Strategic Governance for Sustainable Performance: ESG Impacts of Board and Financial Structures in International Logistics

Mert Demir, Department of International Trade and Logistics
Balıkesir University, Balıkesir, Türkiye
Bahaudin G. Mujtaba,[1] College of Business and Entrepreneurship,
Nova Southeastern University, USA
Pelin Vardarlier, Department of Business Administration
Balıkesir University, Balıkesir, Türkiye

Abstract: This study examines how board structures and financial factors relate to sustainability performance within international logistics. Focusing on the "Freight and Logistics Services" sub-sector, we compile annual data for 62 firms from 19 countries over 2016–2023 drawn from Refinitiv Eikon. Sustainability performance is operationalized by the standardized composite ESG (environmental, social, and governance) score (0–100), which enables cross country comparability in a disclosure-based setting. We estimate firm fixed effects models with year fixed effects and, for comparison, random effects and pooled ordinary least squares (OLS) specifications. Results show that board independence and the presence of a board level corporate social responsibility (CSR) committee are positively associated with ESG performance, while CEO duality is negatively associated consistent with the view that role consolidation weakens stakeholder-oriented oversight. Evidence on board gender diversity is specification sensitive: it is positive in pooled OLS but loses statistical significance when firm heterogeneity is modeled. Turning to profitability or return on assets (ROA), CEO duality is negatively related to ROA, whereas gender diversity is positively related; in contrast, independence and CSR committee do not display direct effects on ROA, suggesting possible indirect channels via ESG. Financial covariates such as firm size and profitability are positively associated with ESG scores, and leverage reduces ROA as expected. By providing sub-sector specific evidence with a standardized ESG measure, the study informs governance reforms in logistics—prioritizing CEO–chair separation, institutionalizing CSR committees, and cultivating gender diverse boards—to strengthen sustainability outcomes and long run value creation.

Keywords: Corporate Governance; ESG Performance; Logistics Industry; Board Structure.

Introduction

The acceleration of globalization and the successive waves of financial crises, corporate scandals, and large-scale bankruptcies since the 1990s have underscored the imperative for firms to safeguard their long-term sustainability (Demir et al., 2025; Aktan, 2013; İşcan & Kaygın, 2009). These developments have elevated the strategic importance of corporate governance at the global level of leadership, compelling organizations to reconfigure their governance frameworks, decision-making processes, and operational strategies (Al-Kazemi et al., 2025; Zeeshan et al., 2025; Mujtaba, 1997). Corporate governance is defined as a system of principles—encompassing the board of directors, shareholders, and other stakeholders—that underpins long-term value creation, transparency, and accountability (OECD, 2016; TÜSİAD, 2002).

The rise of the sustainability concept has further amplified the importance of governance principles for public sector organizations as well as corporations (Mujtaba et al., 2011). Firms are now expected to manage not only economic performance but also environmental and social responsibilities with equal rigor to create and maintain civility in society (Demir et al., 2025). Principles such as transparency, accountability, fairness, and responsibility play a pivotal role in achieving corporate sustainability objectives (SPK, 2014; Pamukçu, 2011).

The logistics sector, due to its central role in global supply chains, faces particularly acute external pressures regarding sustainability and crisis management (Ly and Mujtaba, 2025; Vardarlıer

[1] Corresponding Author: Bahaudin G. Mujtaba
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& Zafer, 2020). Its operations are directly linked to fossil fuel consumption, greenhouse gas emissions, and natural resource utilization, rendering it a critical focus for environmental and social impact analyses (Karaman et al., 2020; Kuzey et al., 2022). Consequently, sustainable logistics practices have evolved from being a strategic choice to an operational necessity (Özdemir, 2019; Rogers & Tibben-Lembke, 2001). Green logistics strategies—such as optimizing resource usage, implementing waste management protocols, enhancing energy efficiency, and adopting eco-friendly technologies—significantly reduce the sector's environmental footprint and contribute to broader sustainable development goals (Büyükkeklik & Senir, 2017).

However, the logistics sector is not homogeneous in terms of operational processes, stakeholder expectations, and environmental impacts. The distinct characteristics of its sub-sectors limit the generalizability of broad sector-wide analyses. This heterogeneity calls for context-specific empirical research that addresses the unique dynamics of individual sub-sectors. This study addresses this gap by focusing on the "Freight and Logistics Services" sub-sector. Its primary objective is to evaluate how corporate governance structures influence sustainability performance within this context using comprehensive panel data analysis. Specifically, we examine the effects of board independence, gender diversity, the existence of a Corporate Social Responsibility (CSR) committee, and CEO duality on ESG outcomes, while controlling for firm size, financial leverage, return on assets (ROA), free float, and board size.

The dataset comprises annual information for 62 international logistics firms from 19 countries over the period 2016–2023, sourced from the Refinitiv Eikon database (formerly Thomson Reuters Eikon). ESG performance is measured using Refinitiv's continuous 0–100 composite ESG score. By providing an understanding of governance–sustainability linkages at the sub sector level, this research offers novel insights for policymakers, industry leaders, and investors seeking to implement targeted strategies that foster long term sustainable growth in the logistics industry.

The contemporary business landscape has seen the logistics and transportation sector re-evaluate its corporate social responsibility and sustainability practices in response to heightened public scrutiny and regulatory mandates (Govindan et al., 2016). The literature on corporate governance and sustainability broadly encompasses three thematic areas: (1) governance dynamics shaping sustainability performance; (2) drivers and motivations underpinning sustainability reporting; and (3) the impact of sustainability initiatives on firm reputation and financial outcomes.

Research in this governance dynamics and sustainability performance domain investigates how internal governance mechanisms, particularly board composition and specialized committees, influence ESG outcomes (U-tantada et al., 2025; Fernandes et al., 2005). International studies within the logistics sector demonstrate that gender diversity on boards positively correlates with ESG performance. Govindan et al. (2021), examining 100 global logistics firms, found that female directors significantly enhance overall ESG outcomes. Kuzey et al. (2022) further show that gender diversity fosters eco-innovation, resource efficiency, and emission reduction. CSR committees also emerge as pivotal, with characteristics such as independence, absence of the CEO, or female leadership amplifying their positive effect (Eberhardt-Toth, 2017). Gündoğdu et al. (2023), using a multi-criteria decision-making framework, highlight the role of governance structures in promoting eco-efficiency strategies that mitigate environmental risks.

Sustainability reporting drivers and motivations' theme explores factors motivating transparent sustainability disclosures (Ly and Mujtaba, 2025). High-performing logistics firms leverage robust ESG reporting as a signaling mechanism rather than greenwashing (Uyar et al., 2020). Karaman et al. (2020) identify a positive association between the Logistics Performance Index (LPI) and sustainability reporting, particularly in lower-governance contexts, where reporting substitutes for weaker oversight. In emerging markets, board attributes and audit committee effectiveness positively influence disclosure quality (Erin et al., 2022). Contrastingly, Shamil et al. (2014) document in Sri Lanka that larger boards and CEO-chair separation increase reporting likelihood, whereas female director presence unexpectedly reduces it. Sierra-García et al. (2015) confirm that assurance of sustainability reports boosts integrated reporting adoption, while Garcia-Sanchez et al. (2021) note that powerful CEOs may hinder such practices. Pratama et al. (2025) reveal that when sustainability committees are dominated by managerial members, they may inadvertently facilitate greenwashing.

Sustainability initiatives and corporate outcomes theme examines the tangible impacts of sustainability practices on firm outcomes (Bui and Mujtaba, 2025; Ly and Mujtaba, 2025). In logistics, short-term financial returns may lag, but long-term benefits are evident (Govindan et al.,

2021). De Lucia et al. (2020), focusing on European public enterprises, document significant positive correlations between ESG scores and financial metrics (i.e. ROA, ROE). Assurance-supported disclosures also strengthen corporate reputation and stakeholder trust (Odriozola & Baraibar-Diez, 2017; Sierra-García et al., 2015). However, Garcia-Sanchez et al. (2021) argue that increased CEO power can weaken reporting transparency, undermining reputation over time.

Beyond its instrumental value, sustainability in high-externality industries such as freight and logistics is inherently an ethical issue because it concerns how environmental and social burdens are distributed across stakeholders and generations (Al Ramada et al., 2025; Cavico and Mujtaba, 2016). From a business-ethics perspective, corporate governance therefore operates not only as a performance-enhancing mechanism but also as an "ethical architecture" that shapes whether firms recognize stakeholder claims, deliberate about harms, and accept accountability for externalities (Cavico & Mujtaba, 2013; Vardarlıer & Inan, 2017). This ethical lens is particularly salient in freight and logistics services, where operational choices translate into material impacts on emissions, air quality, community well-being, and labor conditions across global value chains, including happier citizens in each society (Mujtaba et al.., 2020).

At the same time, ESG outcomes and sustainability disclosures may reflect either substantive responsibility or symbolic compliance. Institutional and legitimacy pressures can incentivize firms to adopt sustainability structures ceremonially while decoupling formal governance arrangements from operational change, increasing the risk of greenwashing and ethically misleading signals to investors and other stakeholders. Because market participants increasingly rely on ESG scores as visible proxies of responsible conduct—despite documented divergence across ESG measurement approaches identifying the governance conditions under which sustainability oversight becomes more credible has direct ethical relevance and practical significance for boards, investors, and policymakers.

Table 1 - Literature of Corporate Governance and Sustainability in Logistics

Study (Author(s), Year	Focus / Objective	Sample & Period	Methodology	Key Findings & Contribution
Kuzey vd. (2022)	The impact of gender diversity on the board of directors and CSR strategy on environmentally friendly practices (eco-innovation, resource use, emissions) in the logistics sector.	International transportation and logistics companies (TR Eikon), 2002–2019.	Fixed effects panel regression, moderation analysis.	They found that board gender diversity and CSR strategies both directly enhance environmental performance, and that CSR strategies further strengthen the relationship between gender diversity and eco-innovation.
Govindan vd. (2021)	The impact of board characteristics (gender diversity, CSR committee) on ESG performance and the impact of ESG performance on company value in the logistics sector.	100 international logistics companies (TR Eikon), 2011–2018.	Fixed effects panel regression.	They demonstrated that board gender diversity and the presence of a CSR committee improve ESG performance, although ESG performance does not have a significant positive effect on firm value (Tobin's Q).
Uyar vd. (2020)	Testing whether the relationship between CSR performance and CSR reporting in the logistics sector is "signaling" or "greenwashing."	International logistics companies (Thomson Reuters Eikon), 2012–2018.	Logistic and Poisson regression, fixed effects.	They observed that firms with high CSR performance engage in more extensive sustainability reporting, supporting the signaling theory.
Karaman vd. (2020)	The relationship between country-level green logistics performance (LPI) and sustainability reporting, and the regulatory role of corporate governance quality.	117 countries, 2007–2016.	Logistic and Poisson regression, moderation analysis.	They showed that higher Logistics Performance Index (LPI) scores are associated with increased reporting, and that this relationship is even stronger in environments with weaker governance (a substitution effect).
Erin vd. (2022)	The relationship between corporate governance (board and audit committee characteristics) and sustainability reporting quality in Nigeria.	120 listed companies in Nigeria, 2013–2018.	Ordinal logistic regression.	They found that board size, gender diversity, board expertise, and audit committee effectiveness all enhance the quality of sustainability disclosures, providing evidence in a developing-country context.
Pratama vd. (2025)	The effectiveness of sustainability-focused corporate governance mechanisms in preventing "greenwashing" practices in Southeast Asia.	132 companies from 4 Southeast Asian countries, 2021–2022.	Logistic regression.	They revealed that sustainability committees—particularly those dominated by executives—fail to prevent greenwashing and may even encourage it.
Eberhardt-Toth (2017)	The impact of the demographic composition of the CSR committee on corporate social performance.	177 international companies with CSR committees, 2012.	Binary logistic regression.	They identified the characteristics of high-performing CSR committees (more independent members, absence of the CEO, female chair, and smaller size).

Odriozola & Baraibar-Diez (2017)	The impact of CSR reporting quality on corporate reputation in the next period.	Ibex35 companies in Spain, 2006–2011.	Logistic regression.	They demonstrated that higher sustainability reporting quality, as measured by assurance standards, leads to improvements in corporate reputation.
Shamil vd. (2014)	The impact of board characteristics on the likelihood of sustainability reporting in Sri Lanka.	148 listed companies in Sri Lanka, 2012.	Hierarchical binary logistic regression.	They reported that larger boards and separation of the CEO and chair roles increase reporting likelihood, whereas the presence of female directors unexpectedly exerts a negative effect.
Sierra-García vd. (2015)	Examining the determinants of Integrated Reporting (IR), particularly its relationship with CSR report assurance.	7,144 international observations from the GRI database, 2009–2011.	Logistic regression.	They showed that external assurance of CSR reports, firm size, and use of sector-specific GRI supplements all raise the probability of adopting integrated reporting (IR).
Garcia-Sanchez vd. (2021)	The role of CEO power in the adoption of Integrated Reporting (IR).	1,588 international companies, 2009–2017.	Logistic panel regression.	Within an agency-theoretical framework, they found that more powerful CEOs resist adopting integrated reporting.
De Lucia vd. (2020)	Testing whether good ESG performance leads to better financial performance.	European public enterprises.	Machine Learning and Ordinal Logistic Regression. Machine Learning and Ordinal Logistic Regression.	They established a positive relationship between ESG practices and financial performance metrics (ROE, ROA).
Gündoğdu vd. (2023)	Analyzing the importance levels of ESG criteria for a multinational logistics company and selecting the most ideal environmental competitive strategy.	Case study on a single multinational logistics company.	Multi-Criteria Decision Making (q-ROF-EDAS).	Using a normative model, they recommended that "greenhouse gas emissions" be prioritized as the most important ESG criterion and "eco-efficiency" adopted as the optimal strategy in the logistics sector.
Govindan vd. (2016)	Reviewing the literature on Sustainable Supply Chain Management (SSCM) and highlighting the themes of governance, relationship management, and innovation.	Literature review (1993–2015).	Literature review and editorial review.	They reviewed the sustainable supply chain management literature to highlight core dynamics, research gaps, and future directions, thereby contributing to the field's theoretical foundations.

In summary, as shown in Table 1, while the governance–sustainability literature is extensive, within-sector heterogeneity in logistics remains underexplored. By focusing on the freight and logistics services sub-sector and jointly testing multiple board mechanisms, this study provides context-specific evidence that is directly actionable for governance design in a high-externality industry. Accordingly, drawing on agency theory, stakeholder theory, resource dependence theory, and institutional/legitimacy arguments while acknowledging competing predictions from stewardship theory we develop several hypotheses regarding how board structures are associated with sustainability performance in the freight and logistics services context.

Agency theory predicts that independent directors strengthen monitoring, reduce managerial opportunism, and constrain short-termism by limiting managerial discretion and improving oversight (Jensen & Meckling, 1976; Fama & Jensen, 1983). This logic is particularly relevant in freight and logistics services, where sustainability investments can be strategically and ethically consequential but financially costly in the near term. Complementing the agency view, stakeholder theory suggests that independence can broaden the set of interests represented in board deliberations, increasing the likelihood that external harms and stakeholder claims are incorporated into strategic decision-making (Donaldson & Preston, 1995; Freeman, 1984). Prior evidence indicates that governance quality is related to CSR/ESG outcomes and value relevance, supporting the expectation that stronger board oversight aligns with stronger sustainability performance (Jo & Harjoto, 2011; Govindan et al., 2021). As such, we propose the following hypothesis:

H1: Board independence is positively associated with firms' sustainability performance.

Resource dependence theory emphasizes that boards provide firms with critical resources, external linkages, and cognitive diversity that can enhance problem solving under complex environmental and social demands (Hillman et al., 2000; Mujtaba, 2022). In logistics, where sustainability challenges are operationally embedded (e.g., emissions, labor practices, supplier standards), broader perspectives and networks may improve the board's ability to acquire information, engage stakeholders, and oversee long-term initiatives. Stakeholder-oriented accounts further suggest that gender diversity may strengthen deliberation about stakeholder impacts and

legitimacy concerns, thereby improving oversight of sustainability trade-offs (Donaldson & Preston, 1995; Scherer & Palazzo, 2012). Sector evidence further indicates that CSR/ESG performance in logistics is value-relevant and plausibly shaped by governance-linked drivers consistent with these mechanisms (Govindan et al., 2021). As such, we propose the following hypothesis:

H2: Board gender diversity is positively associated with firms' sustainability performance.

A CSR committee can institutionalize sustainability oversight by embedding ESG priorities into board routines—agenda setting, monitoring, and evaluation. From a stakeholder theory perspective, such committees can increase credibility by ensuring systematic attention to environmental and social responsibilities and by strengthening accountability to salient stakeholders (Donaldson & Preston, 1995; Freeman, 1984). From an institutional/legitimacy perspective, empowered committees may reduce decoupling by translating sustainability commitments into governance processes rather than symbolic disclosure alone (Meyer & Rowan, 1977; Suchman, 1995). Empirical research suggests that committee design and independence can matter for sustainability governance effectiveness (Eberhardt-Toth, 2017), and evidence on disclosure quality similarly highlights governance-linked drivers of more credible reporting (Erin et al., 2022). As such, we propose the following hypothesis:

H3: The presence of a CSR committee is positively associated with firms' sustainability performance.

Table 2 - Variables and Measurement Constructs Employed in the Study

Variable Type	Variable Name	Symbol	Measurement
Dependent Variable	Sustainability Performance	ESG Score	Refinitiv's aggregated ESG score, normalized on a 0–100 scale.
Independent Variables	Board Independence	Bindep	Proportion of independent directors to total board members (%).
	Gender Diversity	Bgenderdiv	Proportion of female directors to total board members (%).
	CSR Committee	CSRcommittee	Dummy indicator of whether the firm has a CSR or Sustainability Committee at the board level (1 = Yes; 0 = No).
	CEO Duality	CEOdual	Dummy indicator of whether the CEO also serves as the board chair (1 = Yes; 0 = No).
Control Variables	Firm Size	Tassets	Natural logarithm of total assets. (ln)
	Leverage	Lvrage	Total liabilities divided by total assets.
	Profitability	Profitability	Net profit after tax divided by total revenues.
		ROA	Net profit after tax divided by total assets.
		ROE	Net profit after tax divided by total shareholders' equity.
	Free Float Ratio	Freefloat	Natural logarithm of the proportion of freely tradable shares to total shares outstanding. (ln)
	Board Size	Bsize	Total number of board members.

Note: ESG performance is measured using the Refinitiv Eikon aggregated ESG score. Board characteristics are hand coded from annual reports and cross checked with data provider disclosures. Financial ratios conform to international accounting standards and are winsorized at the 1st and 99th percentiles to mitigate outlier effects. Refinitiv maps heterogeneous issuer disclosures into comparable pillar level and composite ESG scores.

CEO duality concentrates authority by combining executive leadership and board chair roles, potentially weakening the board's capacity to challenge managerial preferences and scrutinize sustainability trade-offs. Agency theory predicts higher agency costs under role consolidation due to reduced monitoring effectiveness and greater information control (Jensen & Meckling, 1976; Fama & Jensen, 1983). In high-externality industries, such concentration can also heighten ethical risk by narrowing stakeholder-oriented deliberation and facilitating symbolic sustainability through strategic ESG signaling without commensurate operational change (Delmas & Burbano, 2011; Lyon &

Maxwell, 2011). However, stewardship theory offers a competing view: unity of command may enhance strategic coherence and accelerate long-term initiatives (Davis et al., 1997). Given the accountability demands of freight and logistics services and the documented risks associated with executive power for reporting transparency (García-Sánchez et al., 2021), we expect the monitoring and accountability disadvantages to dominate in this context. As such, we propose the following hypothesis:

H4: CEO duality is negatively associated with firms' sustainability performance.

Methodology

This study empirically examines the effect of corporate governance structures on sustainability performance within logistics firms operating internationally. The sample is confined to firms in the "Freight and Logistics Services" sub-sector and comprises annual panel data for the period 2016–2023, sourced from the Refinitiv Eikon database. After cleaning for missing observations, the final dataset includes 62 firms and 496 firm-year observations. Focusing on this sub-sector reduces heterogeneity and strengthens the validity and originality of our findings.

All firm-level data are obtained from the Refinitiv Eikon database. By restricting the analysis to the "Freight and Logistics Services" sub-sector, this study addresses the heterogeneity critique often levied at broad logistics sector analyses. The eight-year panel structure (2016–2023) comprises 496 firm-year observations, allowing for comprehensive cross-sectional and time-series variation analysis. The sampling frame consists of all firms classified by Refinitiv Eikon under "Freight and Logistics Services." Firms are included if (i) composite ESG scores and core financials are available for the 2016–2023 window with consistent fiscal coverage; (ii) board characteristics (independence, gender composition, CSR committee, CEO duality) can be validated from annual reports and data vendor disclosures; and (iii) no material inconsistencies exist between vendor records and issuer filings. Firms with missing ESG or financial observations, discontinuities, or unresolved data discrepancies are excluded. The final sample comprises 62 firms from 19 countries and 496 firm year observations. Cross country differences in accounting and sustainability reporting are mitigated by Refinitiv's standardized ESG and accounting definitions, which map heterogeneous firm disclosures into comparable pillar and composite scores, thereby supporting sector and cross-national comparability.

The variables employed in the panel data analysis are defined in accordance with established measurement standards in the corporate governance literature and the definitions provided by data-providers. Sustainability performance is proxied by the Refinitiv Eikon aggregated ESG score, which captures a firm's integrated environmental, social, and governance performance on a normalized 0–100 scale widely used by international investors and policymakers. In this study, sustainable performance denotes the firm's overall environmental–social–governance achievement as captured by Refinitiv Eikon's standardized composite ESG score on a 0–100 scale. We interpret this composite as a higher order sustainability construct; higher values indicate superior integrated performance across the E, S, and G pillars on a standardized, cross country comparable scale.

Sustainable performance is operationalized via Refinitiv Eikon' continuous 0–100 composite ESG score, which maps firm reported indicators to the environmental, social, and governance pillars and aggregates them into an overall standardized measure. At the pillar level, the environmental dimension covers emissions management, energy intensity, and resource use; the social dimension encompasses workforce health and safety, employee conditions, and product responsibility; and the governance dimension reflects board structure, corporate transparency, shareholder rights, and ethical conduct (Lee & Wu, 2014; Esangbedo et al., 2024). In logistics, environmental externalities—particularly fossil fuel dependence and GHG emissions—are material (Oršič et al., 2019). However, disclosure of granular, logistics specific environmental KPIs is heterogeneous across firms, countries, and years, which hampers direct comparability and inflates measurement error. To preserve cross national comparability and mitigate reporting driven noise, the analysis therefore relies on the standardized composite ESG score rather than isolating standalone environmental metrics (Yu et al., 2016).

Refinitiv's ESG framework standardizes heterogeneous disclosures into comparable pillar and composite scores across industries; nonetheless, it may not fully capture logistics specific operational processes. Although the model includes indicators related to transport related emissions, energy efficiency, and waste management, the granularity and coverage of such metrics vary across firms and jurisdictions, and operational nuances (e.g., routing and load factor optimization, modal shifts, fleet renewal dynamics) can remain under represented (Esangbedo et al., 2024; Oršič et al., 2019; Lee & Wu, 2014). Because the metric is constructed from issuer disclosures that are standardized by the data vendor, it jointly reflects underlying sustainability performance and the breadth and consistency of firms' reporting practices. Consequently, inferences pertain to a standardized ESG construct that is well suited for cross sector and cross-country comparisons but may be abstract from certain industry specific details (Yu et al., 2016). The primary independent governance variables reflect complementary dimensions of board composition and oversight. Board Independence and Gender Diversity are measured as the percentage of independent directors and the percentage of female directors, respectively, while the CSR Committee and CEO Duality are operationalized as binary indicators (1 = Yes; 0 = No). This specification simultaneously accommodates quantitative representation and the design nuances of governance structures.

Financial control variables encompass firm size, leverage, and profitability metrics to enhance the explanatory power of the models (Ngo et al., 2014; Jeffers et al., 2025). Specifically, we include Total Assets (as a proxy for firm size), Leverage (total liabilities to total assets), Profitability ratios (Profitability, ROA, ROE), Free Float (log-transformed proportion of shares available to public investors), and Board Size. While headcount is a conventional proxy for firm size, it is a noisy scale measure in logistics, where extensive outsourcing and subcontracting decouple operational scope from the employed workforce and headcount definitions vary across jurisdictions (e.g., treatment of part time and agency workers). To obtain an audited, internationally comparable scale metric, we use the natural logarithm of total assets (Ln Tassets), which more closely reflects capital intensive capacities such as fleet, warehousing, and IT infrastructure and is widely employed in logistics governance–ESG research. This choice enhances cross-country comparability and mitigates measurement error relative to headcount-based measures. All financial ratios are winsorized at the 1st and 99th percentiles to mitigate the influence of outliers, thereby preserving the statistical integrity of the dataset and strengthening the robustness of the regression estimates. Governance variables are hand‐coded from firms' annual reports and corroborated by data‐vendor disclosures. Formal definitions and coding rules are provided in Table 2.

In this study, we employ fixed‐effects panel data models to assess the impact of corporate governance characteristics on firms' sustainability performance. The panel framework allows us to control for unobserved, time‐invariant heterogeneity at the firm level as well as for year‐specific macroeconomic shocks.

Model 1 examines ESG score as a function of board attributes and financial control variables, thereby isolating the influence of governance structures on sustainability outcomes:

$$\begin{aligned} ESGscore\_it = {} & \beta 0 + \beta 1\, CEOdual\_it + \beta 2\, Bindep\_it + \beta 3\, Bgenderdiv\_it \\ & + \beta 4\, CSRcommittee\_it + \beta 5\, Tassets\_it + \beta 6\, Lvrage\_it \\ & + \beta 7\, Profitability\_it + \beta 8\, ROA\_it + \beta 9\, ROE\_it + \beta 10\, Freefloat\_it \\ & + \beta 11\, Bsize\_it + \alpha i + \lambda t + \varepsilon it \end{aligned}$$

Model 2 reverses this perspective by treating ESG performance as an independent variable and testing its effect on return on assets (ROA), enabling us to evaluate whether sustainability strategies translate into improved financial outcomes:

$$\begin{aligned} ROA_{it} = {} & \beta 0 + \beta 1\, ESGscore_{it} + \beta 2\, CEOdual_{it} + \beta 3\, Bindep_{it} + \beta 4\, Bgenderdiv_{it} \\ & + \beta 5\, CSRcommittee_{it} + \beta 6\, Tassets_{it} + \beta 7\, Lvrage_{it} + \beta 8\, Profitability_{it} \\ & + \beta 9\, ROE_{it} + \beta 10\, Freefloat_{it} + \beta 11\, Bsize_{it} + \alpha i + \lambda t + \varepsilon it \end{aligned}$$

Both models incorporate firm-specific fixed effects (α_i) to absorb unobserved, time-invariant firm traits (e.g., corporate culture) and year fixed effects (λ_t) to capture economy-wide shocks and temporal variations.

This specification enhances the reliability of our estimates by focusing on the causal effects of governance variables. Since the study has a panel data structure, fixed effects models are used to control for unobserved within-firm heterogeneity and macroeconomic cyclical shocks. These models reduce the risk of biased estimation by controlling for firm-level fixed but unobservable firm-level characteristics (corporate culture, governance quality) and year-level macro trends that affect all firms (economic crisis, industry regulations). In addition, we test the robustness of the results by presenting Random Effects and Pooled OLS estimates for alternative modeling. In all regressions, standard errors are clustered at the firm level to control for heteroskedasticity. All specifications are estimated with firm fixed effects and year fixed effects; standard errors are clustered at the firm level.

Our empirical analysis unfolds in three stages. The first stage is the presentation of descriptive statistics. The mean, standard deviation, minimum and maximum values of the variables are reported and the structure of the sample is presented in detail. In addition, skewness and kurtosis statistics are examined to assess the presence of outliers and to support the rationale for winsorizing financial ratios. The second step is to analyze the pairwise relationships between variables using Pearson correlation coefficients. Correlation matrices are used to predict the potential risk of multicollinearity in the model and to discuss the relationships between independent variables. The third stage involves panel regression analyses. ESG performance (Model 1) and firm performance (ROA; Model 2) were treated as dependent variables, and the effects of board characteristics and control variables were estimated separately using fixed effects, random effects, and pooled OLS models. All specifications include firm and year fixed effects (base year = 2016); results are unchanged when 2023 is used as the base.

Table 3 provides the winsorized descriptive statistics for all dependent, independent, and control variables. The ESG Score exhibits an average of approximately 50 and low skewness ($\approx$ − 0.23), indicating a balanced distribution. CEO Duality and CSR Committee appear in 36.5% and 61.7% of observations, respectively. Ratio variables such as Board Independence and Gender Diversity display substantial cross‐firm heterogeneity. Among financial controls, Total Assets shows relatively low variance (Std. Dev. $\approx$ 0.71), whereas Profitability, ROA, and ROE present higher skewness and kurtosis, justifying the winsorization process. Free Float and Board Size exhibit more symmetrical distributions.

Tablo 3 - Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	p1	p99	Skew.	Kurt.
ESGscore	496	50.146	19.551	5.227	87.133	9.103	84.68	-.234	2.186
CEOdual	496	.365	.482	0	1	0	1	.561	1.315
Bindep	496	59.511	24.903	0	100	0	100	-.314	2.168
Bgenderdiv	496	50.583	28.203	2.41	99.704	5.628	98.864	.028	1.722
CSRcommittee	496	.617	.487	0	1	0	1	-.481	1.231
Tassets	496	9.676	.71	5.895	10.972	7.79	10.914	-.716	4.456
Lvrage	496	.29	.17	0	.788	0	.669	.128	2.442
Profitability	496	.072	.206	-3.102	.849	-.477	.541	-7.477	117.958
ROE	496	.169	.416	-1.274	6.643	-.694	1.412	8.353	123.953
ROA	496	.067	.099	-.298	.572	-.18	.538	1.869	10.938
Freefloat	496	8.249	.698	5.895	9.721	6.713	9.669	-.025	2.436
Bsize	496	9.47	2.79	4	20	4	20	1.016	5.264

Note: Winsorized at the 1st/99th percentiles (N=496 firm-years; 62 firms, 2016-2023). (ln): Tassets, Freefloat. Dummies: CEOdual, CSRcommittee (1=Yes). Lvrage = Liabilities/Assets. p1/p99 are cut-offs; Skew./Kurt. computed after winsorization. See Table 2.

These findings affirm the necessity of winsorizing extreme values at the 1st and 99th percentiles to reduce their impact on regression estimates and enhance the reliability of the empirical results. Table 5 presents the bivariate correlation coefficients between the dependent, independent, and control variables used in the study. The 1% and 99% winsorizing process applied to the financial ratio variables limited the effect of outliers, ensuring that correlations were measured more accurately and reliably. Consistent with theoretical expectations, significant relationships are observed between the ESGscore variable and board characteristics. The positive correlation between Board Independence (Bindep) and Gender Diversity (Bgenderdiv) variables and ESG performance supports

Hypotheses H1 and H2. This finding reflects the capacity of independent and diverse boards of directors to develop stronger sustainability strategies. The presence of a CSR Committee (CSRcommittee) shows a significant and positive relationship with ESGscore, confirming hypothesis H3. The negative correlation between the CEO duality (CEOdual) variable and ESGscore supports hypothesis H4, which suggests that managerial power concentration may limit stakeholder-focused sustainability practices. In the correlation matrix, financial control variables (ROA, ROE, Profitability, Leverage, Total Assets, Free Float) exhibit significant and mostly positive relationships with ESGscore. This aligns with the theoretical expectation that larger, more profitable, and financially stronger firms may have the resources and capacity to support ESG performance. Overall, these findings confirm the theoretically predicted effects of corporate governance and financial factors on ESG performance and emphasize the importance of addressing both dimensions holistically in empirical models.

Tablo 4 - Variance Inflation Factor (VIF) Analysis

	VIF	**1/VIF**
ROA	2.053	.487
ROE	1.557	.642
Profitability	1.446	.692
Tassets (ln)	1.433	.698
Bgenderdiv	1.369	.731
Bindep	1.334	.75
Lvrage	1.324	.755
CEOdual	1.262	.793
Bsize	1.236	.809
CSRcommittee	1.224	.817
Freefloat (ln)	1.201	.832
Mean VIF	**1.403**	.

Note: Variance Inflation Factor (VIF) values were calculated to assess the risk of multicollinearity between independent variables. VIF values for all variables remained below 10, which is the upper limit accepted in the literature, indicating that multicollinearity was not a significant problem.

Tables 6 and 7 summarize the panel regression estimates for sustainability performance (ESG score) and financial performance (ROA), respectively. All specifications report firm fixed effects, year fixed effects (with 2016 and 2023 as reference years), and random effects estimates to control for unobserved firm‐level heterogeneity and period‐specific shocks. Financial ratio variables have been winsorized at the 1st and 99th percentiles to mitigate the influence of outliers, and standard errors are clustered at the firm level.

The ESG regression results presented in Table 6 demonstrate that board structural characteristics align with theoretical expectations and generally exhibit statistically significant relationships. Board independence (Bindep) shows a positive and significant association with ESG scores, thereby supporting Hypothesis 1 and underscoring the capacity of independent directors to enhance firms' sustainability strategies. Board gender diversity (Bgenderdiv) is positive and significant only in the pooled OLS specification; its coefficient loses statistical significance once firm fixed effects or random effects are included. This attenuation suggests that the influence of female representation on ESG performance is mediated by unobserved, firm‐specific governance and cultural factors, indicating the need to interpret gender diversity effects within the broader internal governance context. The presence of a CSR committee (CSRcommittee) exerts a robust and positive effect on ESG performance across all model specifications, strongly corroborating Hypothesis 3.

Tablo 5 - Pairwise Correlation Matrix (Winsorized Variables)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) ESGscore	1.000											
(2) CEOdual	-0.151	1.000										
	(0.001)											
(3) Bindep	0.154	0.230	1.000									
	(0.001)	(0.000)										
(4) Bgenderdiv	0.453	-0.065	0.365	1.000								
	(0.000)	(0.149)	(0.000)									
(5) CSRcommittee	0.553	-0.247	0.059	0.293	1.000							
	(0.000)	(0.000)	(0.187)	(0.000)								
(6) Tassets	0.630	-0.081	0.249	0.327	0.263	1.000						
	(0.000)	(0.071)	(0.000)	(0.000)	(0.000)							
(7) Lvrage	0.158	-0.157	0.004	-0.041	0.087	0.195	1.000					
	(0.000)	(0.000)	(0.928)	(0.362)	(0.052)	(0.000)						
(8) Profitability	0.190	0.041	0.131	0.139	0.077	0.199	-0.166	1.000				
	(0.000)	(0.358)	(0.004)	(0.002)	(0.086)	(0.000)	(0.000)					
(9) ROE	0.191	0.129	0.165	0.188	0.090	0.238	-0.105	0.351	1.000			
	(0.000)	(0.004)	(0.000)	(0.000)	(0.045)	(0.000)	(0.019)	(0.000)				
(10) ROA	0.152	0.050	0.087	0.134	0.091	0.151	-0.364	0.537	0.552	1.000		
	(0.001)	(0.271)	(0.052)	(0.003)	(0.043)	(0.001)	(0.000)	(0.000)	(0.000)			
(11) Freefloat	0.255	-0.156	-0.118	0.098	0.165	0.234	0.188	0.006	0.044	0.004	1.000	
	(0.000)	(0.000)	(0.009)	(0.028)	(0.000)	(0.000)	(0.000)	(0.891)	(0.327)	(0.926)		
(12) Bsize	0.338	0.122	0.099	0.180	0.171	0.317	0.097	0.088	0.108	0.055	0.269	1.000
	(0.000)	(0.007)	(0.028)	(0.000)	(0.000)	(0.000)	(0.031)	(0.049)	(0.016)	(0.223)	(0.000)	

Note: Correlation coefficients were calculated using financial variables winsorized at the 1% and 99% percentiles to reduce the effect of outliers. Statistical significance levels were reported at the 1%, 5%, and 10% level.

In contrast, the results for CEO duality (CEOdual) are less consistent: the pooled OLS model yields an insignificant coefficient, whereas both fixed and random effects models produce negative, statistically significant estimates. This discrepancy implies that models accounting for unobserved firm heterogeneity more accurately capture the adverse impact of role consolidation on sustainability outcomes. Moreover, the strength of this effect may vary across countries and sectors, warranting further research to explore CEO duality’s ESG implications in a cross‐contextual framework.

Turning to financial performance (ROA) in Table 7, the governance mechanisms demonstrate a clear influence on firm profitability. CEO duality is associated with negative and significant coefficients in all specifications, thereby confirming Hypothesis 4 by suggesting that combined CEO–chair roles exacerbate agency costs and undermine profitability. Board gender diversity consistently yields positive and significant estimates, lending support to Hypothesis 2 and indicating that diverse boards enhance strategic decision-making quality and stakeholder trust, which in turn improve financial performance. Conversely, board independence and CSR committee presence do not exert direct, statistically significant effects on ROA, although their positive relationships with ESG performance hint at potential indirect benefits for profitability over the long term.

Control variables behave as theoretically anticipated: leverage significantly diminishes financial performance, whereas prior profitability and return on equity positively influence ROA. The high explanatory power of the fixed‐effects models ($R^2 \approx 0.90$) highlights the critical role of firm‐specific, time‐invariant factors in shaping financial outcomes and reduces the risk of omitted‐variable bias.

Overall, these analyses comprehensively elucidate how board structures affect both sustainability and financial performance, identifying CEO role separation and gender diversity as particularly pivotal for achieving sustained value creation. The findings offer actionable guidance for policy and practice in the logistics industry—prioritizing CEO–chair separation, institutionalizing

board level CSR committees, and fostering gender diverse boards to strengthen ESG outcomes and long run financial performance.

Tablo 6 - Panel Regression Estimates for ESG Performance

Variables	ESG_Pooled	ESG_FirmFE	ESG_FirmFE_2016	ESG_FirmFE_2023	ESG_RE
CEOdual	-0.0980	-1.984	0.423	0.423	-2.421
	(2.302)	(1.981)	(1.969)	(1.969)	(1.844)
Bindep	-0.0467	0.202***	0.139**	0.139**	0.123**
	(0.0623)	(0.0685)	(0.0643)	(0.0643)	(0.0545)
Bgenderdiv	0.142***	0.0180	0.0123	0.0123	0.0306
	(0.0491)	(0.0232)	(0.0215)	(0.0215)	(0.0228)
CSRcommittee	14.14***	10.24***	6.908***	6.908***	12.01***
	(3.146)	(1.779)	(1.798)	(1.798)	(1.847)
Tassets	11.74***	18.87***	12.39***	12.39***	13.97***
	(2.771)	(2.900)	(2.845)	(2.845)	(2.806)
Lvrage	6.101	-7.104*	-6.742*	-6.742*	-2.951
	(7.713)	(3.697)	(3.626)	(3.626)	(3.447)
Profitability	4.483	3.065	1.779	1.779	3.865
	(2.696)	(2.910)	(3.737)	(3.737)	(2.729)
ROA	5.052	-11.14**	-14.67**	-14.67**	-7.216
	(10.58)	(5.392)	(6.485)	(6.485)	(4.915)
ROE	-0.366	2.255***	2.512***	2.512***	2.069***
	(1.346)	(0.510)	(0.432)	(0.432)	(0.669)
Freefloat	0.974	-8.866**	-4.617	-4.617	-1.782
	(2.044)	(3.481)	(3.520)	(3.520)	(2.424)
Bsize	0.649	-0.354	-0.175	-0.175	-0.157
	(0.459)	(0.413)	(0.400)	(0.400)	(0.406)
Constant	-93.07***	-72.24**	-46.46**	-38.16*	-83.46***
	(24.58)	(30.92)	(19.33)	(19.31)	(30.24)
Observations	496	496	496	496	496
R-squared	0.607	0.397	0.493	0.493	
Number of firms		62	62	62	62

*Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.*

Tablo 7 - Panel Regression Estimates for Firm Financial Performance (ROA)

Variables	ROA_Pooled	ROA_FirmFE	ROA_FirmFE_2016	ROA_FirmFE_2023	ROA_RE
ESGscore	-0.000	-0.001**	-0.001**	-0.001**	-0.001*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEOdual	-0.007	-0.029**	-0.029**	-0.029**	-0.015
	(0.007)	(0.014)	(0.014)	(0.014)	(0.010)
Bindep	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Bgenderdiv	-0.000	0.000**	0.000**	0.000**	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CSRcommittee	0.003	0.011	0.011	0.011	0.009
	(0.008)	(0.011)	(0.011)	(0.011)	(0.009)
Tassets	0.004	0.142***	0.142***	0.142***	0.028***
	(0.006)	(0.019)	(0.019)	(0.019)	(0.009)
Lvrage	-0.159***	-0.323***	-0.323***	-0.323***	-0.239***
	(0.019)	(0.026)	(0.026)	(0.026)	(0.023)
Profitability	0.159***	0.152***	0.152***	0.152***	0.150***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.015)
ROE	0.087***	0.094***	0.094***	0.094***	0.094***
	(0.008)	(0.009)	(0.009)	(0.009)	(0.008)
Freefloat	0.002	-0.057***	-0.057***	-0.057***	0.005
	(0.005)	(0.019)	(0.019)	(0.019)	(0.008)
Bsize	0.000	-0.003	-0.003	-0.003	-0.000
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Constant	0.019	-0.705***	-0.723***	-0.723***	-0.181**
	(0.058)	(0.139)	(0.140)	(0.140)	(0.085)
Observations	496	496	496	496	496
R-squared	0.799	0.900	0.900	0.900	
Number of firms		62	62	62	62

Note: Tables 6 and 7 report estimates from firm fixed effects models with year fixed effects (base year = 2016); results are unchanged when 2023 is used as the base. Standard errors are clustered at the firm level, and all financial ratio variables are winsorized at the 1st and 99th percentiles.

Conclusion

This study provides sector-specific evidence on how board structures and financial characteristics relate to sustainability performance in the "Freight and Logistics Services" sub-sector. Using an unbalanced panel of 62 listed firms from 19 countries (2016–2023) and Refinitiv's standardized composite ESG score, we estimate firm- and year fixed-effects models and report random-effects and pooled OLS specifications as complementary benchmarks. By focusing on a single logistics sub-sector and a consistent ESG metric, the analysis mitigates cross-industry heterogeneity and enables more coherent sectoral interpretation.

The ESG results in Table 6 underscore the relevance of internal governance mechanisms. Board independence and the presence of a board-level CSR committee are positively and robustly associated with ESG scores once unobserved firm heterogeneity is controlled for. Substantively, the CSR committee effect is economically large: in the firm fixed-effects specification, having a CSR committee is associated with an increase of about 10.2 ESG points. Board independence is also meaningful in magnitude: a one-percentage-point increase in independent directors is associated with roughly 0.20 ESG points, implying that a 10-percentage-point increase corresponds to about 2 ESG points. Evidence on board gender diversity is more mixed. While the share of female directors is positive and significant in pooled OLS, it becomes statistically insignificant in the fixed- and random-effects models, suggesting that any ESG benefits of gender diversity may depend on deeper, firm-specific institutional or cultural conditions rather than representation alone. CEO duality is negative in sign in the within-firm models, but the estimates are not statistically precise for ESG performance, indicating that the ESG effect of role consolidation is not robustly identified in this sample.

Table 7 provided a picture for financial performance. CEO duality is consistently associated with lower profitability in the firm fixed-effects model (about 2.9 percentage points lower ROA), aligning with agency-based arguments that role consolidation can increase agency costs and weaken effective oversight. Board gender diversity is positively related to ROA across specifications, consistent with the view that diversity can enhance decision quality, monitoring, and legitimacy, although the economic magnitude should be interpreted with care given coefficient scaling and rounding. Board independence and CSR committee presence do not exhibit direct statistically significant effects on ROA, despite their robust associations with ESG outcomes, which is consistent with the possibility that governance affects firm value through longer-horizon, indirect channels. Finally, ESG scores display a small but negative within-firm association with ROA (approximately –0.001 per ESG point), implying that a 10-point increase in ESG is associated with about a 1 percentage point lower ROA in the short run. In freight and logistics services, this pattern is consistent with near-term costs and resource reallocations (e.g., compliance, retrofitting, process redesign) whose financial payoffs may materialize gradually rather than immediately.

These findings offer several implications. Theoretically, they reinforce governance and stakeholder perspectives emphasizing that board design and sustainability governance structures matter for ESG outcomes in high-externality settings. Substantively, the short-run ESG–ROA trade-off cautions against simplistic "win–win" narratives and highlights the importance of time horizons and sectoral context when assessing the value relevance of sustainability. Practically, sector-level governance codes and listing rules could encourage well-resourced CSR/sustainability committees and stronger independent oversight, while firm-level boards may integrate sustainability metrics into strategy, risk management, and executive incentives with realistic expectations regarding time lags. From a business-ethics perspective, these governance levers also matter because they shape the credibility of sustainability oversight and reduce the risk that ESG reporting functions as an ethically misleading signal rather than evidence of substantive responsibility.

Finally, the study has limitations that suggest avenues for further research. Reliance on a composite ESG score, while standardized and widely used, may not fully capture logistics-specific operational indicators (e.g., transport-related GHG intensity; energy use per tonne-kilometre). The sample is limited to listed firms with sufficient disclosure coverage, which may introduce selection effects. Moreover, despite firm and year fixed effects, endogeneity between governance structures, ESG strategies, and financial outcomes cannot be fully ruled out. Future research could combine standardized ESG scores with granular, sector-specific environmental metrics and employ dynamic panel, instrumental-variable, or quasi-experimental designs based on exogenous governance reforms to strengthen causal inference. Extending the analysis to privately held firms, other logistics segments, and emerging-market settings would further enhance external validity. Despite these limitations, the results indicate that board design and sustainability governance are key levers for improving ESG performance in international freight and logistics, while financial effects depend on governance quality and the temporal lens used to assess performance.

Author Contributions

Conceptualization: M.D., P. V.; data curation: M.D., B. G. M., P.V.; formal analysis: M.D., B. G. M., P. V.; investigation: M.D., P. V.; methodology: M.D., P. V.; project administration: M.D., B. G. M., P. V.; supervision: M.D., B. G. M., P. V.; validation: M.D., B. G. M., P. V.; visualization: M.D., B. G. M.; writing – original draft: M.D., P. V.; writing – review & editing: M.D., B. G. M., P. V.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability Statement

Not applicable.

Informed Consent Statement

The authors have obtained and maintained written informed consent from all subjects involved in the study.

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Appendix

A - List of firms included in the analysis

Country of Headquarters	Company Name	Country of Headquarters	Company Name
Australia	Aurizon Holdings Ltd	New Zealand	Mainfreight Ltd
Australia	Wellard Ltd	Singapore	Cosco Shipping International (Singapore) Co Ltd
Austria	Oesterreichische Post AG	Singapore	Singapore Post Ltd
Belgium	Bpost SA	South Africa	Grindrod Ltd
Brazil	Rumo SA	Switzerland	Kuehne und Nagel International AG
Canada	Canadian National Railway Co	Taiwan	Evergreen Marine Corp Taiwan Ltd
Canada	Canadian Pacific Kansas City Ltd	Taiwan	U-Ming Marine Transport Corp
Canada	Mullen Group Ltd	Taiwan	Wan Hai Lines Ltd
Canada	TFI International Inc	Taiwan	Yang Ming Marine Transport Corp
China	COSCO Shipping Holdings Co Ltd	United Kingdom	Clarkson PLC
China	Sinotrans Ltd	United Kingdom	International Distributions Services PLC
Denmark	AP Moeller - Maersk A/S	United Kingdom	James Fisher and Sons PLC
Denmark	Dampskibsselskabet Norden A/S	United Kingdom	Redde Northgate PLC
Denmark	DSV A/S	United Kingdom	Stolt-Nielsen Ltd
Germany	Deutsche Post AG	United States	CH Robinson Worldwide Inc
Greece	MIG Holdings SA	United States	CSX Corp
Hong Kong	Orient Overseas (International) Ltd	United States	Expeditors International of Washington Inc
Hong Kong	Pacific Basin Shipping Ltd	United States	FedEx Corp
India	Container Corporation of India Ltd	United States	Hub Group Inc
Japan	Kamigumi Co Ltd	United States	Heartland Express Inc
Japan	Kawasaki Kisen Kaisha Ltd	United States	J B Hunt Transport Services Inc
Japan	Mitsui O.S.K. Lines Ltd	United States	Kirby Corp
Japan	Nippon Yusen KK	United States	Landstar System Inc
Japan	Seino Holdings Co Ltd	United States	Matson Inc
Japan	Yamato Holdings Co Ltd	United States	Norfolk Southern Corp
Korea; Republic (S. Korea)	CJ Logistics Corp	United States	Old Dominion Freight Line Inc
Korea; Republic (S. Korea)	HMM Co Ltd	United States	Ryder System Inc
Korea; Republic (S. Korea)	Hyundai Glovis Co Ltd	United States	U-Haul Holding Co
Korea; Republic (S. Korea)	Pan Ocean Co Ltd	United States	Union Pacific Corp
Kuwait	Agility Public Warehousing Company KSCP	United States	United Parcel Service Inc
New Zealand	Freightways Group Ltd	United States	Werner Enterprises Inc

Author Biographies

Mert Demir is a Research Assistant at Balıkesir University, Faculty of Economics and Administrative Sciences, within the Department of International Trade and Logistics. He earned his degree in International Trade and Logistics from Ondokuz Mayıs University in 2023 and is currently pursuing his Master's degree in Accounting and Finance at Balıkesir University's Institute of Social Sciences. Serving in the Division of International Finance, his academic expertise focuses on accounting and auditing, corporate governance, and financial distress. His current research specifically examines the intersection of ESG (Environmental, Social, and Governance) frameworks and sustainability within the modern financial landscape, aiming to contribute to the strategic development of these fields.

Bahaudin G. Mujtaba is professor of management, human resources, and international management. Dr. Mujtaba has served as a professor, director, and department chair at the Huizenga College of Business and Entrepreneurship at Nova Southeastern University since 2002. Bahaudin was given the prestigious annual "Faculty of the Year Award" twice at NSU. Bahaudin is a certified trainer on topics such as "Situational Leadership" by the Paul Hersey organization, and "Cultural Competency" through the National Multi-Cultural Institute (NMCI). He has been involved in leadership, management development, and cultural competency education since the late 1990s. Bahaudin worked with Publix Super Markets, Inc. in retail management and as a senior management development specialist in their human resources department for sixteen years. Bahaudin's research and writing interests are in the areas of human resources, leadership, sustainability, international management, and higher education.

Pelin Vardarlıer is a faculty member at Balıkesir University, Department of Business Administration. With over 10 years of academic leadership experience, she previously served as the Head of Human Resources Management at Istanbul Medipol University. She holds a PhD in Business Administration with a focus on the role of social media in HRM, and her academic background spans labor economics, foreign trade, and international business. Prof. Vardarlıer has more than a decade of industry experience in HR and quality management across various sectors. Her research focuses on strategic management, digital HRM, leadership, coaching, and gamification. She is also an ICF-certified coach and mentor, with publications in prestigious journals such as Springer, SSCI, and Scopus-indexed platforms, and has led both national and international research projects in her field.