



Business Sustainability Practices: A Literature Review of the Association Between ESG and Financial Reporting Outcomes



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Abstract: The incorporation of environmental, social and governance (ESG) activities into business strategies has become a predominant way to maintain business sustainability. The impact of ESG adoption on financial reporting outcomes has been a subject of interest to authors in recent years. Nevertheless, studies that discussed and synthesized relevant theories and concepts in this domain are lacking in the literature to date. To fill this gap, this study adopted a narrative review approach to examining ESG and financial reporting outcomes (FROs), with an aim to identify and synthesize FROs that have been proposed and associated with a firm's ESG activities. In addition, this paper commented on the state and development of knowledge in the field of ESG and FRO as well as the limitations of prior research. Although the incorporation of ESG activities into business strategies produces positive FRO outcomes such as enhanced accounting quality, improved performance of a firm, and decreased cost of equity capital and debts, inconsistent propositions still remain. The findings presented in this study are unresolved, leading to ongoing inquiry and the need for further research. The review has implications for investors and policymakers to consider whether ESG could be used as a tool to potentially improve the credibility of financial reports and the outcomes of a firm's operational activities.

Keywords: Financial reporting outcomes; Sustainability; ESG; Business ethics; ESG performance; Corporate governance

JEL Classification: M41; M14; G32; G34

1. Introduction

Business operations affect the welfare of society as such, corporations have been pressured/encouraged to act ethically and responsibly by adopting good corporate mechanisms called ESG activities. The incorporation of ESG activities into business operations was triggered by the stakeholders' demand and the need to achieve sustainability, which drives value creation (De-Villiers & Dimes, 2022; Henisz et al., 2019). De-Villiers & Dimes (2023) stated that ESG activities/initiatives of an entity are reported in the integrated reports which encompass, on the one hand, the communication of ESG activities to external parties, and on the other hand, the inclusion of both financial and non-financial aspects of the business in financial reports. The financial aspects involve traditional accounting, and the non-financial aspects include elements such as sustainability and corporate governance in business strategies. Given the importance of ESG in achieving sustainability, the adoption of ESG has become a standard way of doing businesses and the number of entities that incorporated ESG activities into business practices has increased tremendously. In year 1990, less than 50 companies worldwide disclosed their ESG information, in 2016, almost 9,000 companies disclosed their ESG information (Amel-Zadeh & Serafeim, 2018). In 2024, the top 100 large companies in almost every country disclosed their ESG information (KPMG, 2024). As the number of entities adopting ESG is increasing, academic research on ESG has expanded substantially. In today's business environment, ESG is reshaping the accounting landscape and understanding how it affects financial reporting is crucial.

This paper provides an overview of ESG research with specific focus on the effect of a firm's ESG activities on

financial reporting outcomes. We aim to answer the following research questions. What did prior literature reveal about the effect of ESG on financial reporting outcomes? In this paper, financial reporting outcomes refer to the outcomes of the firm's operating activities/accounting processes. The literature on ESG is vast; therefore, we limit our investigation to ESG in corporate finance, specifically ESG and the outcomes of the accounting processes of the firm. This field of research has evolved considerably because accounting is used as a powerful tool for corporate governance (Comoli et al., 2023) and plays a key role in evaluating, tracking, documenting and communicating a company's ESG information, such as ESG performance and disclosure, to stakeholders. Furthermore, accounting assists in ensuring that ESG reporting complies with regulatory framework such as Global Reporting Initiative (GRI) or the Sustainability Accounting Standards Board (SASB). ESG disclosures supplement financial data with additional information (Li et al., 2018). Given the increasing adoption of ESG by firms, the interconnection/intertwinement between ESG activities and accounting processes, and the evolving research in this arena, there is a need for a thorough review of prior studies that discussed the effect of ESG on financial reporting outcomes. Such review will summarize and critically evaluate prior studies in the field, in order to provide up-to-date and novel insights into the state of knowledge in the field, and more importantly, to inform whether ESG improves financial reporting outcomes; this is crucial for the well-being and future prospects of a company.

Our review begins by describing the link between ethics and ESG, as ethics is the foundation for an entity's commitment to ESG activities (Duara et al., 2025) and good business practices (Rossouw & van Vuuren, 2017). We also discuss the benefits of incorporating ESG into financial reporting. After covering the methodology used to select articles included in the review, the results are presented via the reviewed papers and the analysis of empirical studies on ESG and financial reporting outcomes, such as accounting quality, firms' performance/value, stock returns, cost of equity capital, and debt. Lastly, we identify and comment on the limitations of reviewed studies and unexplored areas in the field, which open doors for further research on ESG and financial reporting.

2. Link between Ethics and ESG, and the Benefits of Adopting ESG in Financial Reporting

2.1 Ethics and ESG

Entities worldwide are adopting ESG practices since it is believed to be the way to maintain sustainable business (Henisz et al., 2019; Özer et al., 2024). The emergence of sustainable business is deeply rooted in the comprehension of ethics and business ethics. Ethics is about doing the good thing without compromising the good of others (Rossouw & van Vuuren, 2017). In other words, ethics refers to what is good or right in human interaction. In the business context, ethics entails the achievement of business goals while respecting the well-being of stakeholders who are directly or indirectly affected by business operations. Therefore, business ethics is described as an acceptable code of conduct, moral value, and standards that guide an entity in its interaction with all stakeholders (Rossouw & van Vuuren, 2017).

The interest of corporations in ethics is driven by the desire to avoid corporate scandals such as those that caused the closure of large corporations like Enron and Andersen. Another reason for the interest in ethics is the demand of stakeholders who feel that corporations are negating their ethical expectations (Rossouw & van Vuuren, 2017).

Corporations that incorporate ESG activities into their business strategies are in essence integrating ethical values into their business processes, thereby adopting good business ethics. Good business ethics is not specific to any country as it is a global trend (Duara et al., 2025). In line with that, new reforms and regulations have emerged around the world to encourage, and/or compel corporations to incorporate ethics into their business strategies in order to achieve long-term sustainability. For instance, corporate social responsibility (CSR) reforms such as the King Report in South Africa and the United Nations directives have been put in place to ensure that business practices are ethical, beneficial to society, and sustainable. In the same endeavor of maintaining business sustainability, ESG practices have emerged as a revised and specific version of CSR (Duara et al., 2025).

Although CSR and ESG focus on the impact brought forth by businesses on society, ESG emphasizes more on environment, social, and governance issues, which can be measurable. Specifically, ESG quantifies the impact of the operations of an entity on the environment, the society in which it operates, and its internal governance strategies, which are viewed as its effort to contribute to sustainability.

2.2 Benefits of ESG in Financial Reporting

Since ESG contributes to business sustainability, it is embraced by all stakeholders. In a survey conducted by the United Nations Global Compact about the opinions of Chief Executive Officers (CEO) on the importance of ESG for business success, 93% of the respondents agreed that ESG was indeed critical for the success of their business operations (Jafar et al., 2024; United Nations, 2019). Investors also believe that a firm's ESG activities contribute to business successes and reduced ESG risks, and enable long-term value creation (Narula et al., 2023). The benefits of ESG for corporations and the society at large cannot be overlooked. ESG reduces the negative

impact of business activities on society and the environment in which the firms operate (Henisz et al., 2019; Özer et al., 2024). Firms that adopt ESG are further in compliance with law and regulations since some of the ESG activities are governed by regulations and requirements. In fact, entities such as public companies are legal creations; therefore, they must be governed in accordance with law and regulations. Therefore, the internal processes and decisions taken by these companies must comply with the regulations and the needs of external stakeholders.

It is thus argued that ESG firms incorporate good ethical practice into their business operations. This results in high transparency and improved business performance (Özer et al., 2024; Veeravel et al., 2024; Velte, 2019). Companies with strong ESG practices are well equipped to deal with and quickly recover from economic turmoil/downturn (Narula et al., 2023). Furthermore, these companies are less risky, transparent, and have good reputation (Henisz et al., 2019). Strong ESG practices provide a competitive advantage for the firms. When a firm adopts ESG actions and has gained trust from customers, regulators, and authorities, this firm is likely to facilitate its expansion and growth with ease. Conversely, a firm with poor ESG practices is disadvantaged and does not have trust from the society. On this note, Henisz et al. (2019) pointed out that a firm was destroyed when it disregarded its impact on society, to favor profit. Such actions cannot maintain and sustain the firm in the long run.

In a nutshell, the benefit of ESG is to maintain sustainability of business through the creation of value. This benefit of ESG can be viewed from investors' and stakeholders' perspectives. In terms of investors' perspective, ESG contributes to sustainable business operations. This encompasses any action taken by a firm to limit risk, thereby protecting investors' investments. From the stakeholders' perspective, a firm's ESG activities also contribute to sustainability, which is viewed as the impact of a firm's operations on society and the environment in which it operates. However, the focus is more on the future. In this context, a firm's ESG activities toward sustainability aim at protecting the interest of stakeholders including those of future generations (De-Villiers et al., 2022). Therefore, the primary goals of entities are not only to make a profit but also to protect people and the planet. The incorporation of strong ethical value and principles into business practices is a prerequisite to achieve these goals. Apart from financial objectives alone, businesses also emphasize the combination of both financial and non-financial objectives, in order to remain sustainable and create value for stakeholders. Given this trend, governments increasingly encourage or mandate companies to adopt ESG practices. For instance, in South Africa, public companies are mandated to provide their integrated financial reports in which ESG activities are disclosed. ESG initiatives/activities are elements of corporate reporting such as, financial reporting, CSR reporting, sustainability reporting, and integrated reporting. Among these reports, integrated reporting is the latest form of corporate reporting (De-Villiers et al., 2022). A firm's ESG activities are disclosed in these reports, and this has inevitable implications for financial reporting outcomes. Financial reporting outcomes mean the outcomes of an accounting process such as high/low accounting quality, high/low performance/value, low cost of equity and debts. A firm's ESG activities, also called ESG performance or ESG disclosure, refer to initiatives the firm takes towards the safeguarding of the environment, society, and ethical governance.

The next section will discuss the methodology used to conduct the review.

3. Research Methodology

The paper aims to identify and synthesize financial reporting outcomes that have been proposed to be related to ESG activities. To achieve this aim, a narrative review approach was employed. A narrative review is suitable for this study as its purpose is to synthesize prior knowledge to understand the current state, identify gaps, and inconsistencies (Green et al., 2006; Pare & Kitsiou, 2017; Snyder, 2019). Search engines such as Google Scholar and EBSCO research databases were used to extract relevant peer-reviewed publications, spanning from 2018 to 2024, for review. The search criteria included keyword searches, such as ESG, ESG disclosures, ESG reporting, ESG and earnings quality, ESG and financial performance, ESG and financial reporting, ESG and cost of equity and debts, and sustainability reporting.

The selection of papers included in the review was guided by their relevance to the research aim/question. We adopted a purposive approach, which is consistent with the narrative reviews, as opposed to the systematic approach. Empirical studies that focused on ESG and the outcomes of a firm's operational activities and/or accounting quality were included in the review. Furthermore, studies that focused on firm-level data were considered, and those providing methodological details to identify the measures of ESG and FRO were employed. Only papers published in English were considered. Non-peer-reviewed publications were excluded from the review. Papers discussing ESG and financial reporting, without empirical analysis, were also excluded, in addition to papers whose full text was not available.

In the preliminary analysis, which consists of reading the title and abstracts of the papers returned from the search, we identified four financial reporting outcomes (FRO) that prior studies found to be related to a firm's ESG activities, including enhancement or deterioration of accounting quality, increase or decrease in profitability and firm value, low cost of equity and debts, and stock returns. The presentation of the results in the sections to follow will be in accordance with these FRO and their relationship to firms' ESG activities.

In total, 39 peer-reviewed publications that met the previously defined inclusion and exclusion criteria were chosen for the review. The content of these papers was further analyzed. Specifically, each paper was critically examined to confirm a clearly defined empirical methodology, analysis approach, and presentation of findings. The next section will discuss the results by presenting the reviewed papers and analyzing empirical studies on ESG and financial reporting outcomes.

4. Results: ESG Activities and Financial Reporting Outcomes

Due to corporate scandals such as the 2008 financial crisis, events that created economic turmoil such as the Covid 19 pandemic and stakeholders' pressure on businesses to be more accountable, many reforms such as the king reports and the European Union's directives 2014 (De-Villiers et al., 2022) have been put in place to ensure that information provided by entities is credible and that businesses adopt mechanisms to ensure sustainable operations. One of these mechanisms is the ESG activities that are being adopted by entities and their adoption has implications for the financial reporting outcomes (FRO) of the entities. Several studies have examined the effect of ESG on financial reporting outcomes. Table 1 summarizes the financial reporting outcomes that are related to a firm's ESG activities.

Table 1. Summary of financial reporting outcomes related to a firm's ESG activities

Financial Reporting Outcomes	Sources
Enhancement/deterioration of accounting quality	Adeneye et al., 2024; Alharasis et al., 2025; Almubarak et al., 2023; Kolsi et al., 2023; Li & Cheng, 2024; Liu et al., 2023; Özer et al., 2024; Ricapito, 2024; Tohang et al., 2024; Velte, 2019.
Improvement in/deterioration of a firm's performance	Abdi et al., 2022; Albitar et al., 2020; Aydogmus et al., 2022; Giannopoulos et al., 2022; Naeem et al., 2021; Shaikh, 2022; Shawat et al., 2024; Veeravel et al., 2024; Wong et al., 2021.
Increase/decrease in firm value	Abdi et al., 2022; Aydogmus et al., 2022; Li et al., 2018; Naeem et al., 2021; Wong et al., 2021; Wu et al., 2022; Yoon et al., 2018.
Decrease in cost of equity	Chen et al., 2023; Jafar et al., 2024; LaRosa & Bernini, 2022; Li et al., 2018.
Low cost of debts	Apergis et al., 2022; Eliwa et al., 2021; Lavin & Montecinos-Pearce, 2022; Raimo et al., 2021; Shi et al., 2024; Zhao & Zhang, 2024.
Decrease in share price/stock return	Bolton & Kacperczyk, 2021; Cornell, 2020; Fan et al., 2024; Luo, 2022.

Note: This table summarizes prior studies that discussed the relationship between financial reporting outcomes and a firm's ESG activities. The first column of the table lists the financial reporting outcomes and the second lists the articles that examined the association between ESG and FRO.

In this paper, financial reporting outcomes refer to how ESG activities of a firm influence the outcomes of financial reporting, which could either be a benefit or a disadvantage to the firm. As shown in Table 1, the financial reporting outcomes that are related to ESG activities include enhancement or deterioration of accounting quality, increase or decrease in profitability and firm value, as well as low cost of equity and debts. The subsections to follow will discuss prior studies that examined the association between ESG activities and each of these financial reporting outcomes.

4.1 ESG Activities and Accounting Quality of a Firm

Several studies have examined the association between ESG and accounting quality. Accounting quality refers to the reliability, accuracy, transparency, and consistency of a company's financial statements (Fonou-Dombeu et al., 2024). A summary of the papers reviewed in this area is provided in Table 2.

As shown in Table 2, the studies that have examined the association between ESG and accounting quality have used a firm's ESG activities, including ESG performance, ESG disclosure, and ESG rating disagreement, as the independent variable, and accounting quality proxy by either earnings management or earnings quality as the dependent variable. Table 2 further provides the source of ESG data used in these studies, the direction of the association between ESG and accounting quality as well as the authors who examined the association. The debate in this strand of literature is whether ESG practices improve earnings quality or whether ESG practices are utilized by management to manipulate earnings.

While some authors (Almubarak et al., 2023; Li & Cheng, 2024) reported that ESG led to deterioration of accounting quality, others reported the reverse (Mao et al., 2024; Ricapito, 2024; Tohang et al., 2024; Velte, 2019). For instance, the study by Almubarak et al. (2023) found a positive relationship between ESG disclosures and earnings management. Similarly, Li & Cheng (2024) found that ESG disagreement increased earnings management. These findings indicate that entities that have adopted ESG practices display a high tendency to manipulate earnings. These entities use ESG disclosure opportunistically to hide malpractices. This is

contradictory to the corporate governance mechanism which aims at encouraging firms to apply good ethical principles (Rossouw & van Vuuren, 2017), and disclose accurate information about their operations to stakeholders.

Table 2. Summary of empirical studies on the relation between ESG and accounting quality

Dependent Variables	Independent Variable	Source of Proxy for ESG	Sign/Results	Authors
Earnings management	ESG	ESG score obtained from Asset 4 database	(-) ESG is negatively related to earnings management	Velte (2019)
Earnings management	ESG	ESG score from Bloomberg	(+) ESG disclosure is positively related to earnings management	Almubarak et al. (2023)
Earnings quality (Proxied by Jone model)	ESG	ESG score sourced from Refinitiv Eikon database	(-) Higher ESG score increases accounting quality	Özer et al. (2024)
Earnings management (Accrual-based earning management and real earnings management)	ESG	ESG score sourced from Refinitiv Eikon database	(-) ESG is negatively related to earnings management	Ricapito (2024)
Earnings quality (Innate and discretionary accrual quality)	ESG	ESG score sourced from Asset 4 and Refinitiv Eikon database	(-) & (+) ESG is negatively related to discretionary accrual quality and positively related to innate accrual quality	Tohang et al. (2024)
Earnings management (Abnormal loan loss provision & loss avoidance)	ESG	ESG score from Thomson Reuters Eikon database	(-) & (+) ESG is negatively related to abnormal loss provision and positively related to loss avoidance	Kolsi et al. (2023)
Earnings management (Real earnings management)	ESG	ESG rating disagreement sourced from Huazheng, Wind, SynTao Green Finance, and Bloomberg databases	(+) ESG is positively related to earnings management	Li & Cheng (2024)

Note: This table summarizes the empirical studies that examined the relationship between ESG and accounting quality. For each paper in the table, we reported the dependent variables, the independent variable, the source of ESG data, and the signs for the relationships between the dependent and independent variables. In the fourth column of the table, the signs (+) and (-) indicate positive and negative associations, respectively, between the dependent and independent variables.

Conversely, a study by Özer et al. (2024) provided empirical evidence of higher accounting quality for firms with more adoption of ESG activities. Based on a sample of companies in the Frankfurt Stock Exchange in Germany, Velte (2019) found that ESG performance was negatively related to accrual-based earnings management, hence suggesting that ESG practices reduce a firm's tendency to manipulate earnings. As such, ESG activities complement traditional financial reporting and assist in attaining the overall purpose of integrated reporting, which is the provision of accurate and comprehensive view of an entity's performance, and its actions to ensure sustainability and create value over the course of time.

In brief, there are two opposing views in the literature regarding the effect of ESG activities on accounting quality. These two opposing views were supported by theoretical frameworks. Empirical evidence from prior studies showing that ESG reduces accounting quality is consistent with the agency theory. According to this theory, managers adopt ESG initiatives/disclosures at their own advantage and to cover up malpractices. Therefore, managers use ESG to enhance their reputation while concealing unethical behaviors.

Studies revealing that ESG improves accounting quality were endorsed by the stakeholder and legitimacy theories. The stakeholder theory stipulates that in the realization of long-term profitability and competitiveness, entities must take into consideration not only the interests of shareholders but also the needs of other stakeholders (Narula et al., 2023). By doing so, the company will achieve sustainable performance. In fact, the stakeholder theory draws on the principles of ESG and CSR, which require entities to have strong ethical values and to be accountable for their actions on society in which they operate. Similarly, the legitimacy theory also emphasizes strong ethical value and the alignment of business strategies to societal norms and expectations (Eliwa et al., 2021). Both theories prevent entities from engaging in earnings manipulation and display a high earnings quality. Apart from these theories, the reduction of earnings management due to ESG initiatives is supported by the ethical value of the entity (Almubarak et al., 2023) and stakeholders' attentions to ESG activities. Firms with strong business

ethics, take care of the environment and society in which they operate, and this has a positive impact on both the financial results and accounting quality (Özer et al., 2024).

In a nutshell, most of the reviewed papers found that ESG activities enhanced accounting transparency. Apart from documenting the relationship between ESG activities and earnings quality/earnings management, these papers enhanced our understanding of how the internal governance directs ESG activities of a firm. The former (i.e., internal governance) guides the ethical values, compliance, and operations of a firm.

4.2 ESG Activities and the Performance and Value of a Firm

Another financial reporting outcome reported to be related to ESG activities is the increase in a firm's performance or value. Table 3 provides a summary of prior studies that examined the relationship between ESG and a firm's performance and/or value. Specifically, it lists the dependent variables, independent variables, source and measure of ESG score, the direction (sign) of the association, and the authors of the reviewed articles. The study by Friede et al. (2015) provided a thorough review of papers that discussed the effect of ESG metrics on a firm's performance for the period of 1970 to 2015. Our review only reported on papers that focused on this field of research after year 2015.

Table 3. Summary of empirical studies on the relationship among ESG, performance of a firm, and its value

Dependent Variable	Independent Variable	Source of Proxy for ESG	Sign	Authors
Firm's performance and/or value	ESG	ESG score sourced from Thomson Reuters Eikon/Asset 4	(+) ESG increases a firm's performance/value	Abdi et al. (2022); Naeem et al. (2021)
Firm's value proxied by Tobin's Q and cost of equity	ESG	ESG score sourced from Refinitiv Eikon and Bloomberg	(+) ESG increases a firm's performance	Abdi et al. (2022); Ahmad et al. (2021); Aydogmus et al. (2022); Li et al. (2018); Wong et al. (2021); Wu et al. (2022)
Firm's value (Tobin's Q)	ESG	ESG score sourced from the Korean Corporate Governance Service	N/A	Yoon et al. (2018)
Firm's performance & market value	ESG	ESG score sourced from Bloomberg	(N/A) No association was found between ESG and a firm's performance	Junius et al. (2020)
Firm's performance (Return on asset, return on equity, Tobin's Q, and price earnings ratio)	ESG disclosure	ESG score sourced from Bloomberg	(+) ESG increases a firm's performance	Veeravel et al. (2024)
ROA, ROE, and Tobin's Q	ESG compliance	ESG score sourced from Bloomberg	(-) ESG increases and decreases a firm's performance	Shaikh (2022)
Tobin's Q	ESG disclosure	ESG score sourced from Bloomberg and Capital IQ	(+) ESG increases a firm's performance	Albitar et al. (2020)

Note: This table summarizes the empirical studies that examined the relationship between ESG and a firm's performance and value. For each paper included in the table, we reported the dependent variables, the independent variables, the source of ESG data, and the sign of the relationship between the dependent and independent variables. In the fourth column of the table, the signs (+) and (-) indicate positive and negative associations, respectively, and N/A indicates no association between the dependent and independent variables.

Similar to the association between ESG and accounting quality discussed in the previous section, the studies that examined ESG and the performance of a firm reported mixed results. Several studies found a direct association between ESG and a firm's performance (Abdi et al., 2022; Ahmad et al., 2021; Giannopoulos et al., 2022; Veeravel et al., 2024). Other studies reported an indirect association (Aydogmus et al., 2022; Giannopoulos et al., 2022) or no association (Atan et al., 2018; Junius et al., 2020; Yoon et al., 2018) between these variables. These studies used financial ratios such as return on assets and return on equity as a measure of a firm's performance. Furthermore, it is worth noting that all of these studies have used ESG score as a proxy for a firm's ESG activities.

ESG metrics are sometimes used separately and/or combined to test their effect on a firm's performance. For instance, the study by Albitar et al. (2020) found empirical evidence that ESG metrics, either used separately or as

a combined score, were positively related to a firm's performance. Specifically, the firms with high ESG scores displayed a better performance than those with low ESG scores. The study also revealed that integrated reporting, ownership concentration, board size, and gender diversity acted as moderating variables of the association between individual ESG metrics and a firm's performance. The findings of Albitar et al. (2020) emphasized the importance of ESG adoption for the long-term success of the firms. In fact, Iliev & Roth (2023) argued that a firm's sustainable activities are driven by its directors and have a positive impact on the firm's performance and productivity. Another study by Ahmad et al. (2021) also reported a positive association between ESG and a firm's financial performance. However, when using ESG metrics individually, the results are mixed. Only the social and governance metrics are directly associated with performance, and the economic metric of ESG is not. Another approach was taken by Batae et al. (2020) to compare the effect of ESG on the financial performance of European banks. The study found that combined ESG metrics led to improved performance of European banks and that there was no difference in ESG performance in developed and emerging European countries.

Other studies (Abdi et al., 2022; Aydogmus et al., 2022; Li et al., 2018; Wong et al., 2021; Wu et al., 2022) also looked at the effect of ESG on a firm's value. These studies argued that ESG contributed to the creation of value for the firm, through the reduction of cost of equity (Wong et al., 2021) and the enhancement of firm value proxied by Tobin's Q (Wu et al., 2022). The moderating factors such as the disclosures (Fatemi et al., 2018) and chief executive officer (CEO) power (Li et al., 2018) weakened the association between ESG activities and firm value whereas firm size (Abdi et al., 2022) and ownership structure (Wu et al., 2022) enhanced the relationship between the two variables (Wu et al., 2022). Other recent studies by Lin & Zhu (2024) and Zhou et al. (2025) examined how artificial intelligence (AI) and digital transformation affected ESG performance. These studies reported that AI and digital transformation indeed had a positive impact on ESG performance through the reduction of information asymmetry and earnings management.

In a nutshell, there are inconsistencies in the results of prior studies that examined the association between ESG and firm performance and/or value. However, most of the reviewed papers found that ESG activities contributed to the increase in firm profitability and value. This ultimately led to value creation which is evidenced by a reduction of cost of capital, high equity returns, and risk reduction. A thorough explanation of how ESG contributed to value creation was given by Henisz et al. (2019). Our review provided the same conclusion as Friede et al. (2015), who found that for most of the cases, ESG had a positive effect on performance. However, our review revealed that the academic literature in the field has been extended to incorporate moderating factors such as digital transformation and AI into the association between ESG and a firm's performance. For instance, the study by Lin & Zhu (2024) found that AI optimized ESG activities and ESG performance. Likewise, Zhou et al. (2025) reported that AI enhanced ESG performance by improving information transparency and lowering information asymmetry, leading to the improvement of accounting quality.

4.3 ESG Activities, Cost of Equity and Debts, and Stock Returns

Table 4 summarizes prior studies that looked at the association among ESG, the cost of equity and debts, and stock returns. For each paper included in Table 4, the dependent and independent variables, the source of ESG data used in the study, the direction of the association, and the authors of the articles were reported. The major question addressed in this strand of research is whether ESG adoption affects the risk profile of an entity.

Most of the literature reported that ESG positively affected an entity's risk profile which was illustrated by a reduction in the cost of equity capital and the cost of debts. For instance, using a sample of European firms, LaRosa & Bernini (2022) found that entities with poor ESG performance displayed a high cost of capital. However, the effect was mitigated by the effort of an entity to improve its environmental performance. Similarly, Chen et al. (2023) reported a negative association between ESG and the cost of equity in the Chinese capital market. Other studies (Eliwa et al., 2021; Shi et al., 2024; Zhao & Zhang, 2024) investigated the association between ESG and the cost of debts and found that ESG activities reduce the cost of debts. In fact, lending institutions believe that companies with high ESG practices display limited default risk and reputational risk; thus, these companies are more likely to obtain favorable loan terms (Eliwa et al., 2021). In addition, companies with high ESG performance exhibit a lower volatility compared to those with poor ESG performance (LaRosa & Bernini, 2022). Overall, studies on ESG and the cost of equity/cost of debt argued that entities with high ESG disclosures exhibited a low cost of equity and a low cost of debt. This is explained by the fact that, ESG adoption is viewed as a management commitment and adherence to good business ethics and practices, and compliance with regulations. This, in turn reduces information asymmetric and increases transparency, firm reputation, and profitability (Chen et al., 2023; Jafar et al., 2024).

Prior studies further examined the association between ESG and stock returns (Bolton & Kacperczyk, 2021; Cornell, 2020; Fan et al., 2024; Luo, 2022). Studies by Bolton & Kacperczyk (2021) and Luo (2022) found that higher stock returns were observed in firms with low ESG practices. Luo (2022) explained this finding by the fact that, investors had incomplete information about certain types of stocks compared to others. As a result, the stocks with incomplete information tend to display a higher return than those whose information is fully available in the

market. Likely, investors who favor ESG are more interested in firms with high ESG scores than those with low ESG scores. This is particularly the case with individual investors who do not want to invest in firms with bad reputation due to their negative impact on the environment (Chen et al., 2020), and the case of institutional investors who are required by regulations to invest in high ESG firms (Chava, 2014). Therefore, firms with low ESG scores are disregarded, resulting in high future returns for these firms. Luo (2022) further argued that the liquidity played a role in explaining the association between ESG and stock returns, since liquidity was related to a firm's information quality and financial performance.

Table 4. Summary of empirical studies on the relation among ESG, the cost of equity and debts, and stock returns

Dependent Variable	Independent Variables	Source of Proxy for ESG	Sign	Authors
Cost of equity	ESG performance and ESG controversies	ESG score sourced from Thomson Reuter's Asset 4	(-) ESG decreases the cost of equity	LaRosa & Bernini (2022)
Cost of equity	ESG	ESG score sourced from the Sino-Securities Index ESG Evaluation	(-) ESG decreases the cost of equity	Chen et al. (2023)
Cost of equity	ESG	ESG score sourced from ESG ratings data from SynTao Green Finance	(-) ESG decreases the cost of equity	Li et al. (2018)
Cost of equity	ESG disclosure	ESG score computed by the authors using the checklist from the Global Reporting Initiative	(-) ESG decreases the cost of equity	Jafar et al. (2024)
Cost of equity	ESG performance & ESG disclosure	ESG score sourced from Thomson Reuters and Bloomberg	(-) ESG decreases the cost of equity	Eliwa et al. (2021)
Debt financing		ESG score sourced from Wind database	(-) ESG decreases the cost of debt	Shi et al. (2024); Zhao & Zhang (2024)
Stock returns	ESG	ESG score sourced from Thomson Reuters/MSCI ESG rating	(-) ESG decreases stock returns	Bolton & Kacperczyk (2021); Cornell (2020); Fan et al. (2024); Luo (2022)

Note: This table summarizes the empirical studies that examined the relationship among ESG, the cost of equity and debts, and stock returns. For each paper included in the table, we reported the dependent variable, the independent variables, the source for ESG data, and the sign of the relationship between the dependent and independent variables. In the fourth column of the table, the signs (+) and (-) indicate positive and negative associations, respectively, between the dependent and independent variables.

4.4 Framework: ESG, FRO and Moderating Factors

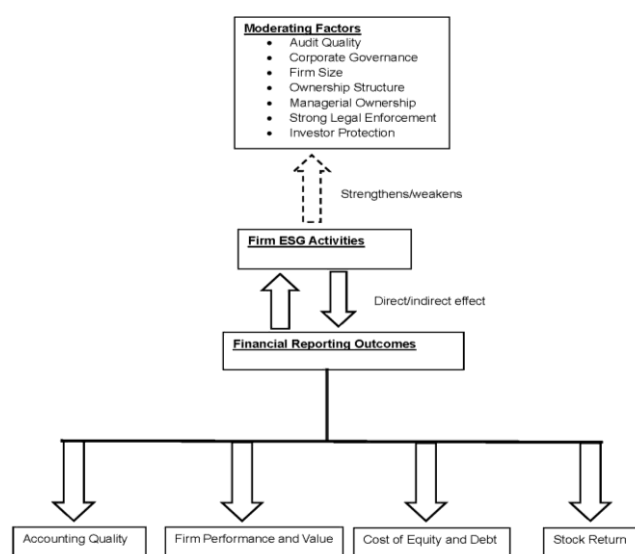


Figure 1. Association among ESG, FRO, and other moderating factors

Drawing on insights from the reviewed papers, we constructed a framework that illustrated the association

among ESG, FRO, and the moderating factors that have been found to strengthen or weaken the association between the two variables. The framework is presented in Figure 1. As displayed in Figure 1, the relationship between ESG and FRO can be direct or indirect. However, this relationship is not consistent across firms, and can be strengthened or weakened by moderating factors such as audit quality, firm size, managerial ownership, strong legal enforcement, investor protection, CEO power, board size, gender diversification, ownership concentration, and digital transformation. These moderating factors shape the extent to which a firm's ESG activities impact its financial reporting outcomes. For instance, high audit quality and strong corporate governance mechanisms enhance the impact of ESG on accounting quality and attenuate the negative effect of earnings management on ESG performance. Likewise, institutional ownership strengthens the association between ESG and firm value in certain regions. It is worth noting that from the reviewed papers, the effect of the moderating factors such as institutional ownership on ESG-FRO relation is not uniform and depends on country-specific regulatory rules and governance/institutional structures.

5. Discussion and Avenue for Future Research

Prior studies on ESG and financial reporting outcomes relied on the institutional theory, legitimacy theory, agency, and stakeholder theory to argue that ESG practices were not firms' specific initiative, but instead, ESG practices are influenced by external factors such as societal norms, government law and regulations in which the firms operate as well as other opportunistic motives. Therefore, firms align their business strategies with these factors, which, in most cases, lead to favorable financial reporting outcomes such as enhancement of EQ, low cost of equity, low cost of debts, and decrease in stock returns. Academic research has used a variety of terminology such as ESG rating, ESG disclosure, ESG performance, CSR, ESG reporting, to portray a firm's ESG activities. These terminologies are sometimes used interchangeably to illustrate a firm's effort to consider all stakeholders in their business operations and to achieve business sustainability. The literature revealed that a firm's ESG activities were measured by ESG score sourced from ESG rating agencies such as Thomson Reuter's Asset 4 and Bloomberg, or authors' self-constructed ESG score based on content analysis of a firm's ESG disclosure. Each agency has its own way of rating an entity's ESG activities. The rating depends on many factors, such as the industry in which the firm operates and the geographical location of the firm (Narula et al., 2023).

The findings of the effect of ESG and financial reporting outcomes are mixed. These mixed results could be explained by the lack of uniformity in ESG rating and measurement. It is not possible to compare ESG rating, reporting, and disclosure from one entity to the next (Avramov et al., 2022). This has been reported as the main obstacle to a firm's ESG information. There are no guidelines on how to quantify ESG data, which makes it difficult to compare ESG information across industry sectors and entities. Although platforms such as Blomberg provide ESG scores, there is no indication on the level of score needed for a company to be involved in ESG activities. As such, some companies may include one or two scores into their reports while others may incorporate more.

Since ESG data has been criticized for being unreliable due to a lack of uniformity among rating agencies, future work could examine if information technology tools such as machine learning and artificial intelligence could assist in solving this issue. Although the majority of papers reviewed found that ESG activities enhanced financial reporting outcomes, such studies sometimes only focused on analyzing historical data and the correlation between the variables (ESG and financial reporting outcomes), without explaining the economic drivers that resulted in the direction of the association (positive or negative). As pointed out by Harvey et al. (2016), only analysing correlations between variables might produce spurious results that a correlation might not exist if rigorous model was applied to the dataset. Further studies could attempt to find out the causality between ESG and the financial reporting outcomes. This would assist in understanding the economic rationale for the association between these variables.

The difference in the measures of financial reporting outcomes could be another reason for the mixed results. For instance, the measurements of accounting quality such as accrual quality, real earnings management, etc. are different, each measure illustrating a specific aspect of a firm's accounting quality (Fonou-Dombeu et al., 2022). The inconsistency in results could also be explained by the difference in capital markets and country-specific regulations concerning capital market. This led to the conclusion that the results of ESG studies found in one country might not be necessarily applicable to another country. This could be why there were many duplicated studies in ESG and FRO in the reviewed literature in this study. Another finding was that, no studies on ESG-FRO relation has been conducted in African country. This is in agreement with Sonko & Sonko (2023), who reported that studies on ESG were scarce in African countries. Future studies could examine the effect of ESG on financial reporting outcomes, using data from Africa capital markets, and then compare the results with that of other capital markets.

Lastly, since ethics is the foundation of ESG activities in firms, business ethics is the responsibility of the directors and other people in charge of governance (e.g., audit and risk management committee), future studies could examine how leadership promotes the adoption of ESG practices, and whether governance quality such as

audit quality, influences a firm's ESG practices and disclosure. Furthermore, examining how artificial intelligence could enhance the association between ESG and FRO could be a fruitful avenue for future work.

6. Conclusions

Firms contribute to sustainability by incorporating ESG activities into their business operations. The adoption of ESG activities by a firm has implications for FRO. This paper reviewed prior studies that examined the relationship between ESG and FRO.

The literature documented that a firm's ESG activities led to the improvement of FRO through the enhancement of accounting quality, increase in firm performance/value, decrease in the cost of equity capital and debts. However, prior works found that ESG adoption might have negative impacts on FRO. The dissimilitude in results may be attributed to the inconsistency in ESG data, research design, and characteristics of the capital market. This calls for additional research to clarify the implications of ESG practices in financial reporting. Nevertheless, the ESG practices are believed to contribute to the enhancement of firm value in terms of sustainable business operations and positive impact on society. These benefits of ESG can only be achieved if the firm has strong business ethics. Therefore, regulators should enhance ESG disclosures by ensuring that they are independently audited, as ESG may be used opportunistically to hide earnings management.

Our review contributes to existing knowledge by synthesizing prior works on ESG activities and financial reporting outcomes (FRO), so as to offer a holistic view of the impact of a firm's ESG practices on financial reporting. While previous works have examined how ESG influenced individual FRO, this review identified and classified FRO that were related to a firm's ESG activities, thus highlighting the overall benefits of ESG adoption. Furthermore, our review pointed out methodological issues in ESG-FRO relation, and gaps in the literature, specifically in African capital markets where there is a scarcity of research in the field. Finally, our review provided avenues for future work by suggesting unexplored areas in the field of ESG and FRO, such as the use of artificial intelligence, owing to their potential to enhance the understanding of the association between ESG and FRO.

Data Availability

The data used to support the research findings are available from the corresponding author upon request.

Conflicts of Interest

The author declares no conflict of interest.

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