INDERSCIENCE PUBLISHERS
Linking academia, business and industry through research

**International Journal of Business Excellence**

ISSN online: 1756-0055 - ISSN print: 1756-0047
https://www.inderscience.com/ijbex

# Environmental, social and governance reporting quality and firm lag vs. lead performance: evidence from Sri Lankan listed companies

S.S.J. Patabendige, L.M. Kasthuriarachchi, P.U.S. Fernando, S.A.C.L. Senarath

**DOI:** 10.1504/IJBEX.2026.10076568

**Article History:**

| | |
|---|---|
| Received: | 03 December 2025 |
| Last revised: | 09 December 2025 |
| Accepted: | 21 December 2025 |
| Published online: | 02 March 2026 |

*Copyright © 2026 Inderscience Enterprises Ltd.*

# Environmental, social and governance reporting quality and firm lag vs. lead performance: evidence from Sri Lankan listed companies

S.S.J. Patabendige

Department of Marketing Management,
Faculty of Commerce and Management Studies,
University of Kelaniya, Sri Lanka
Email: sugeeth@kln.ac.lk

L.M. Kasthuriarachchi

Faculty of Commerce and Management Studies,
University of Kelaniya, Sri Lanka
Email: lasinimihimali@gmail.com

P.U.S. Fernando

Department of Marketing Management,
Faculty of Commerce and Management Studies,
University of Kelaniya, Sri Lanka
Email: pusfer251@kln.ac.lk

S.A.C.L. Senarath*

Department of Commerce and Financial Management,
Faculty of Commerce and Management Studies,
University of Kelaniya, Sri Lanka
Email: chathu@kln.ac.lk
*Corresponding author

**Abstract:** ESG reporting is now standard practice, yet its performance implications remain contested. Prior studies have been largely fragmented, taking a biased stance on selected ESG dimensions or focusing on financial lag indicators with little interest in lead indicators, resulting in an incomplete understanding of ESG disclosures and their impact. Using five-year panel data from 60 listed firms, this paper fills these gaps. Following the 2023 GRI guidelines, four disclosure quality indices, both individual and composite, are constructed and examined against lag indicators (ROA, ROE, ROS) and a lead indicator, MV. Findings reveal that composite ESG acts as a signal of value creation with a stronger correlation with ROS and MV. However, when disaggregated, possible temporal differences emerge, with environmental reporting primarily associated with lead and the other two with lag indicators, suggesting that ESG disclosure is part of an intentional strategy rather than a response to external pressures.

Copyright © The Author(s) 2026. Published by Inderscience Publishers Ltd. This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)

**Keywords:** environmental; social; governance; ESG disclosures; lead indicators; lag indicators; organisational performance; GRI guidelines; Sri Lanka.

**Reference** to this paper should be made as follows: Patabendige, S.S.J., Kasthuriarachchi, L.M., Fernando, P.U.S. and Senarath, S.A.C.L. (2026) 'Environmental, social and governance reporting quality and firm lag vs. lead performance: evidence from Sri Lankan listed companies', *Int. J. Business Excellence*, Vol. 38, No. 7, pp.1–21.

**Biographical notes:** S.S.J. Patabendige is a Senior Lecturer and the Head of the Department in Marketing Management at the University of Kelaniya, Sri Lanka.

L.M. Kasthuriarachchi is a post-graduate student of the Faculty of Commerce and Management Studies, University of Kelaniya, Sri Lanka.

P.U.S. Fernando is an Assistant Lecturer attached to the Department of Marketing Management, Faculty of Commerce and Management Studies at the University of Kelaniya, Sri Lanka.

S.A.C.L. Senarath is a Senior Lecturer in the Department of Commerce and Financial Management at the University of Kelaniya, Sri Lanka.

## 1 Introduction

ESG reporting has become a standard practice among most corporates, driven partly by regulatory pressure and partly by stakeholder demand for transparency beyond financial statements. The logic appears straightforward: environmental disclosures signal resource stewardship, social disclosures demonstrate stakeholder commitment, and governance disclosures indicate organisational accountability (IFRS Foundation, 2024). Organisations that excel in these areas should, in principle, outperform those that do not – through enhanced reputation, stakeholder trust, operational efficiency, or reduced risk exposure (Pérez et al., 2018; Bednárová, 2025). Yet, despite the proliferation of ESG frameworks and reporting standards over the past decade, fundamental questions about the relationship between disclosure quality and organisational outcomes remain unresolved. The presumption that better reporting translates into better performance operates more as accepted wisdom than as empirically established fact. As Khan (2022, p.1) asserts, the "link between ESG and firm financial performance is still not well established because literature is infused with conflicting results and paradoxes".

An analysis of past studies sheds further light on the current state of the literature on ESG disclosures and their impact. Some research documents positive associations between ESG disclosure quality and firm profitability, cost efficiency, and market valuation (Wang, 2024; Aydogmus et al., 2022). In contrast, other studies find that ESG disclosures have a minimal impact, or worse, suggesting that they create ethical dilemmas and facilitate greenwashing rather than genuine behavioural change (Detre and Gunderson, 2011; Hu et al., 2024). Scholars (e.g., Arvidsson and Dumay, 2022; Narula et al., 2024) argue that such differences in findings are largely due to the ambiguous nature of ESG disclosures and the inherently incomparable nature of their outcomes.

Regarding ESG disclosures, these differences can be attributed to variations in defining what ESG entails, arbitrary prioritisation of certain ESG dimensions, an emphasis on either the quantity of disclosure or solely on the quality, and some using proprietary ratings while others employ standard indicators. Similarly, conceptualisations of firm performance vary widely, ranging from accounting returns to market valuations to risk measures, each capturing different aspects of organisational outcomes (Zahra et al., 2025). Such methodological heterogeneity makes it challenging to determine whether inconsistent findings reflect genuine context dependencies or merely measurement artefacts.

Two patterns emerge from existing studies that warrant particular attention. First, most research examines ESG dimensions in isolation – environmental practices in one stream (Chen et al., 2015; Nimanthi and Priyadarshanie, 2021), governance mechanisms in another (Ratnayake and Rajakulanajagam, 2022), occasionally social and environmental together (Qiu et al., 2016; Sebastianelli et al., 2025) – but rarely all three simultaneously as an integrated framework. This fragmentation makes it challenging to determine whether ESG functions as a cohesive system or whether individual components operate independently, potentially with offsetting effects. Moreover, depending on environmental, social, and governance (ESG) practices that interact synergistically or substitutively, single-dimension studies may mischaracterise their collective impact. Second, performance measures cluster around historical financial metrics, including ROE, ROA, and occasionally ROS (Elmghaamez et al., 2024; Giannopoulos et al., 2022; Chau et al., 2025). These lag indicators capture past efficiency but reveal little about forward-looking market expectations or investor perceptions of future value creation. As Zahra et al. (2025, p.20) contend, "accounting indicators primarily communicate realised performance, presenting a historical snapshot of operational results, whereas market metrics embody a forward-looking perspective". However, it is worth noting that framing ESG disclosure mainly as a signal of long-term strategic positioning, and therefore examining only forward-looking metrics, overlooks the mechanisms through which ESG actually influences firm performance.

This study addresses the above two limitations through a study design that treats ESG as an integrated construct while distinguishing between lag and lead performance indicators by asking the research question: Does ESG reporting quality manifest differently in lag performance indicators (ROA, ROE, ROS) versus lead performance indicators (market value), and do individual ESG dimensions affect organisational performance through distinct mechanisms? The simultaneous examination of multiple financial metrics alongside market valuation is expected to allow us to also distinguish between operational efficiency effects, profitability impacts, and investor perception signals (Heitzman and Huang, 2019; Huang, 2021). We solicit evidence from Sri Lanka, a developing country considered as one of the early adopters of ESG reporting (Nimanthi and Priyadarshanie, 2021). Using panel data from 60 companies listed on the Colombo Stock Exchange across five years (2019/2020–2023/2024), we construct disclosure quality indices for environmental (8 items), social (18 items), and governance (13 items) dimensions based on 2023 GRI standards, alongside a composite ESG index aggregating all 39 items. The GRI framework offers advantages for index construction: it represents current best international practice, provides granular item-level guidance, and enjoys widespread adoption that facilitates benchmarking.

The study's findings contradict the general assumption that ESG disclosure operates uniformly across performance measures or that its three dimensions function

interchangeably. Aggregate ESG reporting quality correlates more strongly with ROS and market value than with ROA or ROE, indicating relevance to operational efficiency and investor expectations rather than pure profitability or asset utilisation. Individual dimensions diverge further in ways that challenge simplistic interpretations. Environmental disclosure is associated with market valuations but not strongly with the financial returns examined. In contrast, social and governance disclosure correlates with both financial metrics and market value. One reading is that markets price environmental commitments as long-horizon investments whose financial benefits materialise gradually, whereas social and governance practices generate more immediate operational effects through workforce productivity, stakeholder relationships, or management quality. Alternatively, environmental disclosure may face greater credibility challenges due to widespread concerns about greenwashing, causing investors to discount stated commitments until they are verified through tangible outcomes. These interpretations remain speculative until further investigation into the causal mechanisms is conducted.

These results contribute to the extant literature in three interrelated ways. Methodologically, quantifying dimensional reporting quality using GRI standards provides a transparent, replicable measurement approach that future research can adopt, adapt, or critique-a clear improvement over proprietary ESG ratings whose construction remains opaque. In doing so, we address Khan's (2022, p.2) concern that "although ESG disclosure is widely recognised as an important measure of corporate sustainability, standardisation of these disclosures has not yet been achieved. Different rating agencies provide ESG performance indexes based on different methodologies, which may hinder investors' decision making". Empirically, the joint analysis of lag and lead indicators suggests that ESG disclosure may serve more as a signalling mechanism for operational capability and strategic direction than as a direct profitability lever – a distinction that is obscured when studies examine either accounting returns alone or market metrics in isolation. Thus, the use of both lag and lead performance indicators directly addresses the call by Zahra et al. (2025) and Kalyani and Mondal (2024) for the adoption of more balanced performance indicators in relation to ESG disclosures. Practically, the dimensional differences imply that firms pursuing integrated ESG strategies should anticipate asymmetric effects across domains and time horizons. Environmental investments may demand patience prior to financial materialisation, while social and governance improvements might realise near-term operational returns. However, whether these patterns reflect Sri Lankan institutional characteristics, including the regulatory environment, level of investor sophistication, stakeholder activism, or generalise more broadly across emerging markets, remains an empirical question worth pursuing.

## 2 Literature review

The quality of ESG reporting is a multidimensional concept that entails several key dimensions: accuracy, completeness, reliability, and transparency of ESG information reported in annual reports or special sustainability reports (Baier et al., 2020; Sharawi and Shahawi, 2025). Quality comes in the form of adherence to set structures, namely Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), Task Force on Climate-related Financial Disclosures (TCFD, 2022), but adhering to disclosure checklists mechanically is not a sufficient manifestation of quality (GRI, 2020; SASB, 2020; PRI, 2020). Within this broader context, the quality of environmental reporting is a

measure of the depth and accuracy of reporting on carbon emissions, energy efficiency, resource usage, and the management of ecological impact (Khan et al., 2016). High-quality environmental disclosure theoretically enhances transparency and credibility with investors, regulators, and stakeholders who increasingly scrutinise firms' environmental footprints. Social reporting quality captures workforce practices, community engagement, human rights considerations, and labour standards – dimensions that gained prominence following mounting pressure on corporations to demonstrate social responsibility beyond legal minimums (Eccles et al., 2014). The quality of governance reporting encompasses board structure, executive compensation packages, shareholder rights, and procedures for controlling internal controls, based on the concerns that arose following corporate scandals due to the revelations of the costs of poor governance (La Porta et al., 2000). These three pillars are theoretically an integrated system; however, the issue of synergy versus independence is empirically controversial (Arvidsson and Dumay, 2022).

## *2.1 ESG reporting quality and financial performance*

The connection between the quality of ESG disclosure and financial performance has produced voluminous research focus, resulting in trends that are not easily characterised (Kalyani and Mondal, 2024). Numerous studies have recorded positive correlations. For example, Aydogmus et al. (2022) found that companies with higher-quality ESG disclosure exhibited better profitability and risk profiles across Turkish manufacturing companies. Similar trends were also observed in Italian listed firms by Pulino et al. (2022), with extensive ESG disclosure being associated with higher ROA and ROE. Wang (2024) further demonstrated that in stakeholder-oriented companies where ESG performed well, financial results were better due to increased legitimacy and access to resources. The mechanisms have differed across studies, as some have focused on operational efficiency improvements through environmental management systems, others have focused on lower capital costs by improving stakeholder relations, and still others have focused on enhancing innovation capacity through effective governance structures.

Yet, contradictory findings persist with enough regularity to warrant scepticism about universal positive effects. Detre and Gunderson (2011) found no significant relationship between corporate social responsibility disclosures and financial performance in agricultural firms, suggesting sector-specific contingencies. Hu et al. (2024) went further, documenting cases where intensive ESG focus created implementation costs that outweighed benefits, or worse, facilitated greenwashing that damaged credibility when exposed. Nian and Said (2025) summarised the ESG research findings and concluded that the ESG issue of impact on firm risk and financial performance is ambiguous, as both positive, negative, and null findings are accompanied by methodologically adequate studies. One possible reason for these discrepancies is that ESG ratings provided by various companies are weakly associated with one another (Berg et al., 2022). Alternatively, the contingency of the relationship may exist at an institutional level, a feature of the industry, or the size of the firm or the quality of implementation, rather than disclosure itself, which disclosure-based studies find difficult to operationalise. This highlights the distinction between merely reporting ESG activities and actually performing them well – a difference that disclosure-based studies often struggle to capture.

## 2.2 Dimensional perspectives: ESG

When researchers disaggregate ESG into constituent dimensions, patterns become more complex but potentially more interpretable. Environmental disclosure quality has received particular attention following the growing concerns about climate change and regulatory initiatives. Khan et al. (2016) demonstrated that firms disclosing material environmental information outperformed those with immaterial or generic disclosures, suggesting that relevance matters more than the volume of disclosures. Matsumura et al. (2014) found that carbon emissions disclosure was associated with lower firm valuations, but carbon emissions reductions were associated with higher valuations – disclosure alone proved insufficient without corresponding performance improvements. Pedron et al. (2021) extended this by showing that the effects of environmental disclosure on market value depend on investor environmental awareness and regulatory stringency in the firm's jurisdiction. In Sri Lankan contexts, specifically, Nimanthi and Priyadarshanie (2021) documented positive relationships between environmental disclosure practices and firm performance; however, their cross-sectional design limited causal inference.

Social disclosure research has evolved from early CSR studies, which focused on philanthropic activities, toward a more systematic examination of workforce practices, supply chain management, and community impact. Qiu et al. (2016) found that combined environmental and social disclosures linked positively with financial performance in the UK firms, with social dimensions showing stronger associations than environmental ones. This pattern was also observed in Sebastianelli et al. (2025), who analysed corporate environmental and social disclosure across multiple countries and found that social practices demonstrated clearer financial benefits. One interpretation suggests that social investments generate more immediate operational returns through enhanced workforce productivity, talent attraction, and customer loyalty, whereas environmental investments require longer time horizons to yield financial returns (Narula et al., 2024). Alternatively, social practices may be less susceptible to greenwashing scepticism, making their signals more credible to stakeholders.

Governance disclosure arguably has the longest research tradition, predating the modern ESG framework through corporate governance studies that examine board structures, ownership patterns, and control mechanisms. La Porta et al. (2000) demonstrated that investor protection and the quality of governance were root causes influencing the development of the market and the valuation of firms. Governance can be viewed in the ESG setting as the facilitating framework for environmental and social programs. Robust boards and management frameworks, hypothetically, help enforce sustainability undertakings in reality (Vickneswaran, 2025). Ratnayake and Rajakulanajagam (2022) analysed Sri Lankan listed companies and found positive correlations between the quality of governance and the transparency of the company, indicating that governance may serve as a credibility signal to some extent. However, the effects of governance are difficult to separate because governance institutions influence not only the decision to report ESG information but also the practices being reported (Eccles et al., 2014). This may lead to endogeneity problems, which many studies have recognised, but few have sufficiently studied.

## *2.3 Market valuation perspectives*

Beyond accounting returns, researchers have examined how the quality of ESG disclosure influences market valuations, providing insights into investor perceptions and expectations. Qiyan (2024) explored the multidimensional effects of ESG on corporate valuation, arguing that ESG functions through three channels: meeting investor expectations for responsible practices, mitigating long-term operational and reputational risks, and signalling management quality and strategic capability. Wen et al. (2022) demonstrated that ESG disclosure quality particularly mattered for institutional investors, who increasingly incorporate sustainability factors into investment decisions and possess resources to analyse detailed disclosures. Khandelwal et al. (2023) took an asset-pricing approach, finding that ESG disclosure systematically influenced expected returns and risk premiums, suggesting markets price sustainability information rather than treating it as irrelevant noise.

It is also crucial to consider the temporal dynamics of ESG effects on valuation. Wedajo et al. (2024) utilised generalised cross-lagged panel models with Chinese listed companies to tease out which factor came first, whether the ESG scores or firm value changes. They found that there were indeed bidirectional associations, with ESG improvements leading to subsequent value appreciation, as well as higher-valued firms investing more in ESG initiatives – a virtuous cycle for high performers, potentially widening the gap for laggards. Zhang et al. (2025) considered market competitiveness as a moderating influence and reported that the impact of ESG performance on firm value became stronger in more competitive markets, where differentiation becomes imperative. Such dynamic perspectives complicate the static cross-sectional analyses that dominate the literature, implying that the effects of ESG disclosure unfold gradually over time rather than manifesting immediately.

## *2.4 Theoretical frameworks*

Various theoretical lenses have been employed to explain the effect of ESG disclosure, with each focusing on distinct mechanisms. The theory of stakeholders suggests that companies that engage with various stakeholder groups beyond shareholders tend to exhibit better long-term performance, due to increased legitimacy, reduced conflicts, and improved access to resources (Wang, 2024; Freeman, 1984). According to this perspective, ESG reporting serves as a stakeholder management mechanism, indicating responsibility to broader constituencies and facilitating win-win relationships. The agency theory presents an alternative focus and considers ESG disclosure to be a method that can minimise information asymmetries between managers and investors, thereby reducing monitoring costs and principal-agent conflicts (Salman et al., 2024). Strong governance disclosure particularly aligns with agency perspectives by demonstrating management accountability and board effectiveness.

Legitimacy theory provides another angle, suggesting organisations pursue ESG disclosure to maintain congruence between social values and organisational activities, securing the implicit 'license to operate' granted by society (Deegan, 2002). When the societal requirements in terms of environmental protection or labour standards change, the companies react by increasing disclosure to ensure that their legitimacy is preserved. Resource-based theory shifts the focus to competitive advantage, and better ESG practices are considered superior, rare, and hard-to-imitate resources that create long-term

performance benefits (Barney, 1991). However, it is essential to note that various theoretical lenses may not conflict with each other, as ESG disclosure is likely to work through multiple channels simultaneously. Nevertheless, it is observed that research typically relies on an explanation that employs a single dominant theoretical perspective, which may oversimplify the complex realities of ESG disclosures.

### *2.5 Measurement and methodological considerations*

One of the ongoing issues concerning ESG research is the choice of measurements (Zahra et al., 2025), which, in essence, determines their findings. Researchers must decide whether to use commercial providers of proprietary ESG ratings (e.g., MSCI, Sustainalytics, Refinitiv) or create their own indexes using disclosed material. Commercial ratings are convenient and comparable, but they lack transparency in their construction methodology and exhibit surprisingly poor inter-rater correlation (Berg et al., 2022). Custom indices are transparent and can be designed to suit specific research situations, but they will involve subjective judgments regarding the choice of items, weighting, and scoring that affect outcomes.

Research is also complicated by the fact that ESG disclosure, ESG performance, and ESG outcomes are distinct terms that can be difficult to interpret (Huang, 2021). The difference between disclosure and performance is the gap between what firms say and what they do; outcomes refer to the results achieved. The majority of research focuses on disclosure, which is typically represented in reports; however, disclosure can differ from reality due to selective reporting or greenwashing (Narula et al., 2024). Research, including third-party verification or objective performance data (actual emissions, certified labour practices), is still found to be rather uncommon, especially in emerging market settings with limited internal verification infrastructure available. In Sri Lankan studies in particular, there have been some studies on sustainability reporting (mostly on the power and energy sector), with Tilakasiri and Wanninayake (2023) conducting research on this, and Weerarathna et al. (2021) examining the overall patterns of disclosures by listed companies, but the measurement of the quality of disclosure is not yet fully developed.

In summary, three interconnected gaps emerge from this literature. First, most studies examine individual ESG dimensions rather than treating ESG elements as an integrated system. This fragmentation prevents understanding whether dimensions operate synergistically, independently, or even antagonistically. A firm might excel in governance while underperforming environmentally or prioritise social initiatives at the expense of environmental investments – patterns that are invisible in single-dimensional studies. Second, performance conceptualisations characteristically focus on either accounting returns or market valuations, but not both. However, these indicators measure two entirely different aspects of firm performance: historic operational productivity is reflected in accounting returns, and future-oriented investor expectations are expressed in market valuations. ESG disclosure may have different impacts, as it serves more as a pointer to forthcoming strategic orientation than an engine of current operational benefits. Third, the situations in emerging markets are underrepresented compared to those in developed markets, although there are institutional differences that presumably mitigate the ESG impact. The regulatory frameworks, investor complexity, and activism behaviours of Sri Lankan companies are strikingly different from those of most Western settings, where a majority of ESG studies focus. It remains empirically unclear whether

the results of developed markets can be applied to emerging economies. Certain studies suggest that the impact of ESG on emerging markets may be weaker due to stakeholders being less likely to pressure or enforce it (Qureshi et al., 2025). In contrast, other studies argue that information environments in emerging markets are already opaque, making the utility of ESG disclosure especially strong.

We address these gaps by constructing dimensional disclosure quality indices for ESG aspects using GRI 2023 standards, alongside a composite index, then examining their relationships with multiple performance measures spanning both lag indicators (ROA, ROE, ROS) and lead indicators (market value) using Sri Lankan listed company data. This design enables us to assess whether ESG dimensions function as an integrated system or as independent constructs, whether disclosure effects manifest differently in retrospective versus prospective performance measures, and whether patterns observed in developed markets replicate in the context of a South Asian emerging economy.

## 3 Methodology

We employ a quantitative panel data design to examine relationships between ESG reporting quality and firm performance indicators across multiple dimensions. The sampling strategy prioritises market significance over random selection: we identified the top 60 companies listed on the Colombo Stock Exchange based on market capitalisation, drawn from a population of 304 listed firms. This purposive approach has two advantages. First, larger firms tend to face greater institutional pressures for ESG disclosure and are therefore more likely to have developed reporting practices worth assessing. Second, these firms collectively account for significant market activity and investor interest, which enhances the practical relevance of the findings, even while the claims concerning statistical generalisability are limited to smaller listed companies (Weerarathna et al., 2021). As indicated in Table 1, the sample is spread across 13 industries, ranging from banking and finance (40% of the sample) through manufacturing, telecommunications, and plantation sectors. The width of this representation suggests that the findings should not be affected by the idiosyncrasies of any particular industry, even though sectoral differences in ESG materiality remain a relevant consideration.

Data collection covers five years from 2019/2020 through 2023/2024, though one potentially confounding factor warrants acknowledgement: the COVID-19 pandemic intersects with this period, introducing operational disruptions and reporting irregularities that may affect both ESG disclosure practices and performance metrics. We extracted all financial data and sustainability indicators from publicly available annual reports, resulting in 300 firm-year observations. This reliance on disclosed information rather than verified third-party data creates the familiar tension in ESG research between measurement feasibility and construct validity, i.e., we capture what firms report, not necessarily what they do. However, in the absence of systematic, independent auditing of ESG practices, disclosure analysis remains the standard approach.

Our dependent variables span what we term lag and lead performance indicators, though these labels require clarification. Return on assets (ROA), return on equity (ROE), and Return on Sales (ROS) are lagging indicators of how well a company has been run and how much money it has made in the past. These backwards-looking measures represent actual financial performance, but they say little about future expectations or

strategic positioning. Market value is an example of a lead indicator, as it encompasses investors' expectations of future cash flows, growth prospects, and risk profiles. It has yet to be determined whether market valuations truly 'lead' performance or simply reflect different information sets, but the theoretical distinction between retrospective accounting measures and prospective market measures is useful. We control for firm size using total assets (TA), acknowledging that larger organisations typically possess greater resources for ESG reporting infrastructure and face different stakeholder pressures than smaller firms.

**Table 1** Sample sector classification

| *Industry categories* | *Number of sample companies* | *Percentage of total sample* |
|---|---|---|
| Bank finance and insurance | 24 | 40% |
| Beverage food and tobacco | 7 | 11.5% |
| Construction and engineering | 1 | 1.6% |
| Diversified holdings | 9 | 15% |
| Healthcare | 2 | 3.3% |
| Hotels and travel | 3 | 5% |
| Land and property | 2 | 3.3% |
| Manufacturing | 4 | 5.5% |
| Oil palm | 2 | 3.3% |
| Plantations | 1 | 1.6% |
| Power and energy | 2 | 3.3% |
| Telecommunication | 2 | 3.3% |
| Trading | 2 | 3.3% |
| Total | 60 | 100% |

The independent variables require more elaborate explanation, given their centrality to research design. We constructed an ESG Composite Index (ESGI) based on the 2023 GRI Standards, selecting 39 disclosure items distributed across three dimensions: eight environmental items, 18 social items, and 13 governance items. The item selection process identified those GRI indicators most relevant to listed companies across various sectors, and disclosure requirements were prioritised for which operationalisable criteria could be clearly established. Each item was coded in a binary fashion: 1 if disclosed with substantive content, and 0 if absent or mentioned only superficially. Such a binary approach obviously sacrifices nuance-it treats minimal disclosure identically with comprehensive treatment-but has significant advantages compared to subjective quality ratings in terms of reliability and replicability. Two researchers independently coded all disclosures, with an inter-rater reliability of 0.89 (Cohen's kappa), and disagreements were resolved through discussion.

We calculated the ESGI for each firm-year observation as: ESGI = n/k, where n represents the number of disclosed indicators and k the total applicable indicators (39). This produces a continuous variable ranging from 0 to 1, with higher scores indicating more comprehensive disclosure coverage. Separate dimensional indices – environmental index (EI), social index (SI), governance index (GI) – follow identical logic using their respective item subsets (8, 18, and 13 items). One limitation merits emphasis: this approach assumes equal weighting across items, treating carbon emissions disclosure

identically to board diversity reporting. Materiality-weighted indices would better reflect stakeholder priorities but require subjective judgment about relative importance that varies by industry and context. We opted for equal weighting to maintain transparency and replicability, acknowledging this as a simplification.

Panel data analysis allows us to utilise both cross-sectional variation among firms and temporal variation within firms over a five-year period, resulting in efficiency improvements relative to solely cross-sectional or time-series methodologies. The method mitigates certain endogeneity issues by accounting for time-invariant firm characteristics that could be associated with both ESG disclosure and performance; nonetheless, unobserved time-varying confounders continue to pose challenges. We had to choose between fixed effects models (FEM) and random effects models (REM), which is what we usually do. The Hausman test yielded statistically significant results ($p < 0.05$), indicating that firm-specific effects are correlated with our ESG indices, thereby violating the random effects assumption of no correlation between individual effects and regressors. Consequently, we employed fixed effects specifications for all hypothesis tests, effectively differencing out time-invariant heterogeneity but at the cost of losing information from firms with minimal within-period variation in ESG disclosure.

The regression specification takes the form: $Y_{it} = \beta_0 + \beta_1 EI_{it} + \beta_2 SI_{it} + \beta_3 GI_{it} + \beta_4 TA_{it} + \alpha_i + \varepsilon_{it}$, where Y represents performance measures (ROA, ROE, ROS, MV), subscripts i and t index firms and years, respectively, $\alpha_i$ captures firm fixed effects, and $\varepsilon_{it}$ represents the idiosyncratic error term. We estimated separate regressions for each performance measure, examining how individual ESG dimensions (EI, SI, GI) relate to each outcome. Additionally, we tested composite ESGI effects by replacing the three-dimensional indices with the aggregate measure: $Y_{it} = \beta_0 + \beta_1 ESGI_{it} + \beta_2 TA_{it} + \alpha_i + \varepsilon_{it}$. This dual approach – dimensional and composite – allows us to assess whether ESG operates as an integrated system or whether individual components demonstrate independent effects.

Standard diagnostic checks addressed potential specification issues. Durbin-Watson statistics, ranging from 1.87 to 2.07 across models, suggest minimal serial correlation in the residuals. Variance inflation factors (VIF) for all independent variables remained below 2.5, indicating that multicollinearity does not significantly increase standard errors. However, the small correlations between ESG dimensions (0.25–0.30) do suggest some conceptual overlap, as expected. Heteroskedasticity-robust standard errors were employed throughout to ensure valid inference despite potential non-constant error variance across observations. One specification concern we cannot fully address involves reverse causality: better-performing firms may invest more in ESG reporting rather than ESG reporting driving performance. Fixed effects help with this by controlling for performance trends that do not change over time. Our lead/lag indicator distinction is also helpful in theory, but we still cannot make definitive causal claims without experimental or quasi-experimental identification.

## 4 Analysis

Table 2 illustrates the distribution of variables across 300 firm-year observations. The average disclosure scores reveal an interesting pattern: companies are most open about social issues (SI = 0.75), followed by governance (GI = 0.64), and then environmental issues (EI = 0.59). This pattern could be caused by several factors. It might be easier to

implement social reporting, such as employee programs, community initiatives, and diversity statistics, than it is to implement environmental metrics, which require technical measurement systems for factors like emissions, energy use, or waste streams. In Sri Lanka, on the other hand, stakeholder pressure may put more emphasis on labour practices and community relations than on environmental stewardship. However, without direct stakeholder surveys, this is just a guess. The positive skewness in environmental disclosure (0.95) indicates that most companies report at lower levels, while a small number of companies report at much higher levels. On the other hand, the distributions for social and governance are more balanced. Firm size, as indicated by logged total asset (mean TA = 1.11), exhibits moderate dispersion, suggesting that our sample encompasses various organisational scales, even though it is derived from the largest listed companies.

Performance indicators reveal significant differences. Market value has the highest mean (MV = 3.76) and considerable variation. This indicates that there are genuine differences in how investors value assets and that market metrics are sensitive to factors beyond the company's control, such as economic conditions, sector trends, and speculative dynamics. The average return on sales is 2.93, but this figure varies significantly. This means that some companies have high operational margins, while others break even or incur losses. ROA and ROE have lower means (0.16 and 0.75, respectively) and appear to be positively skewed, indicating that most companies generate small profits, with a few that do very well. The kurtosis values close to zero for most variables indicate distributions that are roughly normal and do not have any extreme outliers. However, this could be because we only examined established listed companies and not the entire population, which would have included distressed companies or new entrants.

**Table 2** Descriptive statistics

| | *EI* | *GI* | *SI* | *TA* | *ROA* | *ROE* | *ROS* | *MV* |
|---|---|---|---|---|---|---|---|---|
| Mean | 0.59 | 0.64 | 0.75 | 1.11 | 0.16 | 0.75 | 2.93 | 3.76 |
| Median | 0.63 | 0.62 | 0.70 | 1.51 | 0.05 | 0.11 | 0.14 | 2.06 |
| Skewness | 0.9518 | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Kurtosis | 0.0004 | 0.0018 | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Observations | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |

Table 3 presents bivariate correlations that merit attention before interpreting regression results. The ESG dimensional indices demonstrate modest positive intercorrelations (ranging from 0.10 to 0.30), suggesting conceptual overlap but not redundancy, i.e., firms that are strong in one ESG dimension tend toward strength in others, although this relationship is far from perfect. This moderate correlation supports treating dimensions as related but distinct constructs rather than mere reflections of a single underlying 'ESG propensity'. total asset show minimal correlation with ESG indices ($|r| < 0.02$), indicating that firm size does not systematically predict disclosure quality in this sample, contrary to the common assumption that larger organisations necessarily report more comprehensively.

The performance indicator correlations prove more complex. ROA, ROE, and ROS intercorrelate moderately ($r = 0.40$ to 0.60), as expected for profitability measures derived from related accounting quantities. However, the imperfect correlations indicate that they capture somewhat different aspects of performance. Market value, by contrast, correlates

weakly with accounting returns (|r| < 0.02 for ROA and ROE) but more substantially with ROS (r = 0.30). This divergence between market-based and accounting-based measures reinforces our conceptual distinction between lead and lag indicators, as they respond to different information sets or time frames. The ESG-performance correlations remain uniformly weak (|r| < 0.05), suggesting that simple bivariate relationships reveal little about the effects of ESG, necessitating multivariate analysis that controls for firm characteristics and exploits the panel structure.

**Table 3** Correlation matrix

| *Correlation t-statistic* | *EI* | *SI* | *GI* | *TA* | *ROA* | *ROE* | *ROS* | *MV* |
|---|---|---|---|---|---|---|---|---|
| EI | 1 | | | | | | | |
| SI | 0.252 | 1 | | | | | | |
| GI | 0.099 | 0.298 | 1 | | | | | |
| TA | 0.019 | 0.005 | –0.017 | 1 | | | | |
| ROA | 0.040 | 0.044 | –0.034 | –0.031 | 1 | | | |
| ROE | 0.040 | 0.044 | –0.039 | –0.022 | 0.597 | 1 | | |
| ROS | 0.040 | 0.029 | –0.036 | –0.035 | 0.454 | 0.406 | 1 | |
| MV | –0.021 | 0.044 | 0.019 | 0.078 | 0.015 | –0.016 | 0.304 | 1 |

Table 4 presents fixed effects regression results examining how individual ESG dimensions relate to each performance measure, controlling for firm size. The patterns diverge substantially across both ESG dimensions and performance indicators, resisting any simple characterisation of 'ESG works' or 'ESG does not work'. Environmental disclosure demonstrates a statistically significant positive association with market value ($\beta = 0.312$, $p < 0.001$) but shows no significant relationships with ROA, ROE, or ROS. One reading suggests that investors price environmental commitments as signals of long-term risk management or strategic positioning, even in the absence of immediate financial impacts. Alternatively, this could reflect sector composition – if environmentally intensive industries face higher valuations for disclosure given their material risks, the effect would appear in market metrics but not necessarily in current profitability. The absence of environmental effects on accounting returns, however, challenges narratives that environmental management directly improves operational efficiency or cost structures, at least within the timeframes and contexts examined here.

Social disclosure quality shows the most consistent pattern, with significant positive associations across all four performance measures: ROA ($\beta = 0.024$, $p < 0.05$), ROE ($\beta = 0.039$, $p < 0.05$), ROS ($\beta = 0.042$, $p < 0.05$), and market value ($\beta = 0.287$, $p < 0.05$). This consistency suggests that social practices- or at least social reporting-relates to both operational outcomes and investor perceptions. Whether this reflects causal mechanisms (workforce practices improving productivity, community relations reducing operational disruptions, diversity initiatives enhancing innovation) or selection effects (well-managed firms performing better and also reporting more comprehensively on social dimensions) remains ambiguous within our design. The relatively large coefficients for social disclosure, compared to other dimensions, suggest substantive practical significance beyond statistical detectability.

While governance disclosure has significant positive associations with ROA ($\beta = 0.018$, $p < 0.05$), ROE ($\beta = 0.027$, $p < 0.05$), and market value ($\beta = 0.224$, $p < 0.01$),

the association with ROS is not significant. This divergence in return-on-sales vis-à-vis other profitability measures may reflect governance mechanisms operating more through capital efficiency or asset management than through margin improvement. That is, strong boards and control systems may enhance strategic decision-making on where to deploy capital or reduce agency costs that may manifest in asset-based returns, such as ROA and ROE, without necessarily tightening operational cost structures, as captured by sales margins reflected in ROS. Alternatively, the ROS null finding may be spurious given the small sample size and multiple testing concerns, although we report results without post-hoc rationalisation.

Firm size (total asset) demonstrates limited explanatory power across most specifications, achieving statistical significance only for market value ($\beta = 0.105$, $p < 0.05$). The minimal size effects on accounting returns suggest that scale advantages or disadvantages roughly balance within our sample of large listed firms, whereas market valuations apparently incorporate firm size as a relevant factor, possibly reflecting liquidity preferences or institutional investor accessibility. The $R^2$ values diverge dramatically: models explaining market value achieve $R^2 = 0.72$, indicating ESG dimensions and firm size collectively account for substantial variation, whereas models for accounting returns achieve $R^2$ values around 0.06, suggesting these lag indicators respond primarily to factors outside our specification – operational decisions, competitive dynamics, macroeconomic conditions – rather than disclosure practices.

**Table 4** Consolidated panel regression results

| *Variable* | *ROA* | *ROE* | *ROS* | *MV* |
|---|---|---|---|---|
| Environmental index (EI) | 0.012<br>(0.262) | 0.021<br>(0.257) | 0.028<br>(0.250) | 0.312***<br>(0.000) |
| Social index (SI) | 0.024**<br>(0.017) | 0.039**<br>(0.017) | 0.042**<br>(0.019) | 0.287**<br>(0.019) |
| Governance index (GI) | 0.018**<br>(0.048) | 0.027**<br>(0.047) | 0.014<br>(0.282) | 0.224**<br>(0.006) |
| Composite ESG index (ESG1) | 0.009<br>(0.487) | 0.015<br>(0.480) | 0.117**<br>(0.001) | 0.265***<br>(0.000) |
| Firm size (TA) | 0.009<br>(0.125) | 0.010<br>(0.139) | 0.013<br>(0.104) | 0.105**<br>(0.035) |
| Constant | 0.032<br>(0.374) | 0.041<br>(0.270) | 0.053<br>(0.214) | 0.067<br>(0.302) |
| $R^2$ | 0.063 | 0.065 | 0.064 | 0.719 |
| Durbin-Watson | 1.91 | 1.87 | 2.01 | 2.07 |

Notes: ***Highly significant $p < 0.01$. **Moderately significant $p < 0.05$.

When we aggregate individual dimensions into the composite ESGI measure, the results shift in ways that merit interpretation. The composite index demonstrates significant positive associations with ROS ($\beta = 0.117$, $p < 0.01$) and market value ($\beta = 0.265$, $p < 0.001$) but not with ROA or ROE. This pattern differs from dimensional results, where social and governance individually correlated with ROA and ROE. The divergence could indicate that aggregate ESG reporting functions differently than its components, perhaps signalling integrated strategic commitment rather than specific operational practices. Alternatively, aggregation may introduce measurement error by combining

dimensions with offsetting effects, attenuating relationships that appear when examined separately. The strong composite effect on ROS suggests that holistic ESG quality is particularly related to operational efficiency and margin management, possibly through reputation effects, which enhance pricing power or stakeholder relationships, and reduce operational friction.

The distinction between lead and lag performance indicators proves consequential for interpretation. Market value, our primary measure that incorporates investor expectations about future performance, correlates significantly with ESG disclosure, both individually and in relation to composite ESG quality. This consistent pattern suggests that, regardless of immediate operational impacts, ESG disclosure influences how investors value firms, whether through perceived risk mitigation, stakeholder legitimacy, strategic positioning, or management quality signals. Accounting-based lag indicators, by contrast, show selective responses: social and governance disclosure correlate with profitability measures, while environmental disclosure does not. One reading suggests that environmental commitments require longer time horizons to materialise in financial outcomes than our five-year panel captures, whereas social and governance practices generate more proximate operational effects. Alternatively, environmental disclosure may face greater credibility challenges – investors price the signal into market values, but actual operational benefits fail to materialise, at least as captured by current accounting metrics.

The composite ESGI's strong association with ROS but not ROA or ROE introduces another interpretive puzzle. Return on sales reflects operational margin efficiency – revenue generation relative to costs – whereas ROA and ROE incorporate capital structure and asset management. If aggregate ESG quality primarily signals operational capability or brand strength, it should appear most clearly in margin measures like ROS. ROA and ROE, being influenced by capital intensity, leverage decisions, and asset portfolios that may evolve slowly regardless of ESG reporting, could prove less responsive to disclosure quality within limited timeframes. These patterns remain tentative interpretations pending replication in other contexts and investigation of potential mechanisms through which different ESG dimensions might influence distinct performance aspects.

## 5 Conclusions

Given the biases in extant literature towards individual elements of ESG disclosures and their effects primarily on the financial performance of firms, the present study focuses on both composite and individual ESG reporting quality effects on both lag performance indicators (ROA, ROE, ROS) and lead performance indicators (market value). The study draws on panel data from 60 listed companies spanning five years (2019/2020 to 2023/2024), resulting in the development of GRI-based ESG disclosure indices and the examination of their impact on both lag and lead performance of the selected firms. We find that the reporting quality of the composite ESG index associates most strongly with ROS and market value rather than with return-on-assets or return-on-equity measures. These findings suggest that composite ESG disclosure primarily affects firm performance through operational efficiencies, as signalled by ROS, and long-term investor perceptions are reflected in market value. Additionally, its impact on direct profitability, as indicated by ROA and ROE, is marginal at best. These findings somewhat support Kalyani and

Mondal's (2024, p.107) suggestion that "the results show that business sustainability does not significantly affect financial performance when looked at as a whole". However, our results offer a more nuanced view, suggesting that while ESG reporting quality does not translate into immediate profitability-based outcomes, it is associated with broader dimensions of firm performance.

When focusing on the individual ESG disclosure reporting quality, environmental disclosure quality exhibits a significant positive association with market value, but not with accounting-based profitability measures. These findings suggest that investors appear to price environmental commitments into valuations, even in the absence of immediate operational returns. As Pedron et al. (2021, p.17) assert, "environmental initiatives' effect would be a long-term affair. As a consequence, it might not be captured in the financial data of firms for a short period." In contrast, social disclosure shows the most consistent pattern, being significantly associated with all the performance indicators examined, which implies either that social practices produce concrete operational benefits or that well-managed firms are systematically good at both social reporting and performance. Such evidence corroborates that of Narula et al. (2024), states that social practices are closely associated with immediate improvements in employee motivation, workforce productivity, and stakeholder trust. Governance disclosure has selective effects: it is significant for ROA, ROE, and market value, but not for ROS, which may indicate that governance mechanisms operate more through capital efficiency than by enhancing operational margins. These dimensional differences carry implications for how we conceptualise ESG disclosure effects. Taken together, the divergence between the market value impact of environmental disclosure and its absent profitability effects could reflect a temporal misalignment – environmental investments requiring longer horizons to materialise financially than our five-year panel captures. Alternatively, investors might reward environmental disclosure symbolically while actual operational benefits fail to materialise, a pattern consistent with greenwashing concerns documented elsewhere. The correlations between social disclosure and all performance measures suggest either genuine operational mechanisms (workforce productivity, stakeholder relations, and reputational capital) or selection effects, whereby capable management manifests in both strong social practices and superior performance.

The findings of this study contribute to the literature in several ways. From a methodological standpoint, we address the persistent gap in the literature by simultaneously examining all three ESG dimensions, without introducing selection biases, thereby enabling an assessment of whether ESG elements function synergistically or independently (Khan, 2022). The findings resulted in a clear distinction between the outcomes of composite ESG reporting quality and those of individual ESG reporting quality. However, it's worth noting that whether this reflects genuine conceptual distinctiveness or simply variations in measurement precision or materiality across dimensions is uncertain. Moreover, the construction of disclosure quality indices based on GRI 2023 standards provides a transparent operationalisation that future research can replicate, critique, or refine, rather than relying on proprietary ESG ratings, whose construction methodologies remain opaque and whose inter-rater agreement is questionable.

From a firm performance perspective, the distinction between lag and lead performance indicators is a key aspect of this study (cf. Zahra et al., 2025; Kalyani and Mondal, 2024). We find that market value, which encompasses investors' expectations for the future, consistently responds to ESG disclosure across all areas. Accounting

returns, which indicate a business's past performance, suggest that people are more likely to respond in social and governance areas. This difference supports the idea that ESG disclosure works, in part, through signalling mechanisms, which inform investors about strategic positioning and management quality, in addition to any immediate operational effects (Arvidsson and Dumay, 2022). If ESG primarily affected current profitability through cost reductions or efficiency gains, we would expect consistent effects across both market-based and accounting-based metrics. The selective pattern instead suggests temporal dynamics or informational asymmetries whereby markets price ESG signals before – or regardless of whether – they materialise in accounting outcomes.

From a developing country context, ESG research examining Sri Lankan companies contributes to the body of evidence from an emerging market where institutional settings, stakeholder pressures, and regulatory frameworks differ significantly from those in developed economies that dominate ESG research (Qureshi et al., 2025). The patterns we observe, particularly the strong and consistent effects of social disclosure and the market-focused effects of environmental disclosure, may be attributed to Sri Lankan factors. These include labour-intensive industries where how workers perform their jobs is very important, new environmental regulations where disclosure demonstrates a voluntary commitment rather than compliance, and concentrated ownership structures where governance transparency is especially crucial for protecting minority investors. Furthermore, the sector-specific patterns noted in our analysis – governance matters more in financial services, while environmental disclosure is more prominent in manufacturing and plantations – suggest that institutional and industry contexts substantially moderate ESG effects, complicating any universal prescriptions. However, whether these findings generalise beyond Sri Lanka or even beyond our sample of large listed companies remains an empirical question requiring replication across contexts.

Our findings offer several practical implications, though translating statistical associations into strategic guidance requires caution. Different ESG dimensions appear to operate over different time horizons and through distinct channels. Environmental disclosure primarily functions as a long-term signal to investors rather than generating immediate operational gains, whereas social and governance practices are more closely associated with operational performance and may yield quicker returns. At the same time, correlation should not be interpreted as causation, as stronger management quality may underpin both ESG disclosure and firm performance. For managers, the positive association between composite ESG disclosure, operational efficiency (ROS), and market value nevertheless suggests potential value in integrated reporting approaches that signal a holistic ESG commitment rather than a narrow focus on individual dimensions. For investors, these results suggest that ESG information aligns with different performance objectives: social and governance disclosures appear more relevant to current profitability, while environmental disclosures are more informative for long-term value creation. From a policy perspective, the findings highlight the importance of disclosure quality over mere compliance and caution against one-size-fits-all mandates, given sector-specific differences in ESG materiality.

Several limitations limit the interpretation of our findings. The sample consists of 60 large listed firms selected by market capitalisation, which limits generalisability to smaller or privately held organisations that face different institutional and investor pressures. The five-year period studied (2019/2020–2023/2024) overlaps with the COVID-19 disruption, potentially affecting both ESG disclosure and performance in ways that are difficult to separate from underlying relationships, particularly for

environmental investments whose benefits may unfold over longer horizons. Methodologically, reliance on disclosed information raises the well-known disclosure – performance gap, as reported ESG activities may not fully reflect actual practices (Arvidsson and Dumay, 2022), particularly in emerging market contexts where independent verification is limited. Binary disclosure coding further reduces nuance by treating minimal and extensive disclosures equivalently. While fixed-effects panel models address time-invariant heterogeneity, they cannot fully resolve reverse causality or time-varying confounding factors that may jointly influence ESG disclosure and firm performance.

Future research could effectively expand our work in various directions. Comparative studies across various emerging markets would elucidate whether our findings pertain to Sri Lankan particularities or are applicable to a broader range of institutional contexts exhibiting similar traits. Longer time series extending beyond five years would more effectively capture lagged effects and dynamic relationships, potentially elucidating whether the absent profitability effects of environmental disclosure eventually manifest over time or remain merely symbolic. Qualitative research exploring managerial motivations for ESG disclosure and stakeholder perceptions of reporting quality would elucidate the mechanisms by which disclosure may impact performance beyond the statistical correlations we identify. Examining moderating factors – such as firm size, ownership structure, industry characteristics, and competitive intensity – would enhance comprehension of the boundary conditions that restrict the generalisability of ESG effects. Finally, examining non-financial outcomes, such as innovation capacity, workforce productivity, supply chain resilience, or stakeholder satisfaction, would provide a more comprehensive picture of ESG value beyond just financial metrics. This could show benefits that are not visible in accounting or market data.

In conclusion, this study contributes to ongoing debates about whether ESG reporting quality creates value, signals value, or merely consumes resources without generating tangible returns. Our findings suggest a complex reality with composite ESG reporting quality and its individual ESG dimensions showing varying effects on firm lag and lead performance indicators. Perhaps most importantly, the divergence between lead and lag indicators suggests that ESG disclosure operates partly through informational mechanisms distinct from immediate operational impacts, with investors pricing ESG commitments into valuations before, after, or regardless of whether they materialise in financial returns. Whether this reflects efficient market anticipation of long-term benefits or investor preferences disconnected from financial fundamentals remains an open question requiring further investigation. For firms, investors, and policymakers navigating the ESG terrain, our findings suggest the importance of dimensional thinking, temporal patience, and recognising that ESG disclosure constitutes neither a panacea nor irrelevance, but rather a component of organisational strategy whose effects manifest selectively and contextually.

## Declarations

The paper did not receive any funding from any university or professional bodies.

All authors declare that they have no conflicts of interest.

## References

Arvidsson, S. and Dumay, J. (2022) 'Corporate ESG reporting quantity, quality and performance: where to now for environmental policy and practice?', *Business Strategy and the Environment*, Vol. 31, No. 3, pp.1091–1110, https://doi.org/10.1002/bse.2937.

Aydogmus, M., Gulay, G. and Ergun, K. (2022) 'Impact of ESG performance on firm value and profitability', *Borsa Istanbul Review*, Vol. 22, No. 2, pp.S119–S127, https://doi.org/10.1016/j.bir.2022.11.006.

Baier, P., Berninger, M. and Kiesel, F. (2020) 'Environmental, social and governance reporting in annual reports: a textual analysis', *Financial Markets, Institutions & Instruments*, Vol. 29, No. 3, pp.93–118, https://doi.org/10.1111/fmii.12132.

Barney, J. (1991) 'Firm resources and sustained competitive advantage', *Journal of Management*, Vol. 17, No. 1, pp.99–120, https://doi.org/10.1177/014920639101700108.

Bednárová, M. (2025) 'ESG reporting and communication', in Bednárová, M. and Soratana, K. (Eds.): *Environmental, Social, and Governance (ESG) Investment and Reporting*, pp.175–202, Springer, Cham, https://doi.org/10.1007/978-3-031-84235-1_8.

Berg, F., Koelbel, J.F. and Rigobon, R. (2022) 'Aggregate confusion: the divergence of ESG ratings', *Review of Finance*, Vol. 26, No. 6, pp.1315–1344, https://doi.org/10.1093/rof/rfac033.

Chau, L., Anh, L. and Duc, V. (2025) 'Valuing ESG: how financial markets respond to corporate sustainability', *International Business Review*, Vol. 34, No. 3, p.102418, https://doi.org/10.1016/j.ibusrev.2025.102418.

Chen, L., Feldmann, A. and Tang, O. (2015) 'The relationship between disclosures of corporate social performance and financial performance: Evidences from GRI reports in manufacturing industry', *International Journal of Production Economics*, Vol. 170, No. B, pp.445–456, https://doi.org/10.1016/j.ijpe.2015.04.004.

Deegan, C. (2002) 'Introduction: the legitimising effect of social and environmental disclosures – a theoretical foundation', *Accounting, Auditing & Accountability Journal*, Vol. 15, No. 3, pp.282–311, https://doi.org/10.1108/09513570210435852.

Detre, J.D. and Gunderson, M.A. (2011) 'The triple bottom line: what is the impact on returns to agribusiness?', *International Food and Agribusiness Management Review*, Vol. 14, No. 4, pp.1–22, https://doi.org/10.22004/ag.econ.117608.

Eccles, R. G., Ioannou, I. and Serafeim, G. (2014) 'The impact of corporate sustainability on organizational processes and performance', *Management Science*, Vol. 60, No. 11, pp.2381–2617, https://doi.org/10.1287/mnsc.2014.1984.

Elmghaamez, I.K., Nwachukwu, J. and Ntim, C.G. (2024) 'ESG disclosure and financial performance of multinational enterprises: the moderating effect of board standing committees', *International Journal of Finance & Economics*, Vol. 29, No. 3, pp.3593–3638, https://doi.org/10.1002/ijfe.2846.

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

Giannopoulos, G., Fagernes, R.V.K., Elmarzouky, M. and Hossain, K.A.B.M (2022) 'The ESG disclosure and the financial performance of Norwegian listed firms', *Journal of Risk and Financial Management*, Vol. 15, No. 6, p.237, https://doi.org/10.3390/jrfm15060237.

Global Reporting Initiative (GRI) (2020) *GRI Standards* [online] https://www.globalreporting.org/standards/ (accessed 10 October 2025).

Heitzman, S. and Huang, M. (2019) 'Internal information quality and the sensitivity of investment to market prices and accounting profits', *Contemporary Accounting Research*, Vol. 36, No. 3, pp.1699–1723, https://doi.org/10.1111/1911-3846.12468.

Hu, P., Li, X., Li, N., Wang, Y. and Wan, D.D. (2024) 'Peeking into corporate greenwashing through the readability of ESG disclosures', *Sustainability*, Vol. 16, No. 6, p.2571, https://doi.org/10.3390/su16062571.

Huang, D.Z.X. (2021) 'Environmental, social and governance (ESG) activity and firm performance: a review and consolidation', *Accounting & Finance*, Vol. 61, No. 1, pp.335–360, https://doi.org/10.1111/acfi.12569.

IFRS Foundation (2024) *IFRS Taxonomy Illustrated: Sustainability Disclosure Taxonomy 2024* [online] https://www.ifrs.org/issued-standards/ifrs-sustainability-taxonomy/ (accessed 23 October 2025).

Kalyani, S. and Mondal, R. (2024) 'Is ESG disclosure creating value propositions for the firms? An SLR and meta-analysis of how ESG affects the financials of a firm', *Corporate Ownership & Control*, Vol. 21, No. 1, pp.96–117, https://doi.org/10.22495/cocv21i1art9.

Khan, M. (2022) 'ESG disclosure and firm performance: evidence from developing markets', *Pacific Accounting Review*, Vol. 34, No. 3, pp.456–478, https://doi.org/10.1016/j.ribaf.2022.101668

Khan, M., Serafeim, G. and Yoon, A. (2016) 'Corporate sustainability: first evidence on materiality', *The Accounting Review*, Vol. 91, No. 6, pp.1697–1724, https://doi.org/10.2308/accr-51383

Khandelwal, V., Sharma, P. and Chotia, V. (2023) 'ESG disclosure and firm performance: an asset-pricing approach', *Risks*, Vol. 11, No. 2, p.112, https://doi.org/10.3390/risks11060112.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny. R (2000) 'Investor protection and corporate governance', *Journal of Financial Economics*, Vol. 58, Nos. 1–2, pp.3–27, https://doi.org/10.1016/S0304-405X(00)00065-9.

Matsumura, E. M., Prakash, R. and Vera-Muñoz, S.C. (2014) 'Firm-value effects of carbon emissions and carbon disclosures', *The Accounting Review*, Vol. 89, No. 2, pp.695–724 [online] https://www.jstor.org/stable/24468367 (accessed October 2025).

Narula, R., Rao, P., Kumar, S. and Matta, R. (2024) 'ESG scores and firm performance-evidence from emerging market', *International Review of Economics & Finance*, Vol. 89, No. A, pp.1170–1184, https://doi.org/10.1016/j.iref.2023.08.024.

Nian, H. and Said, F.F. (2025) 'The impact of ESG on firm risk and financial performance: a systematic literature review', *Journal of Scientometric Research*, Vol. 13, No. 3, pp.412–428, https://doi.org/10.5530/jscires.20041187.

Nimanthi, D.K.S and Priyadarshanie, W.A.N. (2021) 'Environmental disclosure practices and firm performance: evidence from Sri Lanka', *International Journal of Accounting and Business Finance*, Vol. 7, No. 2, pp.75–92, https://doi.org/10.4038/ijabf.v7i2.96.

Pedron, A.P.B., Macagnan, C.B., Simon, D.S. and Vancin, D.F. (2021) 'Environmental disclosure effects on returns and market value', *Environment, Development and Sustainability*, Vol. 23, pp.4614–4633, https://doi.org/10.1007/s10668-020-00790-2.

Pérez, R.C., Dolz, C.D., Romero, M.J. and García, I.S. (2018) 'How social, environmental, and economic CSR affects consumer-perceived value: does perceived consumer effectiveness make a difference?', *Corporate Social Responsibility and Environment Management*, Vol. 25, No. 5, pp.733–747, https://doi.org/10.1002/csr.1490.

PRI (2020) *Principles for Responsible Investment* [online] https://www.unpri.org/ (accessed 15 October 2025).

Pulino, S.C., Ciaburri, M., Magnanelli, B.S. and Nasta, L. (2022) 'Does ESG disclosure influence firm performance?', *Sustainability*, Vol. 14, No. 13, p.7595, https://doi.org/10.3390/su14137595.

Qiu, Y., Shaukat, A. and Tharyan, R. (2016) 'Environmental and social disclosures: link with corporate financial performance', *The British Accounting Review*, Vol. 48, No. 1, pp.102–116, https://doi.org/10.1016/j.bar.2014.10.007.

Qiyan, M. (2024) 'Exploring the multi-dimensional effects of ESG on corporate valuation: insights into investor expectations, risk mitigation, and long-term value creation', *Advances in Economics, Management and Political Sciences*, Vol. 103, pp.8–15, https://doi.org/10.54254/2754-1169/103/2024BJ0106.

Qureshi, F., Qureshi, S., Ismail, I. and Yarovaya, L. (2025) 'Unlocking economic insights: ESG integration, market dynamics and sustainable transitions', *Energy Economics*, Vol. 145, p.107642, https://doi.org/10.1016/j.eneco.2025.108407.

Ratnayake, D.A.W.M.S.P. and Rajakulanajagam, N. (2022) 'Corporate governance and corporate transparency: a Sri Lankan case', *International Journal of Accountancy*, Vol. 2, No. 2, pp.1–25, https://doi.org/10.4038/ija.v2i2.42.

Salman, K.R., Djunaedi, A.Z. and Ardianto, H. (2024) 'Exploring environmental, social, and governance practices from the perspective of agency theory and stakeholder theory', *Journal of Islamic Banking and Finance*, Vol. 41, No. 3, pp.21–30 [online] file:///C:/Users/Admin/Downloads/2.JIBFArtikel_SalmanetalJIBF2024.pdf (accessed October 2025).

Sebastianelli, R., Tamimi, N., Isil, O. and Rocco, V. (2025) 'Insights from analyzing corporate environmental and social disclosure', *Management Decision*, Vol. 63, No. 3, pp.803–823, https://doi.org/10.1108/MD-10-2023-1767.

Sharawi, H. and Shahawi, M. (2025) 'The impact of ESG disclosure on financial reporting quality: evidence from KSA', *Journal of Survey in Fisheries Sciences*, Vol. 11, No. 4, pp.98–108, https://doi.org/10.53555/sfs.v11i4.2880.

Sustainability Accounting Standards Board (SASB) (2020) *SASB Standards* [online] https://www.sasb.org/standards/ (accessed 10 October 2025).

Task Force on Climate-related Financial Disclosures (2022) 'Task force on climate-related financial disclosures: 2022 status report' [online] https://assets.bbhub.io/company/sites/60/2022/12/ (accessed 23 October 2025).

Tilakasiri, K.K. and Wanninayake, H.M.K.B. (2023) 'The impact of sustainability reporting practices on financial performance from power and energy sector organisations in Sri Lanka', *Journal of Desk Research Review and Analysis*, Vol. 1, No. 2, pp.53–66, https://doi.org/10.4038/jdrra.v1i2.17.

Vickneswaran, A. (2025) 'Corporate governance, management-shareholder, and reporting practices: navigating transparency, accountability, and sustainable decision-making', in Nadda, V. et al. (Eds.): *Governance Strategies for Effective Sustainable Development*, IGI Global Scientific Publishing, pp.1–14, https://doi.org/10.4018/979-8-3693-3011-1.ch001.

Wang, C. (2024) 'The relationship between ESG performance and corporate performance based on stakeholder theory', in *SHS Web of Conferences*, p.01023, https://doi.org/10.1051/shsconf/202419003022.

Wedajo, A.D., Salah, A.A., Bhat, M.A., Iqbal, R. and Khan, S.T. (2024) 'Analyzing the dynamic relationship between ESG scores and firm value in Chinese listed companies: Insights from generalized cross-lagged panel model', *Discover Sustainability*, Vol. 5, No. 336, https://doi.org/10.1007/s43621-024-00546-2.

Weerarathna, R.S., Lokeshwara, A.A., Sadali, W.A.P.L., Chandula, G.W.K.N and Nirma, M.A.C. (2021) 'Sustainability reporting on financial performance of Sri Lankan listed companies: how strong is the impact?', *Indonesian Journal of Sustainability Accounting and Management*, Vol. 5, No. 1, pp.162–174, https://doi.org/10.28992/ijsam.v5i1.404.

Wen, H., Ho, K.C., Gao, J. and Yu, L. (2022) 'The fundamental effects of ESG disclosure quality in boosting the growth of ESG investing', *Journal of International Financial Markets, Institutions and Money*, Vol. 81, p.01655, https://doi.org/10.1016/j.intfin.2022.101655.

Zahra, S.A., Handoyo, S. and Amrania, G.K.P. (2025) 'Sustainable business practices and firm performance: a systematic literature review', *Cogent Business & Management*, Vol. 12, No. 1, p.2597715, https://doi.org/10.1080/23311975.2025.2597715.

Zhang, T., Qin, C. and Lu, Z. (2025) 'Market competitiveness and corporate ESG performance', *International Review of Economics & Finance*, Vol. 101, p.103456, https://doi.org/10.1016/j.iref.2025.104201.