DIJEFA: Dinasti International Journal of Economics, Finance & Accounting
E-ISSN: 2721-303X
P-ISSN: 2721-3021
https://dinastipub.org/DIJEFA dinasti.info@gmail.com +62 811 7404 455

DOI: https://doi.org/10.38035/dijefa.v7i2.6799
https://creativecommons.org/licenses/by/4.0/
Received: 03 May 2026 | **Revised:** 17 May 2026 | **Accepted:** 03 June 2026

The Effect of ESG Performance on Audit Report Lag: The Moderating Role of Audit Firm Size

Anisa Eka Askiantari[1*], Abdul Rohman[2]
[1]Universitas Diponegoro, Semarang, Indonesia, anisaekaas@students.undip.ac.id
[2]Universitas Diponegoro, Semarang, Indonesia, abdulrohman@lecturer.undip.ac.id

*Corresponding Author: anisaekaas@students.undip.ac.id[1]

Abstract: This study examines the effect of *Environmental, Social, and Governance* (ESG) performance on *audit report lag* (ARL) with audit firm size as a moderating variable. The study employs a quantitative approach using panel data from manufacturing companies listed on the Indonesia Stock Exchange during the 2019–2024 period. Data were analyzed using panel regression with the *Random Effect Model* (REM). The results indicate that the *governance score* has a significant negative effect on *audit report lag*, while the *environment score* and *social score* do not show significant effects. Furthermore, audit firm size only moderates the relationship between *social score* and *audit report lag*, whereas no moderating effect is found for the environmental and governance dimensions. These findings suggest that auditors place greater emphasis on governance quality than on environmental and social disclosures in assessing audit risk and audit efficiency. This study contributes to the literature on ESG and audit timeliness in emerging markets and provides practical implications for companies, auditors, and regulators regarding the importance of governance quality and ESG integration in improving financial reporting timeliness.

Keywords: ESG Score, Audit Report Lag, Audit Firm Size, Corporate Governance, Panel Data

INTRODUCTION

The implementation of Environmental, Social, and Governance (ESG) principles has gained increasing attention in both global and national business practices due to its potential to enhance corporate reputation, sustainability, and governance quality (Fatemi et al., 2018; Putra, 2021). In Indonesia, commitment to sustainability practices has been strengthened through the issuance of SE POJK No. 51/POJK.03/2017, which requires publicly listed companies to publish sustainability reports. In addition, the Indonesia Stock Exchange has introduced ESG-based indices, such as SRI-KEHATI and ESG Quality 45 IDX KEHATI, to encourage the adoption of sustainable business practices (Bursa Efek Indonesia, 2024). These developments indicate that ESG is no longer viewed merely as a voluntary initiative but has become a strategic component of modern corporate governance (Wulansari, 2025).

Strong ESG performance is closely associated with higher internal control quality. Companies with higher ESG scores tend to have more effective governance systems, risk

management practices, and internal controls, thereby improving the reliability of financial reporting (Kim et al., 2017; Koo & Ki, 2020; Moffitt et al., 2023). One important indicator reflecting the effectiveness of internal controls is audit report lag (ARL), which refers to the period between the fiscal year-end and the issuance date of the audited financial statements. A longer ARL may indicate greater audit complexity or weaknesses in a company's internal control system (Harymawan et al., 2021).

Previous studies have shown that firms with superior ESG performance tend to experience shorter audit report lag due to lower audit risk and stronger governance quality (Asante-Appiah, 2020; Jizi & Thomas, 2025; Lamptey et al., 2023). Furthermore, companies audited by Big Four audit firms generally demonstrate more efficient audit processes than those audited by non-Big Four audit firms (Wang & Chao, 2024). However, empirical evidence regarding the relationship between ESG performance and audit report lag in Indonesia remains limited.

Most prior studies in Indonesia have primarily focused on firm characteristics and conventional corporate governance mechanisms in explaining audit report lag (Fitrianggraeni et al., 2023). Research specifically examining the effect of ESG scores on audit report lag as a proxy for internal control quality remains scarce. Therefore, this study aims to examine the effect of ESG scores on audit report lag among manufacturing companies in Indonesia during the 2019–2024 period while considering the moderating role of audit firm size, namely Big Four and non-Big Four audit firms.

Theoretical Foundation

This study is grounded in stakeholder theory and signalling theory to explain the relationship between Environmental, Social, and Governance (ESG) practices and audit report lag (ARL). Stakeholder theory (Freeman, 1984) emphasizes that companies should consider the interests of various stakeholders, including investors, regulators, employees, and society, in conducting business activities. In this context, ESG implementation reflects a company's commitment to sustainability, transparency, and good corporate governance. Firms with strong ESG practices are generally associated with more effective internal control systems, which enhance the quality and credibility of financial reporting.

Meanwhile, signalling theory (Spence, 1973) explains that companies provide signals to external parties to reduce information asymmetry. ESG scores can be viewed as non-financial signals that indicate governance quality, transparency, and lower corporate risk. These signals may increase auditors' confidence in the reliability of corporate information, allowing the audit process to be completed more efficiently and resulting in shorter audit report lag.

Accordingly, ESG serves not only as a representation of corporate responsibility toward stakeholders but also as an indicator of governance quality and internal control effectiveness. Therefore, companies with higher ESG performance are expected to experience more efficient audit processes and shorter audit report lag compared to firms with lower ESG performance.

ESG Disclosure and Audit Report Lag

The implementation of Environmental, Social, and Governance (ESG) practices is increasingly viewed as an important indicator of corporate governance quality and sustainability. From the perspective of stakeholder theory, companies are expected not only to pursue profits but also to address the interests of investors, regulators, employees, and society. Meanwhile, signalling theory suggests that ESG disclosure can serve as a positive signal to external parties regarding corporate transparency, integrity, and internal control quality. Companies with higher ESG scores are generally perceived to have lower business and audit risks, allowing auditors to gain confidence in the reliability of corporate information more

easily. As a result, the audit process may become more efficient and lead to a shorter audit report lag (ARL).

More specifically, the environment score reflects the extent to which a company is committed to environmental management and sustainability practices. Strong environmental disclosure indicates transparency and long-term corporate responsibility. The social score represents a company's concern for social issues, including employee relations, community engagement, and ethical business practices, which may enhance auditors' perceptions of corporate integrity. Meanwhile, the governance score is associated with the quality of corporate governance, oversight effectiveness, and the strength of internal control systems. These three dimensions may influence auditors' risk assessments and the efficiency of the audit process. Therefore, this study proposes that environment score, social score, and governance score negatively affect audit report lag.

H_1: Environment score negatively affect audit report lag.
H_2: Social score negatively affect audit report lag.
H_3: Governance score negatively affect audit report lag.

The Moderating Role of Auditor Size

Audit firm size is widely regarded as an indicator of audit quality and the credibility of the financial reporting process. From the perspective of stakeholder theory, companies are expected to maintain stakeholder trust by providing reliable and timely financial information. Meanwhile, signalling theory suggests that high ESG scores serve as positive signals of strong governance quality and effective internal controls. However, the strength of these signals may also depend on the credibility of the external auditor responsible for verifying the company's financial statements.

Big Four audit firms generally possess greater resources, experience, and audit technology than non-Big Four firms, enabling them to better understand ESG-related risks and conduct audits more efficiently. Companies with high ESG scores audited by Big Four firms are therefore more likely to experience shorter audit processes because auditors tend to have greater confidence in the company's internal control quality and transparency. Accordingly, audit firm size is expected to strengthen the negative relationship between ESG and audit report lag. Therefore, this study proposes that audit firm size moderates the effect of environment score, social score, and governance score on audit report lag, with the relationship being stronger for companies audited by Big Four audit firms.

H_4: Audit firm size moderates the effect of environment score on audit report lag.
H_5: Audit firm size moderates the effect of social score on audit report lag.
H_6: Audit firm size moderates the effect of governance score on audit report lag.

METHODS

This study employs a quantitative approach with a causal and explanatory research design to examine the effect of Environmental, Social, and Governance (ESG) scores on audit report lag (ARL) and to investigate the moderating role of audit firm size. The study also controls for corporate governance and financial characteristic variables to obtain more comprehensive results. The research uses secondary data obtained from the annual reports and sustainability reports of manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the 2019–2024 period. A panel data method is applied because the study combines cross-sectional and time-series data. The population consists of all manufacturing firms listed on the IDX, while the sample is selected using purposive sampling based on several criteria: companies must not be delisted during the observation period, consistently publish annual and sustainability reports, provide complete ESG and research variable data, and use a fiscal year ending on December 31 to ensure consistency in measuring audit report lag.

Table 1 Variable Operationalization Measuring

Type	Variable	Symbol	Proxy
Independent Variable (X)	ESG Score	ESG	Corporate ESG score (Irnanda & Fitrani, 2021)
Dependent Variable (Y)	Audit Report Lag (ARL)	ARL	Number of days between the fiscal year-end and the issuance date of the audited financial statements (Putri & Widuri, 2022; Zhang & Wu, 2021)
Moderating Variable (Z)	Audit Firm Size	KAP	Dummy: 1 = audited by Big Four; 0 = audited by non-Big Four (Oh & Jeon, 2022)
Control Variables	Corporate Governance		
	Independent Commissioners	KI	Percentage of independent commissioners to total board members (Putri & Widuri, 2022)
	Gender Diversity	GEND	Percentage of female board commissioners (Jizi & Thomas, 2025)
	Board Meetings	MEET	Number of board of commissioners meetings per year (Lestari & Wulandari, 2023)
	Audit Fees	FEE	Annual audit fees (in million rupiah) (Putri & Widuri, 2022; Zhang & Wu, 2021)
	Financial Characteristics		
	Firm Size	SIZE	Natural logarithm of total assets (Jizi & Thomas, 2025)
	Profitability (ROA)	ROA	Net income divided by total assets (Irnanda & Fitrani, 2021; Putri & Widuri, 2022)
	Leverage (DER)	DER	Total liabilities divided by total equity (Irnanda & Fitrani, 2021; Zhang & Wu, 2021)

Source: Research Data, 2026

RESULTS AND DISCUSSION

Results

The descriptive statistics indicate that this study uses 402 observations during the 2019–2024 period. The *audit report lag* (Y) variable has an average value of 84.32 days, with a minimum of 27 days and a maximum of 272 days, indicating variation in audit completion timeliness across firms. The ESG variable shows an average score of 0.31 with a maximum value of 0.77, suggesting that the level of ESG implementation among sample firms remains relatively diverse. Among the ESG dimensions, the *governance score* has the highest average compared to the *environment* and *social* scores, indicating that firms tend to place greater emphasis on governance practices than environmental and social aspects. In addition, the moderating variable of audit firm size has a mean value of 0.58, implying that most sample firms are audited by Big Four audit firms. The control variables, including firm size, profitability, leverage, gender diversity, audit fees, and board meeting frequency, also demonstrate sufficient variation to support further analysis in this study.

Table 2 Descriptive statistical test results

Variable	N	Mean	Min	Max	Std. Dev.
ENV (X1)	402	0.305	0.000	0.769	0.211
SOC (X2)	402	0.280	0.000	0.645	0.154
GOV (X3)	402	0.646	0.000	0.968	0.289
ARL (Y)	402	84.323	27	272	29.024
KAP (Z)	402	0.582	0	1	0.494
KI (K1)	402	0.412	0.100	1.000	0.126
GEND (K2)	402	0.091	0.000	0.800	0.157
MEET (K3)	402	10.858	2	50	10.382

Variable	N	Mean	Min	Max	Std. Dev.
FEES (K4)	402	8.60E+09	1.90E+09	1.38E+10	1.78E+10
SIZE (K5)	402	30.378	27.149	37.869	1.353
ROA (K6)	402	0.073	-0.097	0.996	0.118
LEV (K7)	402	0.636	-3.360	12.680	1.064

Source: Research Data, 2026

The *Fixed Effect Model* (FEM) estimation indicates a *near singular matrix* problem, suggesting strong linear relationships among the independent variables. Therefore, the analysis was continued using the *Random Effect Model* (REM) and *Common Effect Model* (CEM). The REM results show that the *environment score*, *social score*, and *governance score* do not significantly affect *audit report lag*. Leverage has a significant negative effect, while firm size has a significant positive effect on *audit report lag*. In the CEM, the *environment score* and audit firm size have significant negative effects on *audit report lag*, whereas firm size has a significant positive effect. The F-statistic probability values in both models are below 0.05, indicating that the models are statistically appropriate.

Panel data model selection was conducted using the Chow, Hausman, and Lagrange Multiplier (LM) tests. In the Chow test, the *Fixed Effect Model* could not be estimated due to a *near singular matrix* problem; therefore, the analysis proceeded using the *Random Effect Model* (REM). The Hausman test produced a probability value of 0.2721 (>0.05), indicating that REM was more appropriate than FEM. Furthermore, the LM test showed a Breusch-Pagan probability value of 0.0000 (<0.05), suggesting that REM was preferable to the *Common Effect Model* (CEM). Based on these results, the *Random Effect Model* (REM) was selected as the most appropriate model for this study.

Table 3 Panel Data Model Selection

Test	Test Statistic / Prob.	Decision	Selected Model
Chow Test	FEM could not be estimated (*near singular matrix*)	FEM not estimable	–
Hausman Test	Prob. = 0.2721	Accept REM	REM
Lagrange Multiplier (LM) Test	Prob. = 0.0000	Accept REM	REM

Source: Research Data, 2026

In this study, the classical assumption tests focus on multicollinearity and heteroskedasticity because these tests are considered the most relevant for panel data regression using the *Random Effect Model* (REM). The multicollinearity test results show that all variables have *Centered Variance Inflation Factor* (VIF) values below 10, indicating the absence of strong linear relationships among the independent variables. Furthermore, the heteroskedasticity test results reveal that all variables have probability values above 0.05, suggesting that the regression model is free from heteroskedasticity problems. Therefore, the research model satisfies the basic regression assumptions and is appropriate for further hypothesis testing.

Table 4 Classical Assumption Tests

Variable	VIF	Prob.
X1	2.574	0.2272
X2	4.274	0.6314
X3	3.469	0.3805
Z	1.256	0.7902
K1	1.146	0.7472
K2	1.092	0.0691
K3	1.180	0.5134
K4	1.486	0.0601
K5	1.440	0.9368
K6	1.093	0.1064
K7	1.116	0.6022

Source: Research Data, 2026

The *Random Effect Model* (REM) regression results show an *Adjusted R-squared* value of 0.068957, indicating that the independent variables explain 6.89% of the variation in *audit report lag*, while the remaining variation is explained by factors outside the research model. The *Prob(F-statistic)* value of 0.000316 (<0.05) indicates that all independent variables simultaneously have a significant effect on *audit report lag*, suggesting that the regression model is statistically appropriate. Based on the partial test (*t-test*), the *environment score* and *social score* do not significantly affect *audit report lag*, with probability values of 0.2453 and 0.4908 (>0.05), respectively. In contrast, the *governance score* has a significant negative effect on *audit report lag* with a probability value of 0.0143 (<0.05), indicating that stronger corporate governance leads to shorter audit completion periods.

Table 5 Random Effect Model Regression Results

Variable	Coefficient	t-Statistic	Prob.	Result
Constant (C)	3.029868	3.204870	0.0015	Significant
Environment Score (X1)	-0.051143	-1.163946	0.2453	Not Significant
Social Score (X2)	0.050382	0.689853	0.4908	Not Significant
Governance Score (X3)	-0.110571	-2.463094	0.0143	Significant
X1 × KAP	0.034001	0.299735	0.7650	Not Significant
X2 × KAP	-1.215866	-2.028043	0.0454	Significant
X3 × KAP	0.057433	0.696304	0.4880	Not Significant

Source: Research Data, 2026

The results of the *Moderated Regression Analysis* (MRA) indicate that audit firm size does not moderate the effect of *environment score* and *governance score* on *audit report lag*. This is reflected in the interaction variables X1_Z and X3_Z, which have probability values of 0.7650 and 0.4880 (>0.05), respectively. In contrast, the interaction variable X2_Z has a probability value of 0.0454 (<0.05) with a negative coefficient of -1.215866, indicating that audit firm size moderates the effect of *social score* on *audit report lag*. The negative coefficient suggests that Big Four audit firms strengthen the negative relationship between *social score* and *audit report lag*, meaning that firms with higher *social scores* audited by Big Four firms tend to experience shorter audit completion periods.

Discussion

The Effect of ESG on Audit Report Lag

The regression results show that the *governance score* has a negative and significant effect on *audit report lag* (coefficient = -0.110571; t-statistic = -2.463094; p-value = 0.0143),

supporting H3. In contrast, the *environment score* (coefficient = -0.051143; p-value = 0.2453) and *social score* (coefficient = 0.050382; p-value = 0.4908) do not significantly affect *audit report lag*, leading to the rejection of H1 and H2. These findings indicate that governance practices play a more important role in improving audit efficiency than environmental and social disclosures. From the perspective of *stakeholder theory*, effective governance strengthens transparency, accountability, and internal control quality, thereby increasing stakeholder and auditor confidence in the reliability of financial reporting. In line with *signaling theory*, strong governance practices provide positive signals regarding lower audit risk and better organizational oversight, enabling auditors to complete audit procedures more efficiently. The findings are consistent with prior studies by Jizi & Thomas (2025) and Oh & Jeon (2022), which reported that stronger governance quality contributes to shorter *audit report lag*. However, the insignificant effects of environmental and social scores suggest that ESG implementation in Indonesia may still emphasize symbolic disclosure rather than substantive integration into corporate reporting and internal control systems. This result is in line with Irnanda & Fitrani (2021), who found that ESG disclosure has not yet fully influenced audit quality and reporting efficiency in the Indonesian context.

The Moderating Role of Auditor Firm Size in the Relationship between ESG and Audit Report Lag

The moderation analysis indicates that audit firm size only moderates the relationship between *social score* and *audit report lag* (coefficient = -1.215866; t-statistic = -2.028043; p-value = 0.0454), supporting H5. Meanwhile, the interaction effects between audit firm size and *environment score* (p-value = 0.7650) as well as *governance score* (p-value = 0.4880) are not statistically significant, leading to the rejection of H4 and H6. These findings suggest that the role of Big Four audit firms becomes more relevant when evaluating corporate social disclosures compared to environmental and governance disclosures. From a *signaling theory* perspective, firms audited by Big Four auditors may deliver stronger and more credible social responsibility signals because large audit firms are perceived to possess greater expertise, audit quality, and ESG-related knowledge. Consequently, auditors may assess socially responsible firms as having lower audit risk, which contributes to shorter audit completion periods. This finding supports the study of Oh and Jeon (2022), which found that audit quality strengthens the relationship between ESG practices and audit efficiency. However, the absence of moderating effects on environmental and governance dimensions indicates that the credibility of ESG information in these areas may not yet depend on auditor size in the Indonesian market.

CONCLUSION

This study examines the effect of Environmental, Social, and Governance (ESG) performance on audit report lag (ARL) with audit firm size as a moderating variable among manufacturing companies listed on the Indonesia Stock Exchange during the 2019–2024 period. The findings indicate that only the governance score has a significant negative effect on audit report lag, while the environment score and social score do not show significant effects. These results suggest that auditors place greater emphasis on corporate governance quality than on environmental and social disclosures when assessing audit risk and audit efficiency. Furthermore, audit firm size only moderates the relationship between social score and audit report lag, whereas no significant moderating effects are found for the environmental and governance dimensions.

From a theoretical perspective, the findings support stakeholder theory and signalling theory, particularly regarding the role of corporate governance as a signal of internal control quality and corporate transparency. The results also indicate that ESG implementation in Indonesia may not yet be fully integrated into corporate reporting and internal control systems,

especially in the environmental and social dimensions. Practically, companies should strengthen governance quality and implement ESG practices more substantively to improve financial reporting credibility and audit efficiency. This study is limited to manufacturing firms and a relatively limited observation period. Therefore, future research is encouraged to expand the research scope across industries, apply alternative ESG measurements, and consider additional variables that may influence audit report lag.

REFERENCES

Asante-Appiah, B. (2020). Does the severity of a client's negative environmental, social and governance reputation affect audit effort and audit quality? *Journal of Accounting and Public Policy*, *39*.

Bursa Efek Indonesia, B. (2024). *Panduan Pelaporan ESG IDX Modul*.

Fatemi, A., Glaum, M., & Kaiser, S. (2018). ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal*, *38*, 45–64. https://doi.org/https://doi.org/10.1016/j.gfj.2017.03.001

Fitrianggraeni, S., Ilyas, R. B., Saputra, D. B., & Hapsari, F. D. (2023). *Regulations of ESG Investing and Its Implementation in Indonesia 2023*. https://www.ap-lawsolution.com/actio/regulations-of-esg-investing-and-its-implementation-in-indonesia-2023

Freeman, R. E. (1984). Strategic Management: A Stakeholder Approach. *Pitman Publishing*.

Harymawan, I., Nowland, J., & Nurillah, D. (2021). Audit report lag in Indonesia: The role of political connections and family ownership. *International Journal of Accounting Information Systems*.

Irnanda, R., & Fitrani, E. (2021). ESG dan Audit Delay: Bukti Empiris dari Emiten Indeks SRI KEHATI. *Jurnal Ekonomi Dan Keuangan Islam*, *7*(1), 55–66. https://doi.org/https://doi.org/10.20885/jeki.vol7.iss1.art5

Jizi, M., & Thomas, E. (2025). Does sustainability performance reflect the quality of internal controls? *Journal of Accounting and Organizational Change*. https://doi.org/10.1108/JAOC-07-2024-0247

Kim, Y., Kim, H., & Kim, Y. (2017). Corporate social responsibility and internal control effectiveness. *Asia-Pacific Journal of Financial Studies*, *46*(2), 341–372.

Koo, J., & Ki, E. (2020). Internal control personnel's experience, internal control weaknesses, and ESG rating. *Sustainability*, *12*(20), 8645.

Lamptey, E., Park, I., & Bonaparte, J. (2023). Does corporate social responsibility affect the timeliness of audited financial information? Evidence from 100 best corporate citizens. *Journal of Risk and Financial Management*, *16*(2), 1–21.

Lestari, S. D., & Wulandari, T. R. (2023). Pengaruh Struktur Tata Kelola dan ESG terhadap Kualitas Pelaporan Keuangan di Indonesia. *Jurnal Akuntansi Multiparadigma*, *14*(2), 320–338.

Moffitt, J. S., Patin, L., & Watson, J. C. A. (2023). Corporate environmental, social, and governance (ESG) performance and the internal control environment. *Accounting Horizons*, 1–22.

Oh, H., & Jeon, S. (2022). ESG performance and audit report lag: Evidence from Korea. *Journal of Applied Accounting Research*, *23*(3), 455–472. https://doi.org/10.1108/JAAR-10-2021-0255

Putra, A. (2021). THE EFFECT OF CEO CHARACTERISTICS ON PRE-EARNINGS MANAGEMENT PROFITABILITY. *Jurnal Akuntansi Dan Keuangan Indonesia*, *18*(2), 116–147. https://doi.org/10.21002/jaki.2021.07

Putri, R. D. A., & Widuri, R. (2022). Determinan Audit Report Lag pada Perusahaan Indonesia. *Jurnal Akuntansi Dan Keuangan Indonesia*, *19*(1), 45–62.

https://doi.org/https://doi.org/10.21002/jaki.v19i1.1914
Spence, M. (1973). Job Market Signaling. *He Quarterly Journal of Economics*, *83*(7), 355–374. https://doi.org/https://doi.org/10.2307/1882010
Wang, Y. F., & Chao, C. C. (2024). ESG risk and audit firm reputation. *International Journal of Business and Economic Sciences Applied Research*. https://doi.org/https://doi.org/10.25103/ijbesar.171.03
Wulansari, E. (2025). *Strategi Keuangan dan Keberlanjutan: Analisis Pengaruh Kinerja Keuangan dan Sustainability Report Terhadap Pertumbuhan Laba Di Sektor Farmasi (2019-2023)*. *6*(3), 1811–1820.
Zhang, L., & Wu, Y. (2021). The impact of ESG performance on audit fees and audit delay: Evidence from China. *Asian Journal of Accounting Research*, *6*(3), 234–248. https://doi.org/10.1108/AJAR-09-2020-0075