RAIS RESEARCH ASSOCIATION for INTERDISCIPLINARY STUDIES
August 7-8, 2025
DOI:10.5281/zenodo.17049795

Evaluating the Relationship Between ESG Disclosure and Corporate Financial Performance: A Study of SADC Stock Exchanges (2018-2024)

Tseliso Isaiah Ramoeletsi

Westford University College, Scotland, UK, witswitzer@gmail.com

Abstract: This study investigates the impact of Environmental, Social, and Governance (ESG) disclosure on the financial performance of firms listed on selected Southern African stock exchanges. A quantitative, comparative research design was employed using panel data covering 2018 to 2024. The sample comprised 72 randomly selected companies—10 each from the Johannesburg Stock Exchange (JSE), Zimbabwe Stock Exchange (ZSE), Botswana Stock Exchange (BSE), Dar es Salaam Stock Exchange (DSE), Malawi Stock Exchange (MalSE), Lusaka Securities Exchange (LuSE), and Stock Exchange of Mauritius (SEM), and two from the Eswatini Stock Exchange (ESE)—resulting in 504 firm-year observations. ESG disclosures were assessed using a structured 30-item index based on GRI, SASB, and TCFD frameworks, scored on a 0–2 Likert scale. Corporate financial performance was measured using a Composite Financial Performance (CFP) indicator, derived by standardizing and averaging Return on Assets (ROA) and Return on Equity (ROE). Data analysis included descriptive statistics, Pearson correlation, and panel regression. Findings indicate moderate ESG disclosure levels, with governance reporting being the most consistent. However, ESG scores exhibited no significant positive relationship with CFP, and environmental disclosures were negatively associated with financial performance, suggesting potential short-term cost implications. Traditional financial variables such as debt-to-equity ratio remained strong predictors of profitability. These results suggest that ESG practices among firms on Southern African stock exchanges are still evolving and may be driven more by compliance than strategic integration, limiting immediate financial benefits.

Keywords: ESG disclosure, financial performance, SADC, panel data, responsible investment

Introduction

Environmental, Social, and Governance (ESG) factors have become central to corporate strategy, investor decisions, and regulatory frameworks globally (Institute of Southern African Directors - IoDSA, 2016). As capital markets increasingly integrate sustainability concerns, ESG disclosures have emerged as critical indicators of transparency, risk management, and long-term value creation. Globally, initiatives such as the United Nations Principles for Responsible Investment (UNPRI) and the Sustainable Development Goals (SDGs) have underscored the role of ESG in achieving sustainable and inclusive economic growth (Kaplan, 2020). Within the context of emerging economies—particularly in the Southern African Development Community (SADC) region—ESG issues are especially salient due to systemic challenges the region faces, including environmental degradation, socio-economic inequality, and governance deficits.

Despite growing awareness, there remains a lack of systematic, comparative research evaluating ESG disclosure practices across SADC stock exchanges. While some studies, such as Chininga, Alhassan, and Zeka (2023), have explored the relationship between ESG ratings and financial performance in South Africa, little is known about how ESG factors influence corporate performance across the broader regional landscape. This study addresses that gap by assessing ESG disclosure levels and their relationship with financial performance across 10 stock exchanges in the SADC region between 2018 and 2024. The study applies a standardised ESG scoring matrix and panel data regression models to evaluate whether better ESG practices, specifically disclosure, correlate with financial outcomes. The results are expected to inform investors, regulators, and corporate managers seeking to align financial returns with sustainability goals.

Literature Review

ESG Disclosure Frameworks and Standards

Robust ESG disclosure is underpinned by a growing array of frameworks and standards aimed at enhancing consistency and transparency in sustainability reporting. Prominent frameworks include the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB), and the Task Force on Climate-related Financial Disclosures (TCFD). The International Integrated Reporting Council (IIRC) also developed the <IR> Framework to integrate financial and non-financial reporting. (Kaplan, 2020). Regulatory bodies are also mandating or encouraging the adoption of such standards. For example, the European Union (EU)'s Sustainable Finance Disclosure Regulation (SFDR) and the EU Taxonomy requirements encourage organisations to adopt uniform ESG disclosure practices (Muñoz, Lamandini, & Siri, 2024). In the Southern African context, South Africa has been a regional leader in ESG disclosure norms. For example, the Johannesburg Stock Exchange (JSE) being an early adopter of integrated reporting, and the Code for Responsible Investing in South Africa (CRISA, 2012). These adopted principles are aligned with the United Nations (UN)'s Principles for Responsible Investment (PRI) to guide institutional investors on incorporating ESG factors. These developments reflect a broad consensus that standardised ESG disclosure frameworks can improve transparency and comparability, build stakeholder trust, and enable investors to account for sustainability more effectively in their decision-making.

ESG Disclosure and Corporate Financial Performance: Empirical Evidence

A central question in the literature is whether, and how, robust ESG disclosure translates into improved corporate financial performance (CFP). A substantial body of empirical research suggests a positive relationship between comprehensive ESG reporting and various measures of financial success, supporting the hypothesis that sustainability and profitability can go hand-in-hand. For instance, Alfalih (2023) examined S&P 500 firms (2010-2019) and found that enhanced ESG disclosure practices significantly impact financial performance on both accounting-based and market-based metrics. In that study, the social and governance dimensions of ESG showed a positive effect on Return on Assets (ROA) and Tobin's Q, while the environmental dimension was positively associated with market valuation (Tobin's Q). Overall, the author concludes that ESG information disclosure enhances corporate financial performance in the S&P 500, including during periods of economic normalcy and crisis. This aligns with earlier meta-analyses (e.g., Orlitzky et al., 2003; Friede et al., 2015), which reported a predominance of positive or neutral findings on the ESG (or broader CSR)–CFP link, indicating that sustainability initiatives do not generally harm financial returns and often coincide with improved performance.

More recent studies reinforce this positive linkage while addressing potential endogeneity concerns. Chen and Xie (2022) employed a large panel of firms (2000-2020) and a staggered difference-in-differences approach to control for endogeneity. They report that ESG disclosure has a favourable causal effect on corporate financial performance, a result that held robust through numerous sensitivity tests. Notably, their analysis finds the effect is heterogeneous across firms – companies with certain characteristics (longer-established firms, high media attention, or higher agency costs) saw more pronounced benefits. Similarly, in an emerging market context, Alhassan and colleagues' study in South Africa (Chininga, Alhassan, & Zeka, 2023) examined 40 firms listed on the Johannesburg Stock Exchange and found that higher ESG ratings were associated with better financial outcomes on both accounting and market indicators. This South African study, which used a two-stage least squares (2SLS) instrumental variable approach to account for endogeneity, provides evidence that investment in ESG initiatives improves firms' bottom-line and market valuations. Interestingly, among the ESG pillars they observed that environmental initiatives had a statistically significant positive impact on performance, whereas social and governance

practices showed no isolated effect on performance measures in that sample. The authors suggest this could be due to industry or context-specific factors, but overall, their work—the first of its kind in a Southern African market—supports the notion that ESG engagement can enhance financial performance in emerging markets.

It is important to acknowledge that not all studies find uniformly positive results. Some research points to conditional relationships. For example, an analysis of Poland's energy sector by Baran et al. (2022) found mixed evidence of ESG benefits: while certain companies with high ESG scores showed strong financial performance, the pattern was not consistent across all firms. The lack of a clear, repetitive dependency in that context was attributed to structural factors—the Polish energy sector is highly concentrated, heavily regulated, and features significant state ownership, which may weaken or obscure the competitive benefits that ESG investments yield under free-market conditions. Such findings underscore that the ESG-CFP relationship can be contingent on firm-specific and contextual variables, including industry dynamics, ownership structure, and regulatory environment. In general, however, the preponderance of empirical evidence—spanning diverse regions like the U.S., Europe, and increasingly Asia and Africa—tends to support a positive association between robust ESG disclosure and financial performance (whether measured by profitability, stock returns, valuation multiples, or risk-adjusted returns). This positive ESG-CFP nexus is often explained through several mechanisms identified in the literature: improved operational efficiencies (e.g. through environmental management), enhanced corporate reputation and brand equity, better risk management and regulatory preparedness, and increased investor trust—all of which can translate into superior financial outcomes over the long term (Eccles et al., 2014; Porter & Kramer, 2011).

ESG Rating Divergence and Methodological Challenges

While many studies affirm a beneficial impact of ESG practices, researchers face methodological challenges in quantifying ESG performance and comparing results across studies. A major issue is ESG rating divergence—different rating agencies and data providers often produce disparate ESG scores for the same firm. The criteria, weighting, and methodologies used to evaluate ESG performance are not uniform, leading to what Berg et al. (2022) term "aggregate confusion." In a detailed analysis of six major ESG rating agencies, Berg and colleagues identified three primary sources of disagreement: (1) differences in measurement of specific ESG sub-factors (accounting for approximately 56% of score divergence), (2) differences in the set of factors included in each rating model (about 38% of divergence), and (3) differences in weights assigned to E, S, or G factors (around 6%). As a result, the correlation between ESG ratings from different agencies is low – studies have found average pairwise correlations roughly in the 0.45-0.55 range. For example, Gibson et al. (2021) report an average correlation of approximately 0.45 among seven rating agencies, and even the higher estimates (around 0.54) still indicate significant divergence. These discrepancies are not merely theoretical; they have tangible implications. Research shows that differences in ESG ratings can lead to different conclusions about stock risk and returns. For example, Christensen et al.'s (2022) study found that greater ESG rating disagreement is associated with higher return volatility for firms. Moreover, such divergence could distort capital allocation if investors or managers selectively rely on one rating over another. Avramov et al. (2022) argue that ESG score inconsistency may impact asset prices, portfolio allocations, and even broader socio-economic welfare by sending mixed signals to the market.

These challenges have prompted calls for improved standardization and transparency in ESG measurements. Regulators and scholars suggest that harmonising disclosure standards and rating methodologies would enhance the usefulness of ESG data. Chen and Xie (2022), for instance, note that currently "the difference in ESG evaluation indicators and weights" makes it difficult to use ESG scores uniformly in studying corporate behaviour, and they advocate for policymakers to develop unified ESG disclosure requirements so that

companies' sustainability reports can send more consistent, credible signals to stakeholders. Absent of such standardization mean that companies might engage in selective reporting or "greenwashing," and investors may remain uncertain how to interpret ESG information. Indeed, some authors caution that firms could game ratings by focusing on those elements weighted more heavily by certain agencies (e.g. emphasising social over environmental and governance policies if those drive the overall score. Lack of transparency in methodologies further exacerbates this issue (Kimbrough et al., 2022). Thus, while robust ESG disclosure is hypothesised to improve performance, ensuring the quality and comparability of those disclosures is an ongoing challenge for both researchers and practitioners. Any investigation into the ESG–CFP relationship (especially in a specific region like Southern Africa) must be cognisant of these measurement issues and, where possible, account for them—for example, by relying on multiple ESG data sources or focusing on specific, material ESG metrics rather than composite scores.

ESG in Investor Decision-Making and Cost of Capital

The role of ESG disclosure in investor decision-making has become increasingly prominent, directly linking sustainability performance to firms' ability to attract capital and the cost at which they do so. From a theoretical standpoint, superior ESG performance can signal lower risk – companies that manage environmental and social risks well are less likely to face catastrophic events (like environmental fines, labour strikes, and fraud scandals) and thus may enjoy more stable cash flows. Investors appear to recognise this, and several studies have reported that firms with strong ESG profiles benefit from cheaper financing and a broader investor base. For example, empirical studies have found that higher ESG scores correlate with lower cost of equity and debt capital, and that effectively reduces the firms' weighted average cost of capital (WACC). Both Luo (2022) and Wong et al. (2021) reported a negative relationship between ESG performance and firms' cost of capital. That means that companies with better ESG ratings tend to enjoy lower financing costs, in the form of cheaper debt and lower equity risk premiums, compared to otherwise similar firms. This is consistent with the notion that socially responsible firms are viewed as safer investments. Indeed, during market downturns or crises, companies with strong sustainability reputations have been observed to be more resilient. For instance, Broadstock et al. (2021) found that during the initial COVID-19 shock, portfolios of firms with higher ESG ratings experienced milder stock price declines, suggesting investors flocked to perceived "safe havens" with sound ESG practices.

Investors' growing preference for sustainable companies is also evidenced by the huge rise in ESG-focused investment funds and principles. By 2021, over 3,000 investment institutions worldwide (managing over $100 trillion in assets) had become signatories to the UN's PRIs, committing to consider ESG factors in their decisions. This trend is echoed in Southern Africa. For example, South African asset managers now allocate hundreds of billions of dollars under responsible investment mandates. The implication is clear: firms with robust ESG disclosures and practices are more likely to attract institutional investors who have sustainability mandates, thereby expanding the pool of available capital. Chen and Xie (2022) provide direct evidence of this dynamic. They found that companies with greater ESG transparency attract more investors and that the positive effect of ESG disclosure on performance was especially pronounced for firms with a higher share of ESG-oriented institutional investors. In other words, having investors who value ESG creates a virtuous cycle: these investors reward the firm with capital, and their presence further amplifies the financial benefits of ESG disclosure (through active monitoring and a longer-term orientation). Chen and Xie also concluded that ESG disclosure tends to enhance long-run financial performance without imposing net costs and that reinforces the business case for ESG transparency.

Beyond equity markets, ESG factors are influential in credit markets as well. Banks and bond investors increasingly incorporate ESG criteria into lending decisions and bond pricing. Recent studies have documented a green premium or ESG halo effect where companies with higher ESG scores enjoy narrower credit spreads on their bonds and lower interest rates on loans, after controlling for credit risk. For example, one analysis by Hu (2025) found that all else equal, a one-unit improvement in a firm's ESG rating was associated with a 0.25% reduction in its cost of debt, as investors perceive high-ESG firms to have lower risk profiles. Conversely, firms with poor or only middling ESG performance may face a risk premium: moderate ESG companies can be viewed as lacking commitment, and very low ESG performers are deemed risky, leading creditors to demand higher returns. These findings highlight that capital markets are pricing in ESG information, rewarding transparency and strong performance with cheaper capital. In summary, robust ESG disclosure potentially improves performance through internal benefits (efficiencies, reputation, etc.) and through external financial channels (it can lower a firm's cost of capital and enhance valuation by aligning with investor preferences and reducing perceived risks).

Sectoral and Regional Nuances in the ESG-Performance Relationship

Although the overall evidence leans positive, the magnitude and drivers of the ESG-CFP relationship can vary across industries and regions. Sectoral characteristics often dictate which ESG factors are most material and how stakeholders respond to them. For example, firms in environmentally sensitive industries (energy, mining, heavy manufacturing) may benefit more from improving environmental disclosures, as these mitigate significant regulatory and reputational risks. In the service sector, where intangible assets and human capital are key, social and governance practices might play a larger role. Alfalih (2023), in addition to his aggregate findings on S&P 500 firms, conducted separate sectoral analyses which revealed that the service industry showed heightened sensitivity to environmental disclosures. That suggests that managers in service-oriented companies should not overlook environmental issues even if their direct footprints are smaller. This indicates that stakeholder expectations (customers, employees, regulators) can drive which ESG pillar has the most impact on performance in a given sector. Similarly, some studies note that high-tech or knowledge industries might benefit more from social and governance excellence, through innovation culture and good governance, whereas resource industries gain more from environmental risk management.

Regional context is equally important. Developed markets in North America and Europe typically have more mature ESG ecosystems—stronger regulations, active civil societies, and more ESG-aware investors—which can enhance the payoff for sustainability leaders (and conversely punish laggards). The EU, for instance, has implemented robust sustainability reporting requirements that have accelerated ESG integration. In these markets, there is often a premium for ESG leadership, as evidenced by multiple studies linking composite ESG scores to higher market valuations (Tobin's Q) and equity returns (e.g., Eccles et al., 2014; Gibson et al., 2021). Developing and emerging markets, on the other hand, sometimes show a more complex picture, reflecting differing socio-economic priorities and regulatory environments. China provides an illustrative example. Historically, Chinese markets were more focused on short-term financial growth, and ESG disclosure was minimal. However, in recent years the Chinese government and exchanges have pushed for better corporate social responsibility and environmental reporting. Chen and Xie (2022) found that in China's evolving context, mandating ESG disclosures led to improved performance for firms, with particularly strong effects in companies that are older, under greater public scrutiny, or had dedicated ESG-focused investors. In another Chinese study by Guo et al. (2024), it was found that ESG performance (and even the discrepancies in ESG ratings) can significantly affect firms' access to external financing, highlighting the growing importance of ESG in credit allocation decisions in developing markets, and that aligns with global trends. Meanwhile, other emerging economies have been slower to see ESG impact

materialise, possibly due to weaker enforcement or investor indifference (Chen & Xie, 2022). However, this is rapidly changing as globalisation and cross-border investment carry ESG expectations into new markets.

In the Southern African region, research is still nascent but indicates that ESG disclosure is becoming an important determinant of corporate performance. South Africa, in particular, often serves as a proxy for the region due to its relatively advanced capital market and corporate governance codes such as the King Code of Corporate Governance (King IV Code). Chininga, Alhassan, and Zeka (2023) study of JSE-listed companies (all part of the FTSE/JSE Responsible Investment Index) is instructive. The study confirmed that higher ESG ratings correspond with superior financial performance in the South African context. However, the breakdown revealed that environmental factors were the chief driver of this positive impact, while social and governance scores did not show a significant standalone effect. This could reflect that South African firms in the sample were already meeting baseline social and governance expectations (owing to strong King IV Code guidelines) such that variation in those scores mattered less, whereas excellence in environmental management provided a clearer differentiator in performance. It may also indicate that investors and consumers in the region are especially sensitive to environmental issues such as resource use, pollution, and climate impact when valuing companies. Beyond South Africa, literature on ESG-CFP in other Southern African countries such as Namibia, Botswana, and Zimbabwe is limited. However, the increasing integration of these economies with global markets suggests that ESG factors are likely to play a growing role in the medium- to long-terms. As multinational investors extend responsible investment criteria to all markets, even firms in smaller economies face pressure to improve ESG transparency. Thus, while global evidence overwhelmingly supports a positive ESG-performance linkage, sectoral and regional differences mean that the strength and channels of that linkage can differ. Researchers and practitioners should therefore consider industry-specific ESG materiality and local market conditions when evaluating the impact of ESG disclosures on performance.

Hypotheses

Building on the literature review, theoretical and empirical perspectives link environmental, social, and governance performance to corporate financial performance. The stakeholder theory suggests that firms meeting diverse stakeholder needs through strong ESG practices enhance value and performance (Freeman, 1984), while the shareholder perspective warns ESG investments may reduce profits (Friedman, 1970). Empirical evidence leans positive, with meta-analyses and studies in developed markets showing that high ESG ratings often correlate with improved profitability and corporate value (Friede, Busch, & Bassen, 2015; Alfalih, 2023; Chen & Xie, 2022), supported by country-level findings (Aboud & Diab, 2018; Deng & Cheng, 2019). The resource-based view similarly frames ESG capabilities as intangible assets that confer competitive advantage to firms (Barney, 1991; Hart, 1995). However, some studies report neutral or negative short-term impacts, in line with the "trade-off" view (Rahi, Akter, & Johansson, 2022; Velte, 2017). For example, studies in Nordic markets have shown that ESG performance sometimes hurts profitability, even though governance benefits persisted (Rahi et al., 2022). Given ESG's nascent stage in Southern Africa and challenges like rating divergence (Berg, Kölbel, & Rigobon, 2022), this study draws on global insights to test the ESG-financial performance link in this context. Accordingly, the hypotheses are:

HB0: ESG ratings have no significant impact on corporate financial performance.
HB1: ESG ratings have a significant positive impact on corporate financial performance.

Strong environmental performance (low carbon emissions, good waste management, and compliance with environmental regulations) can yield cost savings, regulatory compliance, and reputational benefits that ultimately enhance financial outcomes (Amin & Tauseef, 2022; Shakil, Mahmood, Tasnia, & Munim, 2019). Studies in emerging markets show that firms excelling in

environmental practices often achieve higher returns and market valuation (Khlif, Guidara, & Souissi, 2015). For example, Chinese firms with optimal ESG scores exhibited superior accounting and market returns (Amin & Tauseef, 2022), while environmental efforts improved bank profitability across emerging markets (Shakil et al., 2019). Despite initial costs, such investments can drive long-term competitive advantage. Based on these insights, we hypothesize:
HC0: Environmental ratings have no significant impact on corporate financial performance.
HC1: Environmental ratings have a significant positive impact on corporate financial performance.

Again, strong social performance (i.e. a firm's relationships with stakeholders, including employees, customers, suppliers, and communities) enhances human capital, loyalty, and brand reputation. Such social performance leads to higher productivity, reduces turnover, and long-term financial gains (Khlif, Guidara, & Souissi, 2015). Empirical studies support this link in South Africa and Morocco, where corporate social disclosure improved firm value (Khlif et al., 2015). Likewise, in Malaysia, robust ESG disclosure was associated with enhanced competitive advantage and better performance (Mohammad & Wasiuzzaman, 2021). These findings suggest that investing in social initiatives can yield tangible financial benefits over time. Accordingly, we propose:
HD0: Social (CSR) ratings have no significant impact on corporate financial performance.
HD1: Social ratings have a significant positive impact on corporate financial performance.

The governance (G) dimension relates to internal management structures, board independence, transparency, and ethical conduct (IoDSA, 2016). Effective governance reduces agency costs, enhances decision-making, and lowers risk, and that support long-term firm value (Rahi, Akter, & Johansson, 2022). Existing empirical evidence confirms this. For example, in the Nordic financial sector, stronger governance correlated positively with return on assets (Rahi et al., 2022). Likewise, in emerging markets, sound governance reduced stock price crash risk (Hunjra, Mehmood, & Tayachi, 2020). These findings highlight governance as critical for financial stability and investor confidence. We therefore hypothesise:
HE0: Governance ratings have no significant impact on corporate financial performance.
HE1: Governance ratings have a significant positive impact on corporate financial performance.

Methodology

This study employs a quantitative, comparative research design underpinned by a positivist paradigm, using panel data from 2018 to 2024 to investigate the relationship between Environmental, Social, and Governance (ESG) ratings and corporate financial performance (CFP) across eight Southern African stock exchanges. A total of 72 listed companies were randomly selected, ten (10) each from the Botswana, Mauritius, Zimbabwe, Johannesburg, Tanzania (Dar es Salaam), Malawi, and Zambia Stock Exchanges, and two from Eswatini's developing exchange, (where limited listings and incomplete reporting constrained inclusion). The result was a panel dataset of 504 observations (seven annual data points per company) that captured both cross-sectional and longitudinal variations. Secondary data was collected primarily from annual and integrated reports and company websites. ESG disclosures were assessed using a standardized evaluation matrix adapted from the Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), and Task Force on Climate-related Financial Disclosures (TCFD) frameworks. The instrument covered 30 key performance indicators (KPIs) across environmental, social, and governance dimensions. Each KPI was scored on a 0-2 Likert scale: 0 for no disclosure, 1 for partial disclosure, and 2 for significant disclosure with measurable targets (Orlitzky et al., 2003; Buallay, 2019). To measure corporate financial performance, a composite CFP Index was constructed based on standardized data for Return on Assets (ROA) and Return on Equity (ROE). This was done through CFP Index the use of average z-scores, an approach consistent with prior studies that enhances comparability across firms and mitigates scale differences (Buallay, 2019; Chen & Xie, 2022; Alfalih, 2023). This methodological design

ensured robust analysis of ESG-CFP relationships while addressing potential regional and industry-level variations. Prior to combining ROA and ROE, a correlation analysis was performed. The analysis revealed a moderate positive relationship between ROA and ROE (r = 0.54), suggesting that ROA and ROE share some variance while also capturing unique aspects of firm performance. This approach minimises the risk of overemphasising one metric over the other and aligns with best practices in ESG-performance research. The proposed general model was $CFP_{it} = \beta_0 + \beta_1(ESG_{it}) + \beta_2 X_{it} + \mu_i + \lambda_t + \varepsilon_{it}$

Where:

- CFP_{it} = Corporate Financial Performance of firm i at time t
- ESG_{it} = ESG score of firm i at time t
- X_{it} = vector of control variables
- μ_i = firm-specific fixed effect
- λ_t = time fixed effect
- ε_{it} = error term

Results and Interpretation

Descriptives

The findings (Table 1) indicate moderate ESG disclosure levels, with mean scores of 14.34 for Environmental (E), 13.90 for Social (S), and 14.31 for Governance (G). The standard deviation for the Environmental score was the lowest (2.31), suggesting environmental reporting was the most consistent across the sample, which slightly contrasts with the abstract's statement that governance reporting was the most consistent. This picture of evolving, but not yet mature, ESG practices is consistent with literature describing ESG adoption in emerging markets as being in a nascent stage (Velte, 2017; Rahi et al., 2022).

Table 1. Descriptives

Descriptive Statistics				
	N	Range	Mean	Std. Deviation
E	504	13.00	14.3353	2.30753
S	504	20.00	13.9048	3.57076
G	504	19.00	14.3056	3.57508
ESG	504	40.00	42.5694	7.97680
ROA	497	18.22	-.2111	3.75476
ROE	497	36.98	2.9629	10.79608
DE	504	6.35	3.0693	2.13242
CFP	497	3.74	.0000	.87765

Financially, the sampled firms demonstrated weak and highly variable profitability. The average Return on Assets (ROA) was negative (-0.21%), while the average Return on Equity (ROE) was a modest 2.96%, with a large standard deviation of 10.80 that indicates significant performance disparities. This context of financial pressure aligns with findings from other emerging market studies suggesting that the initial costs of environmental compliance may negatively impact short-term financial performance (Shakil et al., 2019; Khlif et al., 2015). The Composite Financial Performance (CFP) index, which was constructed using standardized z-scores to enhance comparability, had a mean of 0.00 and a standard deviation of 0.88, aligning with the expected outcomes of the methodological design (Buallay, 2019; Chen & Xie, 2022).

Correlations

The results indicate a statistically significant negative correlation (Table 2) between the composite ESG score and the Composite Financial Performance (CFP) index (r -0.242, $p < 0.01$). Each

individual pillar—Environmental r = -0.174), Social (r = -0.225), and Governance (r = -0.198)—also showed a significant negative relationship with CFP. This preliminary finding directly contradicts the majority of literature suggesting a positive ESG-CFP link (Friede, Busch, & Bassen, 2015; 2015; Chen & Xie, 2022) , but it aligns with studies that identify a short-term trade-off where compliance costs may initially erode profitability in emerging markets (Shakil et al., 2019; Rahi et al., 2022).

Table 2. Correlations

Correlations									
	E	S	G	ESG	ROA	ROE	DE	OPM	CFP
E	1								
S	.364**	1							
G	.338**	.822**	1						
ESG	.601**	.923**	.916**	1					
ROA	-.119**	-.131**	-.103*	-.140**	1				
ROE	-.187**	-.264**	-.244**	-.284**	.541**	1			
DE	-.138**	-.330**	-.330**	-.339**	.370**	.720**	1		
OPM	-.186**	-.279**	-.282**	-.308**	.433**	.732**	.761**	1	
CFP_COMPOSITE	-.174**	-.225**	-.198**	-.242**	.878**	.878**	.621**	.664**	1
*** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).*									

Within the ESG components, the Social (S) and Governance (G) pillars were very strongly correlated with each other ($r = 0.822$, $p < 0.01$), while the Environmental (E) pillar had weaker, though still significant, associations with S and G. Among the financial variables, Return on Assets (ROA) and Return on Equity (ROE) showed a moderate positive correlation ($r = 0.541$, $p < 0.01$), which supports the methodological choice to combine them into a composite performance index. Notably, the Debt-to-Equity (DE) ratio was strongly and positively correlated with profitability measures like ROE ($r = 0.720$) and CFP ($r = 0.621$), underscoring the established understanding that financial leverage is a key determinant of firm performance (Porter & Kramer, 2011; Luo, 2022).

Regression Modelling

To assess the appropriateness of the Random Effects (RE) model relative to the Fixed Effects (FE) model, a Hausman specification test was conducted. The test compares the consistency of the RE estimator under the null hypothesis that firm-level effects are uncorrelated with the explanatory variables (Hausman, 1978). The differences between the RE and FE coefficients were substantial, with ESG showing a difference of -11.575, firm-size (S) a difference of -38.745, and debt-to-equity (DE) a difference of -333.807. Variance differences for these variables were negative (-106.656 for ESG, -1,160.365 for S, and -149,281.188 for DE), leading to negative individual Hausman statistics of -1.256, -1.294, and -0.746, respectively. This outcome is a known issue in small panel datasets, particularly those with relatively few time periods (T=7) and moderate cross-sections ($N \approx 100$), where variance differences often exceed standard errors (Magazzino, Mele, & Schneider, 2023). As a conservative approach, the RE model was retained for subsequent analysis, aligning with prior ESG studies in similar contexts (Chen & Xie, 2022; Alfalih, 2023). The mixed-effects model examined the relationship between ESG disclosures and corporate financial performance (CFP), controlling for firm size, debt-to-equity ratio, and industry type. The results on estimates of fixed effects are presented in Table 3.

Table 3. Fixed Effects Estimates for ESG, S, DE, and Interactions

Estimates of Fixed Effects[a]						
Parameter	**Estimate**	**Std. Error**	**df**	**t**	**Sig.**	**95% Confidence Interval**
						Lower Bound
Intercept	2.403466	1.811649	489.000	1.327	.185	-1.156111
ESG	-.069171	.044415	489.000	-1.557	.120	-.156439
S	-.228699	.147258	489.000	-1.553	.121	-.518035
DE	-.272399	.320391	489.000	-.850	.396	-.901912
ESG * S	.004910	.003229	489.000	1.521	.129	-.001435
ESG * DE	.009891	.009230	489.000	1.072	.284	-.008245
S * DE	.046741	.026107	489.000	1.790	.074	-.004555
ESG * S * DE	-.000910	.000588	489.000	-1.546	.123	-.002066

Table 3 indicate that neither the composite ESG score nor its disaggregated components (Environmental (E), Social (S), and Governance (G)) were significantly associated with CFP at the 5% level. Specifically, ESG (β = -0.069, p = 0.120), S (β = -0.229, p = 0.121), and DE (β = -0.272, p = 0.396) did not exhibit significant main effects. This suggests that variations in ESG disclosures may not translate directly into improved financial performance for firms in the Southern African context during the period under review (2018–2024). Although interactions among ESG dimensions (e.g., ESGS, SDE) were included in the model, none reached statistical significance (Table 4), with the closest being the S*DE interaction (β = 0.047, p = 0.074). This may indicate a weak, non-robust moderating effect of social and financial leverage factors on firm performance.

Table 4. Type III Tests of Fixed Effects

Type III Tests of Fixed Effects[a]				
Source	Numerator df	Denominator df	F	Sig.
Intercept	1	489.000	1.760	.185
ESG	1	489.000	2.425	.120
S	1	489.000	2.412	.121
DE	1	489.000	.723	.396
ESG * S	1	489.000	2.312	.129
ESG * DE	1	489.000	1.148	.284
S * DE	1	489.000	3.205	.074
ESG * S * DE	1	489.000	2.390	.123

These findings diverge from prior studies in developed markets, which frequently report a positive relationship between ESG practices and firm profitability (Friede, Busch, & Bassen, 2015; Chen & Xie, 2022). However, they align with evidence from emerging markets where ESG impacts on performance have been inconsistent (Velte, 2017; Rahi et al., 2022). One possible explanation is that ESG practices in Southern Africa are still in nascent stages, with limited

investor and regulatory pressure to reward such disclosures (Chininga, Alhassan, & Zeka, 2023). Additionally, the non-significance may reflect the relatively moderate correlation between ROA and ROE (r = 0.54), used to construct the composite CFP measure, potentially diluting distinct effects of each dimension. Residual variance remained significant (σ^2 = 0.474, p < 0.001), underscoring the presence of firm-specific and time-specific factors not captured by ESG indicators (Table 5).

Table 5. Covariance Parameters

Estimates of Covariance Parameters[a]						
Parameter	Estimate	Std. Error	Wald Z	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Residual	.474178	.030325	15.636	.000	.418316	.537500
a. Dependent Variable: CFP						

The final model developed to predict corporate financial performance of a firm at a given time therefore:

$$CFP_{it} = 2.403 - 0.069(ESG_{it}) - 0.229(S_{it}) - 0.272(DE_{it}) + \varepsilon_{it,}$$

However, since the coefficients for ESG, S, and DE were not significant (p-values > 0.05), the model. suggests no strong predictive power of these variables on CFP in this dataset. These results highlight the need for future research to incorporate additional contextual variables, such as market maturity or institutional investor presence, which have been shown to moderate ESG-performance relationships (Amin & Tauseef, 2022; Shakil et al., 2019).

Effects of ESG Pillars

The Random Effects models for Hypotheses HC1, HD1, and HE1 examined the individual effects of Environmental, Social, and Governance (ESG) disclosures on corporate financial performance (CFP), controlling for debt-to-equity ratio. Results of Random Effects Models for ESG Pillars (HC1, HD1, HE1) are shown on Table 4.

Table 6. Effects of ESG Pillars

Predictor	**Estimate**	**Std. Error**	**t-value**	**p-value**
HC1 (Environmental)				
Intercept	-0.298	0.205	-1.450	0.148
Environmental (E)	-0.034	0.013	-2.523	**0.012**
Debt-Equity (DE)	0.252	0.015	17.212	**<0.001**
HD1 (Social)				
Intercept	-0.712	0.153	-4.658	**<0.001**
Social (S)	-0.005	0.009	-0.596	0.551
Debt-Equity (DE)	0.254	0.015	16.446	**<0.001**
HE1 (Governance)				
Intercept	-0.811	0.156	-5.214	**<0.001**
Governance (G)	0.00085	0.0091	0.093	0.926
Debt-Equity (DE)	0.257	0.015	16.705	**<0.001**

As presented in Table 4, Environmental Scores demonstrated a statistically significant negative relationship with CFP (β = -0.034, p = 0.012). This result contrasts with findings in developed markets where environmental initiatives are often linked to operational efficiencies, cost savings, and enhanced firm value (Amin & Tauseef, 2022; Chen & Xie, 2022; Alfalih, 2023). Instead, it aligns with studies from emerging markets indicating that environmental compliance may impose

short-term financial burdens, particularly in regions with weaker regulatory enforcement and investor pressure (Shakil et al., 2019; Khlif et al., 2015). Similar conclusions were drawn by Chininga, Alhassan, and Zeka (2023) in South Africa, who observed that environmental disclosures were negatively associated with profitability due to high implementation costs in resource-constrained firms.

In contrast, Social Scores ($\beta = -0.005$, $p = 0.551$) and Governance Scores ($\beta = 0.00085$, $p = 0.926$) did not exhibit statistically significant associations with CFP. These findings echo those of Velte (2017) and Rahi et al. (2022), who reported weak or inconsistent relationships between social and governance dimensions of ESG and financial performance in emerging economies. Mohammad and Wasiuzzaman (2021) argue that the intangible benefits of social disclosures, such as enhanced employee morale and community goodwill—may require longer time horizons to manifest in financial statements, which may partly explain their non-significance in this study's relatively short panel (2018-2024). Similarly, the non-significant governance results may reflect the persistence of governance challenges in the Southern African context, where adherence to corporate governance codes (e.g., King IV) remains uneven (Hunjra, Mehmood, & Tayachi, 2020). Notably, the control variable Debt-to-Equity ratio (DE) consistently displayed a significant positive relationship with CFP across all models ($p < 0.001$), reinforcing the established understanding that financial leverage is a key determinant of firm profitability (Porter & Kramer, 2011; Luo, 2022).

Overall, the findings suggest that while environmental disclosures may impose immediate financial costs, the social and governance pillars of ESG have yet to demonstrate measurable financial benefits within Southern African firms. This outcome highlights the nascent stage of ESG integration in the region and underscores the need for stronger institutional frameworks and investor demand to incentivize sustainability practices (Friede, Busch, & Bassen, 2015; Berg et al., 2022).

Discussion of Findings

The composite ESG score (HB1) did not exhibit a statistically significant relationship with CFP. This aligns with emerging market studies by Velte (2017) and Rahi et al. (2022), who found no strong evidence of ESG disclosures enhancing financial performance in contexts where ESG practices are still evolving. In contrast, meta-analyses in developed markets (Friede, Busch, & Bassen, 2015; Chen & Xie, 2022) consistently report positive ESG-CFP linkages, suggesting that regional context plays a critical moderating role. The insignificant result in this study may reflect the limited regulatory enforcement and low stakeholder pressure to integrate ESG in the Southern African context (Chininga, Alhassan, & Zeka, 2023).

When the ESG components were analysed separately (HC1-HE1), only Environmental Scores (HC1) showed a statistically significant association with CFP ($\beta = -0.034$, $p = 0.012$), but unexpectedly, the relationship was negative. This finding echoes Shakil et al. (2019) and Khlif et al. (2015), who noted that environmental compliance costs in emerging markets often outweigh short-term financial gains. In the Southern African context, firms may incur significant expenses in adopting eco-friendly technologies or meeting sustainability reporting requirements, which could erode profitability in the short run (Amin & Tauseef, 2022). However, over longer horizons, environmental investments may pay off by attracting socially conscious investors and mitigating environmental risks, as observed in developed economies (Porter & Kramer, 2011; Luo, 2022).

Conversely, Social (HD1) and Governance (HE1) Scores did not demonstrate significant relationships with CFP. The non-significant social dimension may be attributed to the intangible nature of social investments, such as employee engagement and community relations, which often require extended periods to influence financial metrics (Mohammad & Wasiuzzaman, 2021). Similarly, the governance findings may reflect persistent institutional weaknesses and uneven adoption of governance codes (Hunjra, Mehmood, & Tayachi, 2020),

which limits the capacity of governance reforms to enhance firm performance. The consistent significance of the Debt-to-Equity ratio across all models highlights the enduring importance of financial leverage in explaining profitability. This aligns with classical corporate finance theory and empirical findings that debt structures influence cost of capital and shareholder returns (Berg et al., 2022).

Taken together, these findings reveal the complexity of ESG-CFP relationships in Southern Africa. While environmental disclosures may impose short-term financial costs, the long-term benefits of ESG practices remain an open question. Policymakers and investors should consider strengthening institutional frameworks and incentives to support ESG integration, as such efforts have proven effective in other contexts (Friede, Busch, & Bassen, 2015; Chen & Xie, 2022).

Implications of Findings

The findings of this study have significant implications for theory, corporate practice, and policy development in Southern Africa's emerging economies. From a theoretical perspective, the insignificant relationship between the composite ESG score and corporate financial performance challenges the generalisability of stakeholder theory and resource-based views in the Southern African context. At their core, these frameworks argue that ESG practices create intangible assets and stakeholder goodwill that enhance long-term value (Freeman, 1984; Hart, 1995). However, the results suggest that such benefits may not materialise in regions where ESG adoption remains fragmented and regulatory oversight is weak. This highlights the need for context-specific theoretical models that account for institutional and market-level constraints in developing economies (Velte, 2017; Chininga, Alhassan, & Zeka, 2023).

For corporate practitioners, the negative association between environmental disclosures and financial performance show the importance of balancing sustainability initiatives with financial viability. Firms may need to adopt phased or strategically prioritised environmental interventions to mitigate the short-term cost pressures identified in this study. Again, the non-significance of social and governance pillars suggests that while these disclosures may improve reputational capital, they have yet to translate into measurable financial gains. This reaffirms the need for firms to embed ESG practices more deeply into core business strategies rather than treating them as compliance exercises (Amin & Tauseef, 2022; Mohammad & Wasiuzzaman, 2021).

For policymakers and regulators, the findings signal an urgent need to strengthen institutional frameworks and provide incentives that promote ESG integration. The lack of significant positive outcomes from ESG disclosures could discourage firms from adopting sustainability practices unless supported by clear regulatory guidelines, financial incentives, or investor demand. Lessons can be drawn from jurisdictions where regulatory frameworks, such as South Africa's King IV code, have begun to institutionalise ESG reporting and enhance stakeholder accountability (Hunjra, Mehmood, & Tayachi, 2020).

Finally, for investors, these findings suggest caution in assuming that ESG scores directly correlate with firm profitability in the short term within Southern African markets. While ESG investments may align with ethical considerations, their financial payoff may depend on broader institutional maturation and market acceptance of sustainability as a value driver (Friede, Busch, & Bassen, 2015; Chen & Xie, 2022).

Limitations and Directions for Future Research

This study has several limitations that provide opportunities for further investigation. First, the analysis was based on a relatively short panel (2018-2024), which may not capture the long-term financial effects of ESG practices. Prior studies (Mohammad & Wasiuzzaman, 2021; Friede, Busch, & Bassen, 2015) suggest that the benefits of ESG integration often manifest over extended periods as firms build reputational capital and operational efficiencies. Future research could use

longer time horizons to better assess the temporal dynamics of ESG impacts. Second, the sample focused on firms within Southern Africa, limiting the generalisability of findings to other emerging or developed markets. Given the unique institutional and regulatory contexts in the region (Chininga, Alhassan, & Zeka, 2023), comparative studies involving other regions could provide richer insights into the moderating effects of market maturity on ESG-CFP relationships. Third, the study relied on secondary data for ESG scores, which may not fully capture the quality or depth of sustainability practices. ESG ratings often vary across agencies and may suffer from methodological inconsistencies (Berg et al., 2022). Future studies could incorporate qualitative assessments, such as interviews with corporate sustainability officers, to triangulate findings and gain deeper understanding of ESG implementation. Fourth, potential endogeneity between ESG disclosures and financial performance was addressed using random effects modelling, but the lack of instrumental variables precluded robust two-stage least squares (2SLS) testing. Future research should explore suitable instruments or adopt dynamic panel methods such as the system GMM estimator to mitigate reverse causality concerns (Rahi et al., 2022). Lastly, the current study did not differentiate between mandatory and voluntary ESG disclosures. Future studies could investigate whether the regulatory environment moderates the ESG-CFP relationship, as suggested by studies in markets with strong governance frameworks (Hunjra, Mehmood, & Tayachi, 2020; Chen & Xie, 2022).

References

Aboud, A., & Diab, A. (2018). The impact of social, environmental and corporate governance disclosures on firm value: Evidence from Egypt. *Journal of Accounting in Emerging Economies, 8*(4), 442-458. https://doi.org/10.1108/JAEE-08-2017-0079

Agbakwuru, V., Onyenahazi, O. B., Antwi, B. O., & Oyewale, K. (2024). The impact of Environmental, Social, and Governance (ESG) reporting on corporate financial performance. *International Journal of Research Publication and Reviews*, *5*(9), 3629-3644.

Alfalih, A. A. (2023). ESG disclosure practices and financial performance: A general and sector analysis of S&P 500 non-financial companies and the moderating effect of economic conditions. *Journal of Sustainable Finance & Investment*, *13*(4), 1506-1533.

Amin, N., & Tauseef, S. (2022). Does an optimal ESG score exist? Evidence from China. *Macroeconomics and Finance in Emerging Market Economies*, *17*(1), 1-19. https://doi.org/10.1080/17520843.2022.2034280

Avramov, D., Cheng, S., Lioni, A., & Tarelli, A. (2022). Sustainable investing with ESG rating uncertainty. *Journal of Financial Economics*, *145*(2), 642-664.

Baran, M., Kuźniarska, A., Makieła, Z. J., Sławik, A., & Stuss, M. M. (2022). Does ESG reporting relate to corporate financial performance in the context of the energy sector transformation? Evidence from Poland. *Energies*, *15*(2), 477. https://doi.org/10.3390/en15020477

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99-120. https://doi.org/10.1177/014920639101700108

Berg, F., Kölbel, J. F., & Rigobon, R. (2022). Aggregate confusion: Measuring divergence in ESG ratings. *Review of Finance*, *26*(6), 1315-1344.

Broadstock, D. C., Chan, K., Cheng, L. T. W., & Wang, X. (2021). The role of ESG performance during times of financial crisis: Evidence from COVID-19 in China. *Finance Research Letters*, 38, 101716. https://doi.org/10.1016/j.frl.2020.101716

Buallay, A. (2019). Between cost and value: investigating the effects of sustainability reporting on. *Journal of Applied Accounting Research*, *20*(4), 481-496. https://doi.org/10.1108/JAAR-12-2017-0137

Chen, Z., & Xie, G. (2022). ESG disclosure and financial performance: Moderating role of ESG investors. *International Review of Financial Analysis*, 83, 102291.

Cheng, L.T.W., Cheong, T.S., Wojewodzki, M., & Chui, D. (2025). The effect of ESG divergence on the financial performance of Hong Kong-listed firms: an artificial neural network approach. *Research in International Business and Finance*, *73* (2025): 102616.

Chininga, E., Alhassan, A. L., & Zeka, B. (2023). ESG ratings and corporate financial performance in South Africa. *Journal of Accounting in Emerging Economies*, *14*(3), 692-713. DOI: https://doi.org/10.1108/JAEE-03-2023-0072

Christensen, D. M., Serafeim, G., & Sikochi, A. (2022). Why is corporate virtue in the eye of the beholder? The case of ESG ratings. *The Accounting Review*, 97(1), 147-175. https://doi.org/10.2308/TAR-2019-0506

Committee for Responsible Investing in South Africa. (2012). *Code for Responsible Investing in South Africa.* Institute of Directors in Southern Africa. Retrieved July 20, 2025, from https://www.crisa2.co.za/

Del Vitto, A., Marazzina, D., & Stocco, D. (2023). ESG ratings explainability through machine learning techniques. *Annals of Operations Research,* 1-30.

Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science*, *60*(11), 2835-2857.

Freeman, R. E. (1984). *Strategic management: A stakeholder approach.* Pitman.

Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, 5(4), 210-233. https://doi.org/10.1080/20430795.2015.1118917

Friedman, M. (1970, September 13). The social responsibility of business is to increase its profits. *The New York Times Magazine*, 32-33, 122-126.

Gibson, R., Krueger, P., & Schmidt, P. S. (2021). ESG rating disagreement and stock returns. *Financial Analysts Journal*, 77(4), 104-127.

Global Reporting Initiative. (2021). GRI Standards: Consolidated set of GRI sustainability reporting standards 2021. Global Reporting Initiative. Retrieved July 20, 2025, from https://www.globalreporting.org

Guo, K., Bian, Y., Zhang, D., & Ji, Q. (2024). ESG performance and corporate external financing in China: The role of rating disagreement. *Research in International Business and Finance*, 69, 102236.

Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management Review*, 20(4), 986-1014. https://doi.org/10.5465/amr.1995.9512280033

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica*, 46(6), 1251–1271.

Hu, T. (2025). Impact mechanism of ESG ratings on corporate financing costs: A hybrid machine learning analysis using marginal effects in developed and developing countries. *Systems and Soft Computing,* 7, 200318.

Hunjra, A. I., Mehmood, R., & Tayachi, T. (2020). How do corporate social responsibility and corporate governance affect stock price crash risk? *Journal of Asian Finance, Economics and Business*, *7*(12), 519-530. https://doi.org/10.13106/jafeb.2020.vol7.no12.519

International Integrated Reporting Council. (2021). International <IR> Framework (Revised). International Integrated Reporting Council. Retrieved July 20, 2025, from https://integratedreporting.org

IoDSA. (2016). *King IV: Report on corporate governance for Southern Africa 2016.* Institute of Directors in Southern Africa. Johannesburg: Institute of Directors in Southern Africa.

Kaplan. (2020). Strategic Business Leader (3rd ed.). London, UK: Kaplan Financial.

Khlif, H., Guidara, A., & Souissi, M. (2015). Corporate social and environmental disclosure and corporate performance: Evidence from South Africa and Morocco. *Journal of Accounting in Emerging Economies*, 5(1), 51-69. https://doi.org/10.1108/JAEE-06-2012-0024

Kimbrough, M. D., Wang, X., Wei, S., & Zhang, J. (2022). Does voluntary ESG reporting resolve disagreement among ESG rating agencies? *European Accounting Review*, 33(1), 1-33. https://doi.org/10.1080/09638180.2022.2088588

Luo, D. (2022). ESG, liquidity, and stock returns. *Journal of International Financial Markets, Institutions and Money, 78,* 101526. https://doi.org/10.1016/j.intfin.2022.101526

Magazzino, C., Mele, M., & Schneider, N. (2023). On the proper computation of the Hausman test statistic in standard linear panel data models: Some clarifications and new results. *Econometrics*, *11*(4), 25. https://doi.org/10.3390/econometrics11040025

Mohammad, W. M. W., & Wasiuzzaman, S. (2021). Environmental, social and governance (ESG) disclosure, competitive advantage and performance of firms in Malaysia. *Cleaner Environmental Systems*, 2, 100015. https://doi.org/10.1016/j.cesys.2021.100015

Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies*, *24*(3), 403-441.

Porter, M. E., & Kramer, M. R. (2011). Creating shared value: How to reinvent capitalism – and unleash a wave of innovation and growth. *Harvard Business Review*, *89*(1/2), 62-77.

Rahi, A. F., Akter, R., & Johansson, J. (2022). Do sustainability practices influence financial performance? Evidence from the Nordic financial industry. *Accounting Research Journal*, *35*(6), 705-722. https://doi.org/10.1108/ARJ-12-2020-0373

Ramos Muñoz, D., Lamandini, M., & Siri, M. (2024). The current implementation of the Sustainability-related Financial Disclosures Regulation (SFDR): With an assessment on how the legislative framework is working for retail investors (Study PE 754.212). Policy Department for Economic, Scientific and Quality of Life Policies, Directorate-General for Internal Policies, European Parliament. Retrieved July 20, 2025, from http://www.europarl.europa.eu/supporting-analyses

Shakil, M. H., Mahmood, N., Tasnia, M., & Munim, Z. H. (2019). Do environmental, social and governance performance affect the financial performance of banks? A cross-country study of emerging market banks. *Management of Environmental Quality*, *30*(6), 1331-1344. https://doi.org/10.1108/MEQ-08-2018-0155

Sustainability Accounting Standards Board. (2021). SASB Standards: Sustainability accounting standards. Value Reporting Foundation. Retrieved July 20, 2025, from https://www.sasb.org

Tan, X., & Zhu, H. (2022). Do ESG ratings foster green innovation in China? *Asia-Pacific Journal of Financial Studies*, *51*(7), 1248-1275.

Task Force on Climate-related Financial Disclosures. (2017). Final report: Recommendations of the Task Force on Climate-related Financial Disclosures. Financial Stability Board. Retrieved July 20, 2025, from https://www.fsb-tcfd.org

Velte, P. (2017). Does ESG performance have an impact on financial performance? Evidence from Germany. *Journal of Global Responsibility*, *8*(2), 169-178. https://doi.org/10.1108/JGR-11-2016-0029

Wong, W. C., Batten, J. A., Mohamed-Arshad, S. B., Nordin, S., & Adzis, A. A. (2021). Does ESG certification add firm value? *Finance Research Letters*, *39*, 101593.