckling, 1976), while its expertise and resources enhance the quality of sustainability disclosures (Hillman *et al.*, 2009). The audit committee assumes a strategic role by leveraging its knowledge to mitigate manipulation and uphold transparency, thereby fulfilling stakeholder expectations for ESG disclosures (Alodat *et al.*, 2023; Lewa *et al.*, 2025; Mailani *et al.*, 2024; Seth & Saxena, 2025). Moreover, foreign ownership enhances the quality of ESG disclosure by facilitating information transfer and exerting pressure to alleviate agency risks (Dyck *et al.*, 2019; Erben Yavuz *et al.*, 2024; Hillman *et al.*, 2009).

This study seeks to assess the impact of corporate governance systems, including the effectiveness of the board of commissioners, the audit committee, and the participation of foreign investors, on ESG disclosure. This research offers companies, especially in the basic materials and energy sectors, insights into the significance of effective governance in enhancing the quality of ESG disclosure. It also contributes to existing literature on the correlation between ESG disclosure and corporate governance in developing nations, particularly those with dual-tier governmental structures such as Indonesia.

The significance of CG is paramount in the formulation of ESG disclosures (Alodat *et al.*, 2023; Ding *et al.*, 2024). The functions of corporate governance, especially the board of commissioners, the audit committee, and foreign ownership (BEI, n.d.), significantly enhance the quality of ESG disclosures (Alodat *et al.*, 2023; Ding *et al.*, 2024). The board of commissioners serves as the principal oversight entity to ensure the effective implementation of sustainability policies and procedures (Jensen & Meckling, 1976), while its expertise and resources enhance the quality of sustainability disclosures (Hillman *et al.*, 2009). The audit committee assumes a strategic role by leveraging its knowledge to mitigate manipulation and uphold transparency, thereby fulfilling stakeholder expectations for ESG disclosures (Alodat *et al.*, 2023; Lewa *et al.*, 2025; Mailani *et al.*, 2024; Seth & Saxena, 2025). Moreover, foreign ownership enhances the quality of ESG disclosure by facilitating information transfer and exerting pressure to alleviate agency risks (Dyck *et al.*, 2019; Erben Yavuz *et al.*, 2024; Hillman *et al.*, 2009).

This study seeks to assess the impact of corporate governance systems, including the effectiveness of the board of commissioners, the audit committee, and the participation of foreign investors, on ESG disclosure. This research offers companies, especially in the basic materials and energy sectors, insights into the significance of effective governance in enhancing the quality of ESG disclosure. It also contributes to existing literature on the correlation between ESG disclosure and corporate governance in developing nations, particularly those with dual-tier governmental structures such as Indonesia.

1.1. Board Director Effectiveness and ESG Disclosure

Three principal dimensions commonly employed to assess these qualities are board size, the ratio of independent board members, and the frequency of meetings (Alodat *et al.*, 2022, 2023). RDT posits that larger boards have greater potential to provide access to knowledge and other critical information resources necessary for addressing external environmental demands and stakeholder needs (Hillman *et al.*, 2009). Agency theory elucidates the supervisory function of boards in the formulation of ESG disclosures (Jensen & Meckling, 1976). A substantial board size significantly influences discussions on ESG disclosure techniques by introducing a variety of skills and experience (Janggu *et al.*, 2014).

Agency theory posits that a more autonomous board is motivated to behave impartially in supervising management, including ensuring transparency in non-financial information, such as ESG disclosures (Jensen & Meckling, 1976). Independent board members are perceived to operate free from internal influence, hence enhancing transparency and accountability. Studies by Ding *et al.* (2024) and Mkadmi & Daafous (2025) demonstrate a substantial correlation between the ratio of independent board members and the quality of ESG disclosure. From a Resource Dependence Theory perspective, increased meeting frequency offers a venue for board members to exchange pertinent information, experiences, and resources to enhance biodiversity (Hillman *et al.*, 2009). Prior studies indicate that the frequency of board meetings influences outcomes (Setyawan & Kamilla, 2015).

H1. The board of commissioners' effectiveness affects the quality of ESG disclosure.

1.2. Audit Committee Effectiveness and ESG Disclosure

The audit committee is a crucial metric for evaluating a company's effectiveness in oversight and accountability, especially in non-financial reporting such as ESG. According to agency theory (Jensen & Meckling, 1976), the audit committee serves as an internal control mechanism that mitigates information asymmetry and supervises management to ensure alignment with the company's and its stakeholders' interests. Moreover, RDT (Hillman *et al.*, 2009) suggests that audit committee members with competence and experience can be a significant asset to corporations in preparing high-quality ESG reports (Seth & Saxena, 2025). An efficient audit committee is defined by its size, adequate meeting frequency, and the inclusion of individuals possessing pertinent skills and industry knowledge (Alodat *et al.*, 2022, 2023).

H2. The audit committee's effectiveness affects the quality of ESG disclosure.

1.3. Foreign Ownership and ESG Disclosure

According to agency theory, foreign ownership can improve oversight mechanisms in management. Foreign investors, typically with elevated expectations for transparency and accountability, may exert pressure on management to reduce information asymmetry and enhance the quality of disclosures, including those related to sustainability or ESG reports (Jensen & Meckling, 1976). RDT highlights that foreign shareholders contribute resources such as finance, international networks, and global governance norms, which can motivate corporations to enhance the quality of ESG disclosures (Hillman et al., 2009). Consequently, foreign ownership functions both as a monitoring apparatus and as a source of strategic resources that propel corporations toward enhanced sustainability standards.

H3. Foreign ownership affects the quality of ESG disclosure.

2. RESEARCH METHOD

Based on the theoretical framework, the variables measured in this study were generated and modified from earlier research. The sample used in this study consisted of companies in the energy and basic materials sectors listed on the Indonesia Stock Exchange (IDX) between 2022 and 2024. The secondary data used in this study came from sustainability and annual reports that were available on the IDX website (www.idx.co.id) and/or the official company website. Purposive sampling methods were used to gather the sample in accordance with predetermined standards.

The quality of ESG disclosure (ESG) was the dependent variable, assessed using 122 indicators derived from Alodat *et al.* (2023) and based on the GRI Standards: 40 indicators for social concerns, 50 for governance, and 32 for environmental issues. Board effectiveness, audit committee effectiveness, and foreign ownership were used to evaluate the independent variable, CG. A composite score based on board size, independence, and meeting frequency was used to assess board effectiveness (BDEF) (Alodat *et al.*, 2022, 2023; Ding *et al.*, 2024; Janggu *et al.*, 2014; Mkadmi & Daafous, 2025; Setyawan & Kamilla, 2015).

A composite score based on size, frequency of meetings, financial expertise, and industry expertise is used to assess the efficacy of audit committees (ACEF) (Alodat *et al.*, 2023; Biçer & Feneir, 2019; Lewa *et al.*, 2025; Mahsina *et al.*, 2025; Pozzoli *et al.*, 2022). The percentage of foreign shares is used to calculate foreign ownership (FOWN) (Alodat *et al.*, 2022, 2023; Erben Yavuz *et al.*, 2024; Fuadah *et al.*, 2022). Leverage (LEV) using the ratio of total debt to total assets (Fraser & Ormiston, 2016) and Return on Equity (ROE), a gauge of business profitability (Dauderis & Annand, 2014), were used as a control variable of which may have an impact on ESG disclosure (Alodat *et al.*, 2023; Ding *et al.*, 2024; Leong & Yang, 2021; Wu *et al.*, 2022).

This study used an explanatory research design and a quantitative technique. Panel data regression with a Random Effects Model (REM) (Winarno, 2017) and Robustness testing (Neuman, 2014) were used for data analysis in STATA 17. The Baseline Model that will be used is expressed with the following formula:

$$ESG_{i,t} = \beta_0 + \beta_1 BDEF_{i,t} + \beta_2 ACEF_{i,t} + \beta_3 FOWN_{i,t} + \beta_4 LEV_{i,t} + \beta_5 ROE_{i,t} + e \qquad \textbf{(1)}$$

3. RESULTS AND DISCUSSIONS

Table 1. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ESGD	447	0.471	0.215	0.098	1
BDEF	447	2.539	0.623	1	3
ACEF	447	3.459	0.634	1	4
FOWN	447	0.190	0.248	0	0.998
LEV	447	0.475	0.430	0.001	4.756
ROE	447	0.225	0.696	-1.850	8.996

Our descriptive statistics is provided in Table 1. On average, the value of ESGD, BDEF, and ACEF are 0.471, 2.539, and 3.459, respectively. We also provide the correlation among variables in Table 2. The Spearman correlation analysis is employed because the data are not normally distributed. In addition, all correlation coefficients are less than 0.8, so there is no evidence of multicollinearity among the variables.

Table 2. Spearman Correlation

Variables	ESGD	BDEF	ACEF	FOWN	LEV	ROE
ESGD	1.000					
BDEF	0.251**	1.000				
ACEF	0.165**	0.189**	1.000			
FOWN	0.268**	0.237**	0.215**	1.000		
LEV	-0.064	0.004	0.015	0.041	1.000	
ROE	0.193**	0.047	0.037	-0.016	0.108*	1.000

Table 3. Hypothesis and Robustness Testing

No.	Variable	Baseline Model	Robustness Test	No.	Variable	Baseline Model	Robustness Test
1.	**BDEF**	**0.033***	**0.033***	**4.**	**LEV**	**-0.048***	**-0.048****
		(0.012)	**(0.017)**			**(0.026)**	**(0.016)**
2.	**ACEF**	**0.023****	**0 .023****	**5.**	**ROE**	**0.011***	**0 .011***
		(0.012)	**(0.011)**			**(0.006)**	**(0.006)**
3.	**FOWN**	**0.100****	**0.100****	**6.**	**_cons**	**0.303*****	**0.303*****
		(0.048)	**(0.043)**			**(0.050)**	**(0.050)**
***** p<.01, ** p<.05, * p<.1**							

The study's findings demonstrate that corporate governance substantially impacts the quality of ESG disclosure. This finding aligns with prior studies indicating that effective boards, audit committee and foreign investors are essential for enhancing the quality of sustainability reporting (Alodat et al., 2023; Erben Yavuz et al., 2024). From an agency theory, CG enhances the monitoring function (Jensen & Meckling, 1976), thereby elevating the quality of ESG disclosure (Ding et al., 2024). From a Resource Dependence Theory perspective, CG as a provider of resources, relationships, strategic information, and knowledge that enhance the quality of ESG reporting (Hillman et al., 2009).

An appropriately sized board, neither too small to lack competence nor too large to hinder efficient coordination, can incorporate greater technical expertise and diverse viewpoints pertinent to sustainability challenges (Erben Yavuz *et al.*, 2024; Janggu *et al.*, 2014). Independent commissioners possess stronger incentives to perform impartial oversight of management, thereby mitigating conflicts of interest and enhancing the credibility of the reporting process, thereby generating pressure to deliver more comprehensive and reliable ESG information (Ding *et al.*, 2024; Mkadmi & Daafous, 2025). Regular meetings indicate active supervisory engagement and continuous communication with management, corroborated by studies demonstrating that meeting frequency substantially influences sustainability disclosure (Setyawan & Kamilla, 2015). These attributes cultivate an effective board of commissioners, proficient at overseeing the integration of environmental, social, and governance issues into the company's strategy. This promotes greater reporting transparency and compels management to enhance disclosure quality, strengthen governance, and ensure the provision of pertinent information to stakeholders. This conclusion is further supported by the average board effectiveness score of 2.539, which approaches the maximum, hence augmenting the quality of ESG disclosure.

Audit committee's effectiveness, encompassing size, meeting frequency, accounting proficiency, and industry acumen, substantially influences ESG disclosure. This discovery corroborates prior studies indicating that a proficient audit committee can enhance the quality of information reported by corporations, including sustainability data (Alodat *et al.*, 2023). This conclusion is further corroborated by the average audit committee effectiveness score of 3.459, which is close to the maximum. Previous studies have similarly demonstrated that a proficient audit committee can enhance the quality of a company's sustainability disclosures (Metwally *et al.*, 2025; Salleh *et al.*, 2022). The research findings align with agency theory, indicating that oversight structures, such as audit committees, can mitigate information asymmetry, address agency problems, and enhance reporting quality (Jensen & Meckling, 1976). In a similar vein, RDT posits that audit committees provide their experience and knowledge, which constitute organisational resources, to guarantee transparent and high-quality ESG disclosures (Hillman *et al.*, 2009). Audit committees are essential for maintaining the integrity of financial and non-financial reporting. An effective audit committee can enhance internal control mechanisms and facilitate more thorough ESG disclosure.

The study also revealed that foreign ownership in a corporation markedly influences ESG disclosure. This finding suggests that foreign investors' presence compels companies to enhance the quality of ESG disclosures (Fuadah *et al.*, 2022) by providing strategic resources, including access to international capital markets and knowledge transfer on sustainability practices, which are essential for corporate sustainability (Hillman *et al.*, 2009). Research by Dyck *et al.* (2019) demonstrated that institutional investors worldwide actively promote enhanced CSR and ESG policies. A study by Erben Yavuz *et al.* (2024) similarly revealed that foreign ownership positively influences ESG disclosure, as the involvement of foreign shareholders enhances incentives to elevate sustainability performance. Foreign investors exert pressure on corporations to fulfil expectations, enhance transparency, and adopt sustainable practices.

4. CONCLUSION

This study examines how board of commissioner effectiveness, audit committee effectiveness, and foreign ownership influence the quality of ESG disclosure in basic materials and energy companies in Indonesia during 2022–2024. The study demonstrates the influence of corporate governance on the quality of ESG disclosure. This reflects the important role of governance in ensuring corporate transparency and accountability, particularly in industries with high environmental and social risks.

These findings align with agency theory, which states that the presence of governance as a monitor to ensure compliance and meet stakeholder expectations further encourages the disclosure of more comprehensive ESG information. From an RDT perspective, effective and diverse governance can provide resources, including extensive networks, business and risk knowledge, and expertise, to improve the quality of ESG disclosure. Overall, the results confirm that corporate governance and ownership structure play a central role in determining the quality of ESG disclosure in extractive companies in Indonesia.

A limitation of this study is the sample size, which includes only Basic Materials and Energy companies listed on the IDX during 2022–2024, thereby limiting the generalizability of the results to other sectors. Furthermore, not all companies in the sample submitted sustainability reports or disclosed all required CG characteristics. This study also only used the 2021 GRI Standards as the basis for measuring ESG disclosure, thus not fully representing the diversity of sustainability reporting standards being developed globally.

Future research is recommended to expand the sector coverage and observation period to make the results more comprehensive and comparable across industries. Using multiple ESG standards, such as ISSB or SASB, can provide a more comprehensive perspective on the quality of sustainability reporting. Furthermore, the addition of other governance variables, such as board gender diversity or the existence of a sustainability committee, is expected to more fully capture the complexity of corporate governance and enrich the understanding of the determinants of ESG disclosure over time.

REFERENCES

Alodat, A. Y., Salleh, Z., & Hashim, H. A. (2023). Corporate governance and sustainability disclosure: evidence from Jordan. Corporate Governance (Bingley), 23(3), 587–606. https://doi.org/10.1108/CG-04-2022-0162

Alodat, A. Y., Salleh, Z., Hashim, H. A., & Sulong, F. (2022). Corporate governance and firm performance: empirical evidence from Jordan. Journal of Financial Reporting and Accounting, 20(5), 866–896. https://doi.org/10.1108/JFRA-12-2020-0361

Biçer, A. A., & Feneir, I. M. (2019). The Impact of Audit Committee Characteristics on Environmental and Social Disclosures. International Journal of Research in Business and Social Science (2147- 4478), 8(3), 111–121. https://doi.org/10.20525/ijrbs.v8i3.262

Dauderis, H., & Annand, D. (2014). Introduction to Financial Accounting (Second Edition). http://business.athabascau.ca/faculty/david-annand-edd/

Ding, H., Wang, Z., Xu, H., & Lin, Z. (2024). A Study on the Impact of Board Characteristics on the Environmental, Social, and Governance (ESG) Responsibilities of Listed Companies—Evidence from Chinese Listings. Sustainability (Switzerland), 16(23). https://doi.org/10.3390/su162310490

Dyck, A., Lins, K. V., Roth, L., & Wagner, H. F. (2019). Do institutional investors drive corporate social responsibility? International evidence. Journal of Financial Economics, 131(3), 693–714. https://doi.org/10.1016/j.jfineco.2018.08.013

Erben Yavuz, A., Kocaman, B. E., Doğan, M., Hazar, A., Babuşcu, Ş., & Sutbayeva, R. (2024). The Impact of Corporate Governance on Sustainability Disclosures: A Comparison from the Perspective of Financial and Non-Financial Firms. Sustainability (Switzerland), 16(19). https://doi.org/10.3390/su16198400

Fraser, L. M. ., & Ormiston, Aileen. (2016). Understanding financial statements. Pearson.

Fuadah, L. L., Mukhtaruddin, M., Andriana, I., & Arisman, A. (2022). The Ownership Structure, and the Environmental, Social, and Governance (ESG) Disclosure, Firm Value and Firm Performance: The Audit Committee as Moderating Variable. Economies, 10(12). https://doi.org/10.3390/economies10120314

Giljum, S., Maus, V., Kuschnig, N., Luckeneder, S., Tost, M., Sonter, L. J., & Bebbington, A. J. (2022). A pantropical assessment of deforestation caused by industrial mining. https://doi.org/10.1073/pnas

Global Sustainable Investment Review. (2023). GSIA-Report-2022.

Hillman, A. J., Withers, M. C., & Collins, B. J. (2009). Resource dependence theory: A review. In Journal of Management (Vol. 35, Issue 6, pp. 1404–1427). https://doi.org/10.1177/0149206309343469

Hilson, G. (2012). Corporate Social Responsibility in the extractive industries: Experiences from developing countries. Resources Policy, 37(2), 131–137. https://doi.org/10.1016/j.resourpol.2012.01.002

IDX. (2021). BEI Implementasikan IDX Industrial Classification. IDX. https://www.idx.co.id/id/berita/siaran-pers/1456

Janggu, T., Darus, F., Zain, M. M., & Sawani, Y. (2014). Does Good Corporate Governance Lead to Better Sustainability Reporting? An Analysis Using Structural Equation Modeling. Procedia - Social and Behavioral Sciences, 145, 138–145. https://doi.org/10.1016/j.sbspro.2014.06.020

Jensen, M. C., & Meckling, W. H. (1976). THEORY OF THE FIRM: MANAGERIAL BEHAVIOR, AGENCY COSTS AND OWNERSHIP STRUCTURE. In Journal of Financial Economics (Vol. 3). Q North-Holland Publishing Company

Khamisu, M. S., & Paluri, R. A. (2024). Emerging trends of environmental social and governance (ESG) disclosure research. In Cleaner Production Letters (Vol. 7). Elsevier B.V. https://doi.org/10.1016/j.clpl.2024.100079

Leong, C. K., & Yang, Y. C. (2021). Constraints on "Doing Good": Financial constraints and corporate social responsibility. Finance Research Letters, 40. https://doi.org/10.1016/j.frl.2020.101694

Lewa, E. M., Gatimbu, K. K., & Kariuki, P. W. ombe. (2025). Sustainability reporting in sub-Sharan Africa: Does audit committee diversity and executive compensation matter? Social Sciences and Humanities Open, 11. https://doi.org/10.1016/j.ssaho.2024.101262

Lončar, D., Paunković, J., Jovanović, V., & Krstić, V. (2019). Environmental and social responsibility of companies cross EU countries – Panel data analysis. Science of the Total Environment, 657, 287–296. https://doi.org/10.1016/j.scitotenv.2018.11.482

Mahsina, M., Agustia, D., Nasution, D., & Dianawati, W. (2025). The mediating role of risk management in the relationship between audit committee effectiveness and firm sustainability performance. Corporate Governance (Bingley), 25(3), 534–566. https://doi.org/10.1108/CG-10-2023-0450

Mailani, D., Hulu, M. Z. T., Simamora, M. R., & Kesuma, S. A. (2024). Resource-Based View Theory to Achieve a Sustainable Competitive Advantage of the Firm: Systematic Literature Review. International Journal of Entrepreneurship and Sustainability Studies, 4(1), 1–15. https://doi.org/10.31098/ijeass.v4i1.2002

Metwally, A. B. M., Abdalla, G. S. S., Aly, S. A. S., & Ali, M. A. S. (2025). ESG Disclosure and Firm Value: Do Audit Committee Characteristics and Sustainability Committee Matter? International Journal of Financial Studies, 13(4), 188. https://doi.org/10.3390/ijfs13040188

Mkadmi, J. E., & Daafous, W. (2025). Does corporate governance affect the environmental, social and governance disclosure? A cross-country study. Central European Management Journal. https://doi.org/10.1108/CEMJ-10-2023-0406

Neuman, W. Lawrence. (2014). Social research methods : qualitative and quantitative approaches. Pearson.

Pozzoli, M., Pagani, A., & Paolone, F. (2022). The impact of audit committee characteristics on ESG performance in the European Union member states: Empirical evidence before and during the COVID-19 pandemic. Journal of Cleaner Production, 371. https://doi.org/10.1016/j.jclepro.2022.133411

PwC. (2024). Traversing the landscapes of sustainability reporting in Asia Pacific and beyond.

Salleh, Z., Seno, R., Alodat, A. Y. M., & Hashim, H. A. (2022). DOES THE AUDIT COMMITTEE EFFECTIVENESS INFLUENCE THE REPORTING PRACTICE OF GHG EMISSIONS IN MALAYSIA? Journal of Sustainability Science and Management, 17(1), 204–220. https://doi.org/10.46754/jssm.2022.01.014

Seth, H., & Saxena, A. (2025). Demystifying the nexus of audit committee characteristics and sustainability performance. Managerial Finance, 51(8), 1352–1376. https://doi.org/10.1108/MF-06-2024-0434

Setyawan, H., & Kamilla, P. (2015, August 12). Impact of Corporate Governance on Corporate Environmental Disclosure: Indonesian Evidence. https://doi.org/10.15242/icehm.ed815026

Tsang, A., Frost, T., & Cao, H. (2023). Environmental, Social, and Governance (ESG) disclosure: A literature review. British Accounting Review, 55(1). https://doi.org/10.1016/j.bar.2022.101149

Winarno, W. W. (2017). Analisis Ekonometrika dan Statistika dengan EViews Wing Wahyu Winarno Penerbit UPP STIM YKPN Yogyakarta.

World Bank Group. (2025). Extractive Industries. https://www.worldbank.org/en/topic/extractiveindustries/overview?

Wu, S., Li, X., Du, X., & Li, Z. (2022). The Impact of ESG Performance on Firm Value: The Moderating Role of Ownership Structure. Sustainability (Switzerland), 14(21). https://doi.org/10.3390/su142114507