Sustainability and Capital Structure: Financial Performance in Logistics Companies

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Submitted:
AUGUST 2025

Accepted:
OCTOBER 2025

ABSTRACT

The logistics and transportation sector plays a critical role in global and national supply chains but is also characterized by high energy consumption and environmental emissions. Despite the increasing adoption of Environmental, Social, and Governance (ESG) practices, empirical evidence on their financial implications in Indonesian logistics companies remains limited. This study examines the impact of ESG performance on corporate financial performance, measured by Return on Assets (ROA) and Return on Equity (ROE), with capital structure (Debt-to-Equity Ratio) as a control variable. Using panel data from 44 listed logistics companies in Indonesia over the period 2019–2023, this research employs Partial Least Squares Structural Equation Modeling (PLS-SEM) and multigroup analysis to compare national and multinational firms. The results indicate that environmental performance has a positive and significant effect on ROA, while social performance positively influences ROE. Conversely, governance performance shows a negative association with ROE, suggesting potential compliance and administrative cost trade-offs. The capital structure variable does not significantly affect financial performance. Furthermore, the ESG–financial performance relationship is stronger among multinational companies compared to national firms. These findings contribute to the sustainability accounting and corporate governance literature by demonstrating that selective ESG integration creates financial value in the logistics sector, particularly through environmental and social initiatives, while governance mechanisms should be implemented efficiently to avoid reducing operational and financial flexibility. The study provides implications for regulators, corporate managers, and investors in strengthening ESG-based financial and reporting strategies in emerging markets. The negative association between governance performance and ROE can be explained by several theoretical perspectives. The over-governance hypothesis suggests that excessive governance mechanisms may constrain managerial flexibility and slow decision-making, particularly in dynamic industries such as logistics. Compliance cost theory further argues that governance implementation entails substantial administrative and monitoring costs that may reduce short-term profitability. From a managerial entrenchment perspective, rigid governance structures may discourage risk-taking and innovation, thereby limiting growth opportunities. The managerial entrenchment theory argues that strong

JIAKES

Jurnal Ilmiah Akuntansi Kesatuan
Vol. 13 No. 5, 2025
pg. 1395 - 1410
IBI Kesatuan
ISSN 2337 – 7852
E-ISSN 2721 – 3048
DOI: 10.37641/jiakes.v13i5.3701

governance mechanisms can sometimes entrench management by increasing monitoring structures and formal procedures, which may discourage risk-taking and innovation. Consequently, firms may experience lower growth opportunities and reduced equity returns. Moreover, ESG overinvestment theory posits that excessive investment in governance beyond optimal levels may destroy shareholder value. Consistent with agency theory and Friedman's shareholder primacy perspective, managers may overinvest in governance and sustainability initiatives for legitimacy or reputational benefits, which increases agency costs and reduces shareholder returns.

Keywords: Environmental, Social, Governance, Financial Performance, Logistics Companies

ABSTRAK

Sektor logistik dan transportasi memiliki peran strategis dalam mendukung rantai pasok nasional dan global, namun juga merupakan sektor dengan intensitas energi dan emisi yang tinggi. Seiring meningkatnya adopsi praktik Environmental, Social, and Governance (ESG), bukti empiris mengenai implikasi ESG terhadap kinerja keuangan perusahaan di Indonesia masih terbatas. Penelitian ini bertujuan untuk menganalisis pengaruh kinerja ESG terhadap kinerja keuangan perusahaan yang diukur menggunakan Return on Assets (ROA) dan Return on Equity (ROE), dengan struktur modal (Debt-to-Equity Ratio) sebagai variabel kontrol. Penelitian ini menggunakan data panel dari 44 perusahaan logistik yang terdaftar di Bursa Efek Indonesia selama periode 2019–2023. Data dianalisis menggunakan Partial Least Squares Structural Equation Modeling (PLS-SEM) serta analisis multigroup untuk membandingkan perusahaan nasional dan multinasional. Hasil penelitian menunjukkan bahwa kinerja lingkungan berpengaruh positif dan signifikan terhadap ROA, sedangkan kinerja sosial berpengaruh positif terhadap ROE. Sebaliknya, kinerja tata kelola menunjukkan hubungan negatif dengan ROE, yang mengindikasikan adanya trade-off antara kepatuhan tata kelola dan fleksibilitas operasional perusahaan. Struktur modal tidak berpengaruh signifikan terhadap kinerja keuangan. Selain itu, hubungan antara ESG dan kinerja keuangan lebih kuat pada perusahaan multinasional dibandingkan perusahaan nasional. Temuan ini berkontribusi pada literatur akuntansi keberlanjutan dan tata kelola perusahaan dengan menunjukkan bahwa integrasi ESG secara selektif dapat menciptakan nilai finansial di sektor logistik, khususnya melalui aspek lingkungan dan sosial, sementara mekanisme tata kelola perlu diimplementasikan secara efisien agar tidak mengurangi fleksibilitas keuangan dan operasional perusahaan.

Kata kunci: *Environmental, Social, Governance, Kinerja Keuangan, Perusahaan Logistik*

INTRODUCTION

The logistics and transportation industry is an important sector in supporting the smooth flow of goods and services, especially in the era of globalization and economic digitalization. However, this sector is also a significant contributor to carbon emissions, energy consumption, and intensive use of resources. Attention to corporate sustainability practices has increased in recent years, driving the adoption of environmental, social, and governance (ESG) concepts as strategic non-financial performance metrics (Maiti, 2021). ESG is now a key focus in the world of investment and management as it is considered to reflect governance quality, social responsibility, and environmental awareness. In the context of logistics, the implementation of ESG is important to reduce negative environmental impacts, improve operational efficiency, and build a sustainable reputation (Luo, 2022). However, the relationship between ESG scores and financial performance still shows mixed results, particularly in the Indonesian logistics and transportation sector.

This sector was chosen because of its significant contribution to carbon emissions and energy intensity, as well as its role as the backbone of the national supply chain. Amid global demands and pressure from regulators such as the OJK and international ESG rating agencies, the industry faces the challenge of balancing efficiency, profitability, and

sustainability. ESG studies in this sector in Indonesia are still limited, making this research relevant and urgent. Financial performance is typically measured through return on assets (ROA) and return on equity (ROE), which reflect a company's effectiveness in generating profits from its assets and equity. High ROA and ROE indicate efficient resource management. Meanwhile, the debt-to-equity ratio (DER) affects performance because high leverage increases risk and can hinder ESG investment (Clément et al., 2022).

Efficiency in shipping is driving digitalization and operational transformation in the logistics sector. However, profit-oriented efficiency is not always in line with sustainability. Many companies still face a dilemma between short-term costs and investments in green technology or social responsibility. Investors are now beginning to consider ESG scores in decision-making, making companies with high scores more attractive to institutional investors and international trading partners (Aydoğmuş et al., 2022). This is shifting the paradigm of sustainability into a key component of growth strategy and risk management. Logistics and transportation operations are highly dependent on land, sea, and air modes of transport, which are intensive users of fossil fuels and energy and generate significant waste and emissions (McKinnon, 2018). The application of ESG principles encompasses environmental, social, and governance aspects, including workplace safety, workers' rights, community engagement, and supply chain integrity (Chang & Lee, 2022; Rosnizam et al., 2020; Sætra, 2021). The integration of environmentally friendly technology and the use of renewable energy have been proven to reduce long-term costs and improve a company's image (Pan et al., 2020; Zhou et al., 2023).

Supply chain globalization is driving customers and business partners to choose companies with ESG commitments. Assessments include CO_2 emissions, workplace safety audits, and governance transparency. This study examines the influence of ESG Score on logistics financial performance with leverage as a control variable, considering that ESG affects efficiency, market trust, and competitive advantage(Bifulco et al., 2023; Han & Gao, 2024) . Previous studies have shown mixed results regarding the relationship between ESG and financial performance (Almeyda & Darmansyah, 2019; Antonius & Ida, 2023; Giannopoulos et al., 2022; Littahayu & Sulistiyoningsih, 2023; Lubis & Rokhim, 2021; Ramadhan et al., 2024; Shakil et al., 2019; Wan Mohammad & Wasiuzzaman, 2021).

This research is relevant to policy because it is in line with the OJK's Roadmap for Sustainable Finance, which encourages the integration of ESG into the annual reports of public companies. The results are expected to provide empirical evidence to encourage policies that balance sustainability and profitability. This study focuses on logistics companies categorized under KLBI 2020 H – Transportation and Warehousing, including freight transportation services, shipping, courier services, freight forwarding, warehousing, and freight forwarding (Chen et al., 2024) . The initial hypothesis states that the higher the ESG score, the better the financial performance as long as the company manages its capital structure healthily (Caniato et al., 2016; Ivashchenko, 2019; Ramadhani, 2019; Wei, 2019; Zhang & Lam, 2018).

LITERATURE REVIEW

Stakeholder Theory

Stakeholder theory emphasizes that the long-term success of a company depends heavily on the satisfaction of various stakeholders—not only shareholders but also employees, customers, communities, and the environment (Ud-Din et al., 2020). In the ESG context, companies are required to manage the social and environmental impacts of their operations in alignment with broader stakeholder expectations. This theory explains why firms with stronger ESG commitments tend to enjoy better public image and trust, which ultimately enhances their financial performance (Bourne, 2011; Maulana & Haryadi, 2022).

Legitimacy Theory

Legitimacy theory states that a company strives to ensure that its activities and existence are considered "valid" by society through the implementation of values that are socially accepted (Ceniga & Sukalova, 2015). ESG practices have emerged as an essential mechanism for achieving both social and institutional legitimacy, particularly in industries with substantial environmental footprints such as logistics. Firms that consistently implement ESG principles are perceived as more socially responsible and are better positioned to sustain their operations and legitimacy over the long term.

Agency Theory

According to Agency Theory, the founders of a company (principals) entrust business operations to managers as agents. Information asymmetry and conflicts of interest between them can lead to actions that are not beneficial for the company. ESG, particularly the governance aspect, helps to reduce information asymmetry and increase transparency, thereby lowering the risk of agency costs (Aigbogun et al., 2016). From an agency perspective, excessive governance and ESG spending may increase agency costs if managers pursue sustainability initiatives for personal reputation or legitimacy rather than shareholder value maximization. Friedman's shareholder primacy view emphasizes that firms should focus on profit maximization within legal boundaries, implying that excessive governance spending may reduce shareholder wealth.

ESG Score as Independent Variable

The ESG Score is a composite measure used to evaluate a company's performance across three sustainability dimensions:

a. *Environmental* (E): encompasses waste management, carbon emissions, energy efficiency, resource utilization, and climate change risks.
b. *Social* (S): includes human rights, corporate social responsibility, working conditions, worker safety, and relationships with society..
c. *Governance* (G): includes board structure, stakeholder rights, internal audits, corporate ethics, and transparency.

Each ESG pillar is typically assessed using both quantitative and qualitative indicators. Rating agencies such as MSCI and Sustainalytics provide ESG scores that are relatively based on the following formula:

$$\text{ESG Score} = \frac{w_E \cdot E + w_S \cdot S + w_G \cdot G}{w_E + w_S + w_G}$$

With:

- E=E =E= Environmental pillar score
- S=S =S= Social pillar score
- G=G =G= Governance pillar score
- wE,wS,wG=w_E, w_S, w_G =wE, wS, wG= weight of each pillar, depending on the assessment institution's methodology.

For example, Sustainalytics uses a scale of 0-100, with risk categories: Negligible (<10), Low (10–20), Medium (20–30), High (30–40), and Severe (>40) (Sustainalytics, 2023).

ESG Score is considered a representation of non-financial performance that reflects a company's sustainability. ESG can be directly connected to a company if its ESG focus aligns with the industry in which it operates. In the context of logistics, environmental and social issues are particularly critical because this sector is closely related to distribution activities, fuel consumption, and workplace safety. Thus, ESG is not merely a compliance tool but also a business strategy.

The **ESG overinvestment theory** suggests that excessive investments in governance and sustainability initiatives beyond optimal levels may destroy shareholder value. While ESG initiatives can enhance legitimacy and reputation, overinvestment may divert resources from productive investments and reduce financial performance.

Financial Performance as a Dependent Variable

This theory leads to the principle that companies inherently aim to create value for shareholders through increased profitability and operational efficiency. Within the ESG

framework, the sustainability dimension is not merely an additional burden but can also serve as a long-term profitable investment. For example, energy efficiency and waste reduction can lower operational costs, while a good reputation increases consumer loyalty. Financial performance in this research is measured using financial ratios such as profitability and efficiency indicators, among others.

Return on Assets (ROA)

$$ROA = \frac{\text{Net Income}}{\text{Total Assets}} \times 100\%$$

Net Profit Margin (NPM)

$$NPM = \frac{\text{Net Profit}}{\text{Revenue}} \times 100\%$$

Return on Equity (ROE)

$$ROE = \frac{\text{Net Income}}{\text{Equity}} \times 100\%$$

These ratios become the indicator of company efficiencies on asset and capital management to create profit (Brigham & Houston, 2019).

Leverage as Control Variable

Leverage reflects the capital structure and indicates the extent to which a company depends on debt. In the context of Agency Theory, leverage can serve as a disciplinary tool for managers, as the burden of interest payments drives efficiency in financial management. (Jensen, 1986). However, excessively high leverage may also increase the risk of bankruptcy. Therefore, in this research, leverage is used as a control variable to examine whether the relationship between ESG and financial performance remains significant after considering the impact of company debt. Leverage is measured using the debt-to-equity ratio to evaluate the extent to which a company relies on debt financing.(Savio & Leman, 2021)

$$DER = \frac{\text{Total Liabilities}}{\text{Total Equity}}$$

The level of leverage impacts management policies in allocating resources for ESG activities. Companies with higher leverage tend to be more cautious in spending funds on sustainability initiatives. (Ferrell et al., 2016).

Several previous studies have used governance variables obtained from publicly listed companies' annual reports and analyzed them using quantitative methods. For instance, research by Hermawan, Maulana, and Nurfadilah (2020) employed indicators such as audit committee composition, the proportion of independent shareholders, and managerial ownership to evaluate their impact on company performance. Their findings indicate that companies with better governance structures—characterized by greater transparency and independence—tend to exhibit higher ROE and ROA..(Aydoğmuş et al., 2022; Bressolles et al., 2015)

Meanwhile, in Indonesia, the Financial Services Authority (OJK) has made the implementation of good governance principles obligatory through various regulations, including POJK No. 21/POJK.04/2015 concerning the Implementation of Governance for Issuers or Public Companies. Besides that, the existence of sustainability reports compiled by the GRI Standards becomes the main source of the ESG Score database, especially in the governance aspect. Therefore, the annual report and sustainability report become the main basis for collecting secondary data for ESG measurement purposes in this research.(Cavite & Abamo, 2017; Lambert et al., 2021; Ubwarin et al., 2021).

Governance

Governance dimension in ESG specifically relates to the system of Good Corporate Governance (GCG), such as the structure of the board of directors, transparency of financial reports, the rights of shareholders, and the internal surveillance system. Effective company governance could help minimize agency risks, increase the efficiency of decision-making, and create investor trust. In the context of logistics companies, which usually manage

supply chains and fixed assets on a large scale, a strong governance system is very crucial to ensure adequate management control and compliance with regulations.

Governance indicators mainly used in ESG evaluation include the existence of an independent audit committee, the proportion of independent directors on the board, transparency of remuneration, internal audit, risk reporting systems, and protection of minority rights. Besides that, governance assessments also consider compliance with codes of ethics and the existence of anti-bribery and anti-corruption mechanisms. The related data are generally available in the annual report or sustainability report published by the company each year. (Kundori & Pranyoto, 2023; Priadi et al., 2022; Sitorus & Sitorus, 2017) Standard reference codes typically used by ESG assessment agencies include:

a. GCG Disclosure (such as: shareholders' structure, board of commissioners, audit committee)
b. GRI Standard 2: Governance – based on *Global Reporting Initiative* guidelines
c. OJK SEOJK No. 16/SEOJK.04/2021 – Standard content of Annual Report
d. GCG code of ethics based on the KNKG Decision
e. POJK No. 51/POJK.03/2017 – on the implementation of Sustainable Finance

For this research, governance data can be collected from several codes in the *annual report*, including:

Table 2.1 Governance Table

Governance Item	Code or Section in Annual Report	Source/Reference
Board of Directors and Commissioners Structure	"Board of Commissioners Profile" / "Board of Commissioners"	Annual Report – GCG Section
Audit Committee	"Audit Committee Report" / "Audit Committee Report"	Annual Report – Corporate Governance
Proportion of Independent Directors	"Board Composition" / "Board Composition"	Annual Report – GCG Chapter
Risk Management System	"Corporate Risk Management" / "Risk Management"	Annual Report – Risk Management
Internal Audit System	"Internal Audit Unit" / "Internal Supervision Unit (SPI)"	Annual Report – GCG
Code of Ethics and Compliance	"Code of Ethics & Compliance" / "Code of Conduct & Compliance"	Annual Report – GCG & Sustainability

Processed by the researchers

Governance assessment within the ESG Score is generally evaluated based on the presence, completeness, and effectiveness of the related governance aspects. The higher the quality of corporate governance, the higher the Governance Score within ESG, and consequently, the greater its potential positive influence on financial performance.(Nugroho & Hersugondo Hersugondo, 2022).

Hypothesis Development

The Effect of Environment on ROA

The Environmental (E) dimension describes the extent to which a company manages its environmental impact within operational activities. The study by (Lin et al., 2022) indicates that efficient management of energy, waste, and emissions contributes to improving Return on Assets (ROA). Similarly, the findings of Pham et al, (2022) and Marek, (2025) reinforce this result by emphasizing that sustainable environmental practices reduce operational costs and enhance the efficiency of asset utilization. Therefore, the following hypothesis is proposed: H1: There is an Environmental influence on ROA.

The Effect of Social on ROA

The Social (S) aspect encompasses social responsibility, occupational safety, employee welfare, and community relations. The study by Glova et al, (2025) finds that the social pillar positively affects ROA by improving employee loyalty and productivity. Likewise, Coelho et al. (2023) Demonstrate that social responsibility initiatives strengthen corporate reputation and support long-term sustainability. Based on these findings, the second hypothesis is formulated as follows: H2: There is a Social influence on ROA.

The Effect of Governance on ROA

The Governance (G) dimension reflects the governance system that regulates the relationships among shareholders, the board of directors, and management. Govindan et al. (2023) show that a well-structured board enhances monitoring effectiveness and asset utilization efficiency, which in turn increases ROA. Moreover, Özer et al. (2024) emphasize that strong governance practices improve the quality of financial reporting, thereby increasing stakeholder trust. Thus, the third hypothesis is proposed as follows: H3: There is a Governance influence on ROA.

The Effect of Environment on ROE

Return on Equity (ROE) reflects a company's ability to generate profits for its shareholders. The studies by Chau et al. (2025) and Pitsi, (2024) indicate that good environmental practices positively affect ROE through enhanced corporate reputation and investor confidence. Therefore, companies committed to environmental sustainability have the potential to improve returns on equity. The fourth hypothesis is formulated as follows: H4: There is an Environmental influence on ROE.

The Effect of Social on ROE

The social dimension affects not only operational efficiency but also the equity value of a company. Yu et al. (2022) and Coelho et al. (2023) find that social activities strengthen relationships with customers and communities, thereby increasing trust and firm value in the capital market. Accordingly, the fifth hypothesis is developed as follows:H5: There is a Social influence on ROE.

The Effect of Governance on ROE

The Governance aspect plays an essential role in improving equity-based profitability by reducing agency conflicts and enhancing transparency. Studies by Govindan et al. (2023) and Yu et al. (2022) reveal that effective corporate governance increases firm value and profit stability, which is reflected in higher ROE. Therefore, the sixth hypothesis is formulated as follows:

H6: There is a Governance Score influence on ROE.

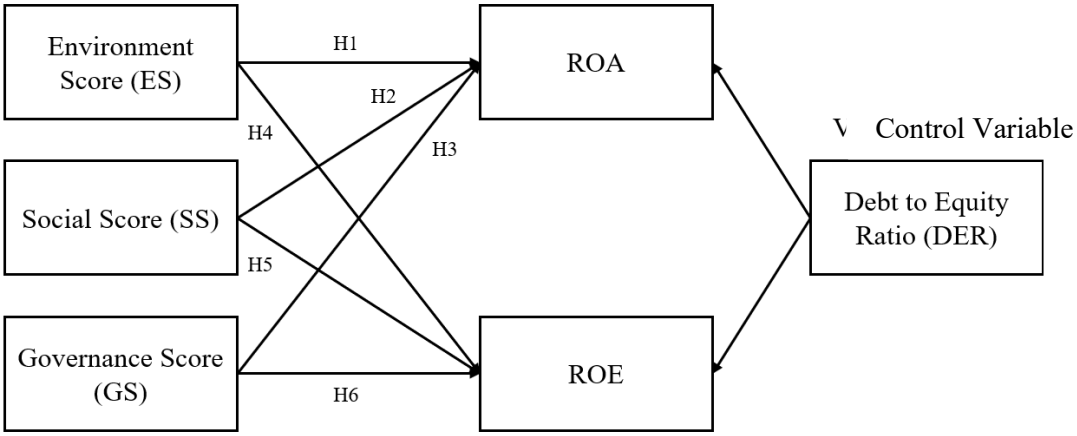

Figure 3: Framework

RESEARCH METHODS

This research was conducted online using secondary data obtained from the Indonesia Stock Exchange (IDX), official company websites, and ESG data providers such as Refinitiv and Bloomberg. Data collection and processing were conducted from January to July 2025, with the observation period covering the years 2019–2023. This period was selected based on the availability and completeness of representative ESG data for logistics and transportation companies in Indonesia.

This study uses an associative quantitative approach to analyze the influence of Environmental, Social, and Governance (ESG) scores on the financial performance (ROA and ROE) of logistics companies in Indonesia, with the Debt to Equity Ratio (DER) as a control variable(Sugiyono, 2015).

The research population includes all logistics and transportation companies in the KBLI H category – Transportation and Warehousing operating in Indonesia. The sample was obtained using purposive sampling with the following criteria: (1) having complete annual financial reports and ESG/sustainability reports for the 2019–2023 period; (2) ESG data accessible through Refinitiv/Bloomberg; and (3) not originating from the financial sector. Based on these criteria, 44 companies were selected as the sample, comprising 31 national companies and 13 multinational companies.

The data used were secondary data obtained from annual reports, sustainability reports, and the Refinitiv and Bloomberg ESG databases. Financial data (ROA, ROE, DER) and ESG data were collected using documentation techniques, then processed using Microsoft Excel before being analyzed with SmartPLS.

Dependent variables: ROA (net income ÷ total assets) and ROE (net income ÷ equity). Independent variables: Environment Score, Social Score, Governance Score. Control variable: DER (total debt ÷ equity). All variables are measured on a ratio scale using data from financial statements and ESG databases.

Data analysis was conducted in two stages: (1) descriptive analysis to describe the characteristics of the data; and (2) inferential analysis using Partial Least Squares–Structural Equation Modeling (PLS-SEM) to test the influence of ESG on financial performance with DER as the control variable. The analysis was conducted using SmartPLS software, as well as multigroup analysis (MGA) to compare differences between national and multinational companies. This study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) because Environmental, Social, and Governance (ESG) performance is conceptualized as a multidimensional latent construct rather than a single observed variable. Each ESG dimension (Environmental, Social, and Governance) represents an abstract sustainability performance domain that cannot be directly observed but is reflected through composite indicators and ratings derived from ESG databases. PLS-SEM is particularly suitable for modeling complex relationships among latent constructs and financial performance indicators, especially when the research objective is predictive and explanatory in nature. Furthermore, PLS-SEM is robust to small sample sizes and non-normal data distributions, making it appropriate for the logistics sector dataset in this study.

RESULTS

Descriptive Statistics

Descriptive statistics are used to describe the distribution of research variable values. Table 1 presents the mean, maximum, minimum, and standard deviation values for each variable.

Table 1. Descriptive Analysis

Variable	Mean	Scale min	Scale max	Standard deviation
ES	40.575	10	88	24.156
SS	41.759	10	87	25.213
GC	42.976	12	90	25.782
ROA	0.045	-0.58	0.454	0.117
ROE	0.126	-0.425	1.275	0.224

Based on Table 1, the mean environmental score (ES) of 40.575 indicates a moderate level of concern for environmental issues. The relatively large standard deviation indicates high variation among companies, meaning that there are companies with very low to very high environmental scores. The mean social score (SS) of 41.759 is slightly higher than the environmental score (ES). This indicates that companies are relatively attentive to social aspects. However, the high standard deviation (25.213) shows diversity in the level of social responsibility implementation among companies. The governance score dimension has the highest mean score (42.976) compared to the environmental score and social score, indicating that most companies are more advanced in the implementation of governance principles. However, with the largest standard deviation (25,782), there are significant differences in governance implementation between companies.

The average return on assets of 4.5% is relatively low but still positive. The minimum negative value (-58%) indicates that some companies have incurred losses in the utilization of their assets. Moderate variability (SD = 0.117) indicates fairly high fluctuations in asset performance between companies. The average ROE of 12.6% indicates a reasonable return on equity. The presence of a negative minimum value (-42.5%) indicates that some companies are unable to provide returns to shareholders. The high standard deviation (0.224) reflects significant variations in financial performance among companies. Based on the results of the descriptive analysis, all five variables exhibit high levels of variation, meaning that the companies in the sample have highly diverse ESG characteristics and financial performance. This presents a good opportunity to explore the relationships between ESG variables and ROA and ROE.

Hypothesis Testing in Company Mergers

Table 2. Hypothesis Testing on Combined Data (N = 212)

Path	STD	STDEV	T value	P values	R^2	F^2
Environment Score→ROA	2.497	1.075	2.324	0.020	0.100	0.030
Social Score→ROA	-1.162	1.439	0.808	0.419		0.003
Governance Score→ROA	-1.159	0.879	1.319	0.187		0.006
Environment Score→ROE	-0.228	1.172	0.195	0.845	0.105	0.000
Social Score -> ROE	3.950	1.719	2.299	0.022		0.037
Governance Score→ROE	-3.479	1.137	3.060	0.002		0.050

Based on Table 2, the environment score has a positive and significant effect on ROA ($\beta = 2.497$, $p = 0.020 < 0.05$) with a small effect size ($f^2 = 0.030 > 0.02$) and a contribution to ROA variance of 10%. This finding indicates that, in aggregate, a company's environment score contributes to increased asset efficiency, thus supporting H1. Conversely, governance score and social score do not have a significant effect on ROA ($p > 0.05$) with very small f^2 values ($f^2 = 0.006$ and $0.003 < 0.02$), thus rejecting H2 and H3.

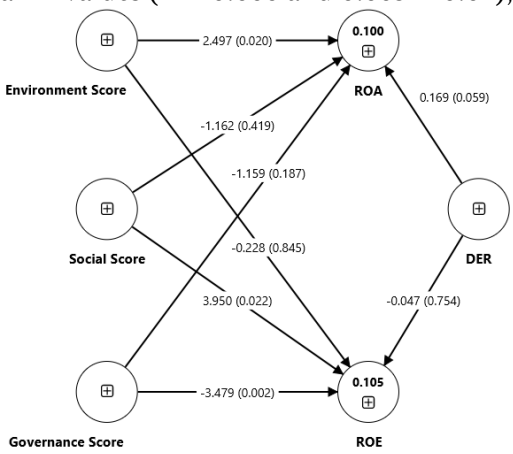

Figure 1. Structural Model of Corporate Financial Performance (Combined Data)

In the test for ROE, the governance score shows a negative and significant effect ($\beta = -3.479$, $p = 0.002 < 0.05$, $f^2 = 0.050 > 0.02$). This indicates that an increase in governance score is correlated with a decrease in ROE, possibly due to compliance costs or internal

control mechanisms that reduce operational flexibility, so H6 is accepted. Meanwhile, the social score has a positive and significant effect on ROE (β = 3.950, p = 0.022 < 0.05, f² = 0.037 > 0.02), indicating that social initiatives can strengthen stakeholder trust and ultimately increase equity returns, thus accepting H5. The environment score does not have a significant effect on ROE, so H4 is rejected. Overall, environmental, social, and governance scores contribute 10.5% to the variance in ROE.

Analysis of National Companies

Table 3. Analysis of National Companies (N=152)

Path	STD	STDEV	T value	P values	R^2	F^2
Environment Score→ROA	1.201	1.542	0.779	0.436	0.068	0.007
Social Score→ROA	-0.698	1.759	0.397	0.692		0.001
Governance Score→ROA	-0.422	1.082	0.390	0.696		0.001
Environment Score→ROE	-0.532	1.360	0.391	0.696	0.057	0.001
Social Score -> ROE	1.885	1.571	1.199	0.230		0.008
Governance Score→ROE	-1.276	1.011	1.262	0.207		0.007

Based on Table 3, the environment, social, and governance score dimensions did not show a significant effect on either ROA or ROE (p > 0.05), with very small f² and R2 values. This reflects the low integration of environment, social, and governance scores into the managerial practices of national com panies or the suboptimal implementation of environment, social, and governance scores in creating financial value.

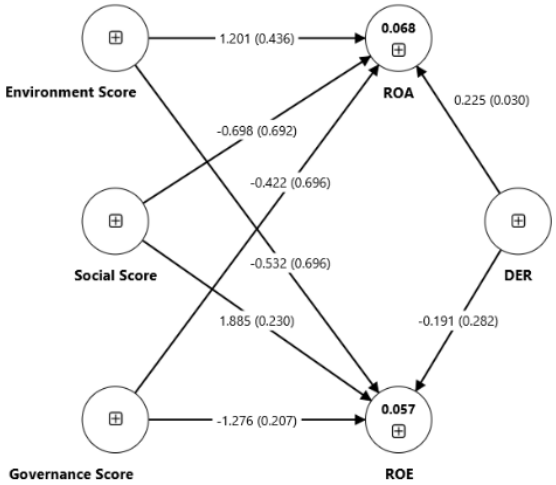

Figure 2. Structural Model of National Company Financial Performance

Analysis of Multinational Companies

Table 4. Analysis of Multinational Companies (N=60)

Path	STD	STDEV	T value	P values	R^2	F^2
Environment Score→ROA	0.409	0.422	0.971	0.331	0.162	0.014
Social Score→ROA	0.293	0.562	0.522	0.602		0.006
Governance Score→ROA	-0.353	0.344	1.025	0.305		0.018
Environment Score→ROE	0.017	0.439	0.039	0.969	0.379	0.000
Social Score -> ROE	1.123	0.567	1.979	0.048		0.124
Governance Score→ROE	-0.758	0.306	2.476	0.013		0.110

Based on Table 4, the environment score does not have a significant effect on ROE (β = 0.017, p = 0.969 > 0.05, f² = 0.000 < 0.02). Furthermore, the governance score shows a significant negative effect on ROE (β = -0.758, p = 0.013 < 0.05, f² = 0.110 > 0.02). This finding is consistent with the results of the analysis on the combined data. This indicates a trade-off between strengthening the governance score and financial efficiency in multinational companies. The social score has a positive and significant effect on ROE (β = 1.123, p = 0.048 < 0.05, f² = 0.124 > 0.02). This finding confirms that the social score adds value to multinational companies. Overall, the environmental, social, and governance scores contribute 37.9% to ROE.

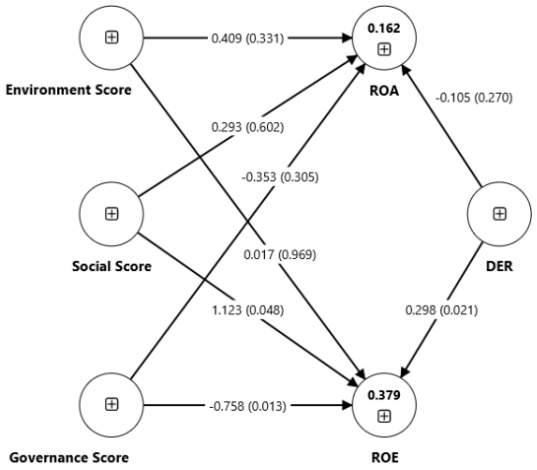

Figure 3. Structural Model of Multinational Company Financial Performance

All paths leading to ROA (environmental, social, and governance scores as well as DER) did not show a significant effect ($p > 0.05$). These results indicate that environmental, social, and governance scores do not impact asset efficiency in multinational companies.

Multigroup Analysis

This study also analyzed the differences in the effects of environmental score, social score, and governance score on financial performance (ROA and ROE) using the Multigroup Analysis (MGA) approach to enrich the research findings and strengthen the hypothesis testing. The analysis can be seen in Table 5.

Table 5. Multigroup Analysis

Path	STD		STDEV		p value		Decision
	2	1	2	1	2	1	
Environment Score→ROA	0.409	1.201	0.422	1.542	0.331	0.436	No/No
Social Score→ROA	0.293	-0.698	0.562	1.759	0.602	0.692	No/No
Governance Score→ROA	-0.353	-0.422	0.344	1.082	0.305	0.696	No/No
Environment Score→ROE	0.017	-0.532	0.439	1.360	0.969	0.696	No/No
Social Score→ROE	1.123	1.885	0.567	1.571	0.048	0.230	Yes/No
Governance Score→ROE	-0.758	-1.276	0.306	1.011	0.013	0.207	Yes/No

Description: 2 (multinational companies); 1 (national company)

The analysis results indicate that the environmental score does not have a significant effect on ROA for multinational companies ($\beta = 0.409$, $p = 0.331 > 0.05$) or national companies ($\beta = 1.201$, $p = 0.436 > 0.05$). This finding indicates that the environment score does not contribute differently to asset profitability in both groups of companies. Furthermore, governance score also does not significantly affect ROA, either in the multinational company group ($\beta = -0.353$, $p = 0.305 > 0.05$) or the national company group ($\beta = -0.422$, $p = 0.696 > 0.05$). This suggests that the governance score does not have a different impact on improving asset utilization efficiency in both groups.

Similarly, the social score does not have a significant effect on ROA in both types of companies (multinational: $\beta = 0.293$, $p = 0.602 > 0.05$; national: $\beta = -0.698$, $p = 0.692 > 0.05$). Although the direction of the effect is different, the difference is not strong enough to be considered significant. These results indicate that social score does not have a different influence in explaining asset profitability in multinational or national companies.

The results of the analysis show that the environment score does not have a significant effect on ROE in both groups of companies, both multinational ($\beta = 0.017$, $p = 0.969 > 0.05$) and national ($\beta = -0.532$, $p = 0.696 > 0.05$). This finding indicates that the environment score does not contribute differently to the return on equity in both groups of companies. In contrast, the governance score has a significant negative effect on ROE in multinational companies ($\beta = -0.758$, $p = 0.013 < 0.05$), but not in national companies ($\beta = -1.276$, $p = 0.207 > 0.05$). These results indicate a difference in the influence of

governance scores on the two groups of companies. In multinational companies, an increase in governance scores is correlated with a decrease in ROE, which is likely due to high compliance costs or managerial complexity.

Meanwhile, the social score has a significant positive effect on ROE in multinational companies ($\beta = 1.123$, $p = 0.048 < 0.05$), but not in national companies ($\beta = 1.885$, $p = 0.230 > 0.05$). These findings indicate differences between the two groups of companies, where social initiatives in multinational companies have a more significant positive impact on equity returns. Overall, the results of the Multigroup Analysis (MGA) show differences in the influence of environmental scores, social scores, and governance scores on financial performance between national and multinational companies. These differences are particularly evident in the influence of social score and governance score on ROE, where multinational companies show a more significant influence compared to national companies (Abdul Rahman & Alsayegh, 2021; Sharma et al., 2022; Singhania & Saini, 2022).

Policy Recommendations

1. The government needs to strengthen ESG reporting regulations for the logistics and transportation sector.
2. Industry associations can develop standardized green logistics guidelines.
3. Companies are encouraged to prioritize SDGs that are directly related to transportation and distribution.

Regression test results show that the Environmental Score has a positive and significant effect on ROA. This indicates that companies that actively implement environmental sustainability strategies—such as energy efficiency, emissions reduction, and the use of clean technology—tend to have higher operational efficiency. This efficiency is reflected in an increase in the profit-to-total-assets ratio. In the logistics and transportation sector, this makes sense because fuel savings, route optimization, and the use of renewable energy directly reduce a company's operational costs.

Meanwhile, the Social Score also has a positive impact on ROE. This means that companies that prioritize social aspects such as workplace safety, employee well-being, and good relations with the local community can enhance stakeholder trust. As a result, financial performance in terms of return on equity improves. This aligns with stakeholder theory, which posits that strong social engagement strengthens reputation, customer loyalty, and supports business sustainability.

Conversely, Governance Score has a negative impact on ROE. This finding suggests that overly rigid or complex governance can increase administrative burdens and slow decision-making. In the context of logistics and transportation companies that must be responsive and adaptive to market changes, overly bureaucratic governance can reduce business agility and ultimately lower profit efficiency for shareholders. According to compliance cost theory, the implementation of corporate governance and ESG compliance requires substantial administrative, monitoring, and reporting costs. These costs may reduce short-term profitability and shareholder returns, particularly in capital-intensive industries where operational efficiency is critical.

The over-governance hypothesis suggests that excessive governance mechanisms may reduce managerial flexibility and increase bureaucratic constraints, which can negatively affect firm performance. In highly dynamic industries such as logistics and transportation, overly rigid governance structures may slow strategic decision-making and operational responsiveness, thereby reducing profitability and shareholder returns.

Overall, these results confirm that the environmental and social aspects of ESG have a real impact on financial performance in the logistics and transportation sector, while governance aspects need to be designed proportionally so as not to become a burden on operational efficiency.

CONCLUSION

This study is motivated by the increasing urgency of applying sustainability principles (ESG: Environmental, Social, Governance) in the logistics and transportation sector, which is a strategic and emission-intensive sector in the national economic structure. Although ESG has become an important indicator in assessing business sustainability globally, empirical studies examining its impact on the financial performance of companies in this sector, particularly in Indonesia, remain limited.

Therefore, this study is designed to evaluate the extent to which the application of ESG principles contributes to the financial performance of logistics and transportation companies, with a focus on the indicators of Return on Assets (ROA) and Return on Equity (ROE). This study uses a quantitative approach on 44 national and multinational companies classified under the KBLI H category (Transportation and Warehousing), which have publicly available sustainability reports and financial statements during the observation period.

The Structural Equation Modelling (SEM) method was used in this study to test the simultaneous relationship between the three ESG dimensions (Environmental, Social, Governance) and company financial performance, with leverage included as a control variable in the structural model. This approach was used to identify the extent to which each ESG dimension influences asset efficiency and shareholder value separately but interrelatedly. From the data analysis conducted, the following findings were obtained:

1. The first finding shows that the Environmental (E) dimension has a positive and significant influence on Return on Assets (ROA). This means that companies that implement environmentally friendly practices such as fuel efficiency, emissions reduction, and distribution optimization through technology tend to have more efficient asset management. This indicates that investing in environmental aspects is not only a moral responsibility but also a strategic decision that directly impacts profitability through cost efficiency and increased productivity.
2. The second finding shows that the Social (S) dimension has a positive effect on Return on Equity (ROE). Companies that prioritize workplace safety, employee well-being, and maintain good social relationships with communities and service users tend to build long-term trust. This trust not only impacts customer loyalty but also enhances the company's image and stability in the eyes of investors. This underscores that a human-centred and socially relational sustainability approach is a strategic asset that contributes to value creation for shareholders.
3. Conversely, the Governance (G) dimension was found to have a negative impact on ROE. This indicates challenges in corporate governance practices, where overly bureaucratic or rigid implementation of GCG can hinder responsiveness and decision-making effectiveness in the highly dynamic logistics and transportation sector. Strengthening governance should not only be procedural but also adaptive to operational efficiency and innovation needs.
4. Meanwhile, the leverage control variable did not show a significant effect on ROA or ROE, indicating that capital structure is not the sole determinant of financial performance in the ESG context. This suggests that integrating sustainability aspects is more important than a purely financial approach.

Conceptually, this study reinforces the relevance of stakeholder theory and legitimacy theory. Transportation and logistics companies are not only profit-oriented but are also required to account for their social and environmental impacts. Companies that can manage ESG issues comprehensively and strategically have proven to have better and more stable financial performance.

Practically, the findings of this study provide recommendations for company management not to separate sustainability aspects from core business strategies. ESG should be viewed as a long-term investment, not a burden. For governments and regulators, these findings provide a basis for promoting policies that strengthen ESG reporting and implementation in logistics and transportation. For investors, ESG can

serve as an additional indicator in making more responsible and sustainable investment decisions.

This research also opens the door for further studies, whether by expanding the sector, extending the observation period, or using qualitative approaches to explore the dynamics of ESG implementation in the field more deeply.

Acknowledgement

The authors would like to express their sincere gratitude to the Institut Transportasi dan Logistik Trisakti for its continuous support throughout this research. Special appreciation is extended to the faculty members and colleagues who provided valuable insights, feedback, and access to research data related to sustainability and logistics performance.

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