Green Finance

Green Finance, 6(1): 162–198.
DOI: 10.3934/GF.2024007
Received: 09 December 2023
Revised: 24 January 2024
Accepted: 15 March 2024
Published: 29 March 2024

https://www.aimspress.com/journal/GF

Research article

Sustainable Development Goals (SDGs) practices and firms' financial performance: Moderating role of country governance

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Abstract: It is becoming increasingly apparent that businesses must consider the impact they have on the environment and society while pursuing profit maximization. As a result, there is a growing need to incorporate sustainable frameworks into business decision-making. By focusing on sustainable performance at the firm level, we addressed a significant gap in understanding how environmental and social Sustainable Development Goals (SDGs) impact bottom-line performance and the crucial role that effective country governance plays in implementing sustainability at the organization level. In 2015, the United Nations established Sustainable Development Goals (SDGs), where firms are encouraged to practice in the strategic operation of their businesses. In addition, country governance can play a significant role in adopting sustainable practices and policies that can impact bottom-line performance. In this study, we examined the relationship between environmental and social Sustainable Development Goals (SDGs) practices, country governance, and firms' financial performance from 2017 to 2021. The sample data set consisted of top-listed firms in the finance, manufacturing, and technology industries of 100 companies from 17 countries in developed and developing and emerging economies. We utilized content analysis to account for the qualitative aspects of how firms implement social and environmental SDGs. Ten environmental SDGs and eight social SDGs were incorporated in this study as a means of measuring sustainable development goals' impact on a firm's financial performance. We adopted return on assets (ROA) to measure the firm's financial

performance. We adopted government effectiveness and regulatory quality to moderate the ~relationship between social and environmental sustainability practices and firm performance. The panel regression method was exercised to find out the relationship between environmental and social SDGs' impact on financial performance. In addition, we measured the interaction effect between environmental and social SDGs and country governance on firms' performance. We also deployed two-stage least squares (2SLS) regression estimation to mitigate endogeneity concerns. We found that environmental SDGs had a positive and significant impact on firms' financial performance. The coefficient of social SDGs on firm performance was negative and statistically significant. We observed that the coefficient of interaction terms between environmental SDGs and country governance was positive and statistically significant. Moreover, the coefficient interaction terms between social SDGs and country governance were positive and statistically significant, lessening the negative impact of social SDGs on firm financial performance. Finally, we also performed a robustness test on our analysis based on the firm's average capital and average assets. The findings almost held the same.

Keywords: environmental sustainable development goals; social sustainable development goals; country governance; government effectiveness; regulatory quality; financial performance

JEL Code: Q01, G28, D22

1. Introduction

In 2015, the United Nations declared 17 Sustainable Development Goals (SDGs) to transform the world, requiring active attention from both developed and developing countries to adopt sustainable practices in business decision-making. Sachs et al. (2021) discussed that as nations worldwide are working towards achieving SDGs, corporate entities are encouraged to act as responsible citizens of society and do their part in complying with environmental and social-related best practices. These initiatives include minimizing their environmental impact, promoting diversity and inclusion in the workplace, ensuring fair labor practices, and maintaining transparent and ethical business operations. Even though incorporating SDGs into business seems to be a holistic approach to address many pressing global challenges and offer a broad range of commitments to various stakeholders such as customer, regulators, and NGOs, firms have yet to incorporate sustainability into their profit-driven business models (Van der Waal & Thijssens, 2020).

Prior research examining SDGs practices on firm performance is inconclusive and needs further discussion. Alshehhi et al. (2018) and Khaled et al. (2021) found a positive relationship between SDGs and firm financial performance. Surroca et al. (2010) stated that a relationship exists between sustainability practices and financial performance, but it is insignificant. Emma & Jennifer (2021) showed that only an insignificant number of firms have outlined SDGs strategies in their bottom lines, and firms that do so have a particular interest. Chabowski et al. (2011) stated that sustainable business practices should focus on long-term survival rather than short-term financial success. Lassala et al. (2021) found that firms operating without SDGs in business practices historically have better bottom-

line performance. Such inconclusive results might hurt the SDGs implementation; hence, we need further studies to investigate the SDGs impact and firm financial performance. Moreover, governments play a pivotal role in promoting sustainable practices in business by introducing new regulations. Scheyvens et al. (2016) highlighted that these regulations encourage businesses to adopt more sustainable practices, thus benefiting the environment and society.

To comprehend the genesis of this study, it is imperative first to understand the context of sustainability and its evolution into a global imperative. The concept of sustainability has indeed gained significant traction over the years. The United Nations defines sustainability as meeting the needs of the present without compromising the ability of future generations to meet their own needs (UN, 2015). The imperative for sustainable development became apparent with the recognition of environmental degradation, social inequality, and economic instability as interconnected issues. Through its member states, the United Nations has identified a comprehensive framework to address these challenges through the SDGs. The SDGs provide a blueprint for achieving a more sustainable and equitable world by 2030 that centers on 17 goals and 169 targets (United Nations, 2015). These goals address many issues, including poverty, hunger, health, education, gender equality, clean water, climate action, and more. Notably, achieving the SDGs is contingent upon the concerted efforts of various stakeholders, including governments, civil society, and the private sector. Firms are crucial in aligning environmental awareness and social responsibilities with their core values for more sustainable practices in any country. Recognizing this, many firms have started integrating sustainability into their business strategies and operations. Eccles & Serafeim (2013) and Ioannou & Serafeim (2017) are two studies that have shed light on the business case for sustainability. These studies have demonstrated that companies that emphasize environmental and social responsibility can experience various benefits, such as an improved reputation, increased customer loyalty, improved employee morale, and reduced operational costs. Furthermore, activities promoting sustainability can contribute to innovation, resilience, and long-term competitiveness (Porter & Kramer, 2011; Schaltegger & Wagner, 2011; Bhattacherjee et al., 2022). According to Acemoglu et al. (2001) and Durnev & Kim (2005), the governance of a country, which includes elements such as regulatory frameworks, political stability, rule of law, and institutional quality, can positively influence businesses to engage in environmentally responsible practices and make a positive contribution to the well-being of society. Research indicates that strong governance institutions have the potential to create a climate that is conducive to sustainable development. This can be accomplished by establishing transparent regulations, maintaining compliance, and cultivating trust among various stakeholders (Sachs, 2012; World Bank, 2017). On the other hand, inadequate governance may impede the efforts of businesses to adhere to sustainability standards, which can result in unfavorable outcomes for society and the environment (Belal, 2008; Kolk & Perego, 2010). The initiation of this study stems from the recognition of sustainability as a global imperative, as articulated by the United Nations' SDGs. By examining the relationship between firms' sustainability practices, financial performance, and the moderating role of country governance, this research seeks to contribute to our understanding of how businesses can effectively contribute to achieving the SDGs within diverse governance contexts.

Existing studies explore the integration of SDGs across multiple organizational dimensions, including how multinational corporations assimilate sustainability directives (Santos & Bastos, 2020), potentially scalable SDG solutions to global challenges (Goyal et al., 2020), interdependencies

between environmental governance and policy mechanisms, customized SDG-based reporting frameworks to induce sustainability-enhancing behaviors (Calabrese et al., 2021), and the cultivation of community partnerships to actualize high-impact SDG interventions through coordinated corporate resources (Ordonez-Ponce et al., 2021). Moreover, scholarly attention focuses on the affordances of advanced information technologies such as digitally enabled sustainability monitoring systems (Ribeiro et al., 2021); synergistic digital integration across internal and external organizational boundaries in building sustainability (Onyango & Ondiek, 2021); and sophisticated big data analytics applications in green innovation (Hassani et al., 2021). Very few studies specifically look at how country governance affects the SDG-performance link, even though they accept the institutional environment's impact on ESG practices (Arbolí-Pardo & Moya-Rengifo, 2023; Hahn et al., 2023). Current research primarily focuses on national or regional SDG progress assessments (Luna-Rodríguez et al., 2023; Sachs et al., 2023). However, we delve into distinct environmental and social SDGs and offer a more granular understanding of their specific impacts on performance. This aligns with calls for research on how different stakeholder-oriented objectives within a particular set of SDGs influence specific firm aspects (Eccles & Serafeim, 2017). By examining distinct environmental and social SDGs, this study offers a finer-grained understanding of their unique impacts on various performance dimensions like financial stability, risk management, and competitive advantage to build better long-term economic performance. By emphasizing firm-level sustainable performance analysis, this study fills a critical gap. This is vital as firms represent key actors in achieving the SDGs through responsible business practices (UN et al., 2023). The goals are made more attainable by this study, which fills the gap between the aspirations of the global SDGs and practical steps that businesses may take. This research fundamentally equips organizations to transform into proactive players to fulfill the grand vision underpinning the SDGs. Moreover, country governance is getting much more attention since governance quality affects a firm's ability to manage diverse stakeholders and adhere to sustainability standards (KPMG, 2022). We incorporate country governance as a moderator and addresses the existing gap by providing insights into how the relationship between SDGs and firm performance varies across countries with different governance levels, offering valuable context for businesses operating internationally. This study helps isolate the unique influence of country governance on the SDG-performance link, enabling firms to adapt their strategies based on the operating context. Findings from this study can inform policy development by revealing how governance structures can be strengthened to support better corporate performance aligned with the SDGs. Our research will show the pathway to implement SDGs within individual firms and will play a crucial role in creating a patchwork of localized transformations across the global business community. This collective effort helps to achieve the ambitious SDGs agenda worldwide.

We provide scholarly research on SDG practices, country governance, and firm financial performance and concentrate on dissecting the SDGs into economic and social practices. This is one of the first studies to break down the SDGS into social and environmental optics and discuss the importance of organizational performance. Since evaluating firms' social and environmental awareness has gained increasing attention among stakeholders such as governments, employees, and consumers, business organizations should focus on ensuring sustainable business performance to build a competitive advantage over the long run rather than disregarding sustainable efforts in the short run (Ramos et al., 2022, Khaled et al., 2021). On the other hand, the motivation of the study aligns with

the primary objective for any firm to maximize the shareholder stake in the organization, so businesses are often motivated to pursue SDGs if they can see how, it will benefit their bottom line. That is why providing evidence linking social and environmental SDGs to financial performance is essential, as this can help convince firms to become more engaged in sustainable practices. By demonstrating that sustainable business practices can add value to an organization, we can encourage more companies to prioritize social and environmental responsibility. In addition, we factor in country governance since adopting SDGs on a firm level largely depends on strong government support, policy setting, and implementation mechanisms from numerous agencies. National integration of the SDGs is a challenge and certainly needs effort and collaboration from all stakeholders to achieve the goals. As we are already halfway through the timeline for implementing the goals, we must continue to monitor and assess their impact on firm-level decision-making to ensure we are on track to achieve the desired outcomes (Barquet et al., 2022). Country governance mechanisms can play a crucial role in achieving the SDGs by establishing effective accountability that helps deal with the inherent dynamics, uncertainty, and complexity of sustainability problems. Strong country governance can create an environment that fosters sustainable development and ensures that decision-making processes are more efficient and inclusive (Glass & Newig, 2019). This paper introduces the application of country governance as an essential element to ensure that national policies and regulations are aligned with the SDGs, which in turn can contribute to achieving sustainable development at a global level. If a country's governance structure prioritizes sustainable development in its policies, it creates an environment that encourages businesses to align their strategies with the United Nations 17 SDGs. We also expanded our primary model to examine whether introducing country governance variables could enhance the positive impact of environmental and social SDGs on financial performance. We analyzed 100 companies from 17 countries between 2017 and 2021 with 500 observations.

This study contributes to practical knowledge regarding the significance of adopting the SDGs in business activities for better financial performance. First, firms can integrate cost-benefit analysis of significant environmental sustainability practices such as environmental hazards, greenhouse gas emissions, and carbon tax to create a large-scale collaborative approach maximizing SDG goals from the top to the bottom of any individual business. Second, firms need to show genuine commitment to executing the social SDGs by providing adequate funds and budgets for wider firm-based sustainability adoption. Third, management should proactively collaborate with the governance body and participate in developing a favorable SDG framework in practice.

2. Hypothesis development

2.1. Environmental SDG practices and financial performance

Environmental concerns have recently been a focus for businesses as they adopt environmental practices and policies for their operational and strategic goals. The United Nations established 17 additional sustainable development objectives in 2015 to help the world develop a coordinated strategy to address the most pressing environmental and social issues. Ten SDGs are proposed in this study as a means of achieving environmentally sustainable development goals (Khan et al., 2021). These ten SDGs include clean water (SDG 6), renewable energy (SDG 7), innovation and infrastructure (SDG

9), reduce inequalities (SDG 10), sustainable communities (SDG 11), responsible consumption (SDG 12), climate change (SDG 13), life below water (SDG 14), life on the land (SDG 15), and partnership (SDG 17). Businesses are now required to be more transparent about their activities and environmental impact. However, companies need help to adopt environmental insight into sustainable development goals as a means of broader stakeholder management practice. Therefore, policymakers have implemented sustainable and integrative reporting to force businesses to disclose their operational business activities in yearly reports (Hamad et al., 2020).

However, empirical evidence regarding environmental consideration and corporate performance remains inconclusive, as some literature has found the relationship to be significantly positive (Al Lawati & Hussainey, 2022; Salama, 2005; Simpson & Kohers, 2002), whereas other literature has shown the relationship to be significantly negative (Gatimbu et al., 2018). According to a report by Albertini in 2013, there is a positive correlation between environmental practices and corporate financial performance. Firms that maintain proactive environmental management can build a competitive advantage. Competitive advantages are not only limited to profit generation but also extend to better innovation, stakeholder management, and strategic direction (Bansal & Gao, 2006; Perrini et al., 2011). Endrikat et al. (2014) Bhattacherjee et al. (2023) found that firms associated with more environmental activities tend to withdraw resources outside the core business activities, which results in more social expenses and hurts the firm's financial performance. Li &Wu (2017) found that adopting an environmental management process led to poor financial outcomes.

Recently, more and more studies have demonstrated a direct link between corporate profitability and environmental performance, as the UN addressed the 2030 agenda of sustainable development goals in 2015, drawing more attention to linking environmental impact with corporate performance. Horvathova (2010) reported that for several reasons, such as variable bias and inconsistency in measurements, conclusive evidence has yet to be found studying three decades of empirical research between environmental performance and corporate financial performance. In addition, since SDG adoption is new, limited studies have been done to investigate the association between environmental SDGs adoption in the company's operations and corporate performance on a global scale. Shedding light on the absence of the previous study on environmental SDGs and corporate performance, the following hypotheses have been developed:

Hypothesis 1 (H1): Sustainable environmental development goals or environmental SDGs have a significant positive relationship with firms' financial performance (ROA)

2.2. Social SDGs practices and financial performance

There is a growing interest in socially responsible business practices, as corporate social performance has become an essential measurement of how a business undertakes its responsibilities toward society and stakeholders' management. Implementing business ideas for socially driven causes indicates a firm's commitment to sustainable development goals and practices. The emergence of the United Nations' sustainable development practices aims to transform people's lives by achieving several social goals out of a total of 17 goals. Khan et al. (2021) identified eight social goals that enhance sustainable development by implementing social practices into business activities: no poverty

(SDG 1), zero hunger (SDG 2), good health (SDG 3), quality education (SDG 4), gender equality (SDG 5), good jobs and economic growth (SDG 8), peace and justice (SDG 16), and partnership for the goals (SDG 17). Implementing business ideas for socially driven causes indicates a firm's commitment to sustainable development goals and practices.

The relationship between social practices and firms' performances has been evaluated in many studies. We found that most studies have found a positive association between firms' social activities and financial performance. Khan et al. (2022) found that social SDGs can impact the firm's money-related articulation and execution as analysts have detailed discoveries in ESG writing on the impact of social SDGs on firms' execution. Lougee & Wallace (2008) reported that firms with more social investments make higher ROA and maximize long-term value creation for the stakeholders. On the other hand, some studies in developed countries like the U.S., Canada, and other European countries also came up with firms' social development activities and financial performance, and the reason was mainly in the reduction of ROA because of high costs of social welfare which eventually exceeded the benefits (Miralles-Quirós et al., 2019; Di Tommaso & Thornton, 2020). Garcia-Castro et al. (2010) reported that a higher level of socially driven activities negatively impacted financial performance and stated that the sole purpose of carrying out social responsibilities is to generate more profit.

Given the inconclusive nature of past research, it is essential to delve deeper into the relationship between social SDG and financial performance. Moreover, this is one of the early studies exploring the impact of social SDG on firms' financial performance. Those mentioned eight social SDGs are critical in creating value and need more attention since firms have a significant stake in developing ideas that solve social imbalances. Our study is unique in that we analyze the social SDGs and the financial performance of firms, which have yet to see much research thus far. We hope to gain new insights into how companies can balance their social responsibilities and financial objectives by examining these two critical factors. Thus, the following hypothesis is formulated:

Hypothesis 2 (H2): Sustainable social development goals or social SDGs have a significant positive relationship with firms' financial performance (ROA).

2.3. Moderating effect of country governance

Country governance is a means to gauge a company's accountability or conscientiousness toward economic progress, environmental conservation, and social welfare. It is essential to acknowledge that policies are monitored closely to ensure effectiveness. Countries need to recognize their role in contributing to sustainable development and work towards meeting these global targets. According to Kaufmann et al. (2011), country governance is the process through which authority granted by the body of customs, laws, and institutions currently in place is used to manage a nation's social and economic resources for development on behalf of the general population. More robust governance improves the financial sector's soundness. It makes it easier for people to participate in financial markets, which are crucial for investment and development, which is a landmark for implementing the SDGs. One of the first steps taken at the national level was to set up a governance framework for the SDGs and encourage global trends in creating new or upgrading current coordinating platforms (Okitasari et al., 2019).

Suitable governance mechanisms in each country have a significant positive impact on implementing the SDGs. The UN Assembly's Sustainability Agenda 2030 SDGs are interrelated and dependent on corporate, social, and environmental governance (Zhao et al., 2021; Khaled et al., 2021). Lee & Kim (2020) and Njoku & Olayungbo (2021) showed that effective national government and SDG attainment correlate positively. Moreover, this research indicated that higher-quality governance variables, such as government effectiveness, regulatory quality, and low corruption, relate to more outstanding SDG scores. Consolandi et al. (2020) stated that SDGs are achieved for the nation by combining the efforts of all business organizations, firms, or corporations to prevent pollution, enhance social well-being through positive relationships, work to develop society's members, and boost corporate performance. However, some studies revealed a more nuanced relationship. Lee et al. (2022) examined 60 developing countries and found that better governance did not always correlate with more SDG accomplishment. Smith & Jones (2019) contend that sometimes robust bureaucratic governance can stifle the innovation required for sustainability. These findings suggest there may be restrictions on or even compromises between governance and sustainability.

There are very few studies regarding the country's governance impact on SDGs, as SDGs are a reasonably new concept. However, only some studies have examined the country's governance impact on the relationship between SDGs and a firm's performance. Hence, this empirical evidence needs to be more conclusive. Therefore, this study sheds light on how country governance moderates the relationship between SDGs and the firm's performance, particularly in a cross-country manner. In other words, this study seeks to answer how governance systems prevailing in a country manage the impact of SDGs implementation on a firms' performance and following hypothesis are developed:

Hypothesis 3 (H3a): Country governance positively moderates the relationship between environmental SDGs and firms' financial Performance (ROA).
Hypothesis 3 (H3b): Country governance positively moderates the relationship between social SDGs and firms' financial Performance (ROA).

3. Research design

3.1. Sample and data collection

The concept of SDG application in the financial world is new, as the UN declared 17 SDGs in 2015. According to Erin & Bamigboye (2021), the nexus between SDG practices and management applications needs to be explored and studied more rigorously. Initially, we started this study with a sample size of 187 firms from 17 countries between 2017 and 2021. The sample data set consisted of top listed firms in three industries: Finance, manufacturing, and technology (Aggarwal & Singh, 2019). However, 87 firms out of 187 primary samples were discarded due to the unavailability of financial and non-financial reports in English. Finally, we collected data for 100 companies from 17 countries between 2017 and 2021 both in developed economy countries including USA, Canada, Denmark, France, UK, Japan, Hongkong, Korea, New Zealand, and Australia and developing and emerging economy countries including India, China, Pakistan, Mexico, Brazil, Colombia, and Chile based on IMF criteria. The total sample yielded 500 observations spanning 5 years of observation of 100 firms.

3.2. SDG classification and content analysis

The interconnectedness of the three aspects of sustainable development—economy, ecology, and society—was emphasized by the United Nations when they mentioned that each of the 17 SDGs is interlinked and how their integrated nature is crucial in achieving the aims of the new agenda. However, there is currently no standardization regarding how the SDGs are categorized into triple bottom lines. As a result, the interconnection and classification of SDGs are inconclusive. Jan et al. (2021) incorporated the pure dominance theory and the interconnected goals perspective to define the interlinks between environmental, social, and economic goals. Sporchian et al. (2021) developed an input-state-output framework (I-S-O) representing a 3D space or cube within a three-axis diagram. This framework enables the classification of countries based on their economic, social, and environmental performance. Dalampira & Nastis (2021) used the network analysis framework to demonstrate how the economy-ecology-society prism can cluster the 17 SDGs. Le Blanc's (2015) use of word mapping analysis to define the application of each SDG in the space of a Venn diagram from an individual and multidimensional perspective is another interesting approach. However, defining the SDGs within the Tripple bottom line in an interconnected framework can be challenging. There has been debate over the interlinks relationship among SDGs. Attainment of any SDGs might alter the objective of related SDGs. This interdependence sometimes varies from country to country. Holden, Linnerud, & Banister (2017) stated that the scientific community had expressed concern regarding the efficacy of the Sustainable Development Goals (SDGs) and their interdependence with each other, citing the presence of dependency as vague, weak, or meaningless targets. Nilsson et al. (2016) showed concerns that possible interactions range from indivisibility, in which success in achieving one SDG is often dependent on the success of another SDG, to cancellation, as achievement of one SDG can sometimes have unintended consequences for progress on another SDG. They pointed out that countries must interpret the SDGs according to their national circumstances and levels of development. Otherwise, the interaction scores among the SDGs might need to give the right direction. Pradhan et al. (2017) has observed some trade-offs indicating historical and current SDG incompatibilities and suggested that it is essential to be aware of this because continuing down this path could result in lock-in effects where progress in one goal could hinder the fulfillment of others. Linking each SDG into multi-dimensional ways is complex and often raises questions about the implications. Thus, we kept our study of linking each SDGs into an identical pillar. Costanza et al. (2016) have pointed out that the complex nature of the SDGs leads to diluted guidance, which can hamper efforts to achieve the goals, and suggested a nonoverlapping model of linking every goal with a single pillar in contrast to connected three pillars of SDG. Rockström & Sukhdev (2016) conducted the tripartite nested model to map out the SDGs and classified each of the 17 SDGs as an identical pillar. We developed our analysis using 17sdg from a socio-environmental perspective, considering that the attainment of economic goals largely depends on the successful implementation of SDG in socio-ecological settings. Nina et al. (2020) critically reflects on the potential of SDGs in a social and ecological context for monitoring, supporting, and bringing about transformation toward sustainability. Their findings suggest that organizations prioritizing economic growth may fail to monitor absolute trends in resource use and overlook social and ecological integrity. According to Consolandi et al. (2020), businesses prioritizing their stakeholders' environmental quality and social well-being tend to have an easier time

achieving competitive economic advantages. Van Egmond & De Vries (2011) consider achieving economic growth a potential risk since many businesses consider it the goal, but rather a means to achieve more significant social and environmental objectives. By priorictizing the well-being of people and the planet, we can create a sustainable future that benefits everyone. Koehler (2016) suggests that critical theory and sufficiency economics propose shifting norms, policies, and practices to achieve social and climate justice goals. This requires a "hierarchy reversal" where social well-being and ecological balance goals take priority over economic rationality. SDGs were designed to be an "indivisible whole", and previous assessments have attempted to explore these interactions, including identifying synergies and possible conflicts between the SDGs, but failed to come up with any conclusive solutions. Scharlemann et al. (2020) found that decisions and actions, including research, innovation, policy, and management, often focus on a single SDG or a small subset of SDGs. This is because institutions, governance, and research funders are often fragmented. Since there are concerns over citing each SDG on multiterminal triple bottom lines and the social and economic spheres of SDGs have more overwhelming and overreaching benefits, we adopted Khan et al. (2022) study for SDG classification; this shows that 17 SDGs classified under social and environmental, and it is simply easy to read method of assigning each SDG into mutual exclusive the classification.

We adopted content analysis to accommodate the qualitative implication of SDGs practices for firms. Content analysis is a popular way to assess the qualitative implication of sustainable development goals in a business context. This technique often employed proper context, key terms, and justifiable references to extract information from the disclosure. Lee & Barker (2013) used content analysis to extract necessary information from company disclosures. We utilized numerous financial and non-financial reports to assess the SDG implications on firms' performance using content analysis. Khan et al., (2022) deployed content analysis on annual reports, sustainability reports, and available website data to measure the SDG impact on financial performance. We used the content analysis on multiple sources of firm information: Annual report (AR), sustainability report (SR), integrated report (IR), and non-financial statements (NFS) to assess the SDGs practices implication. We collected all the necessary SDG practices using AR, SR, IR, and NFS from the company website. The content analysis was done using keyword of United Nations 169 targets to achieve by 2030 (UN, 2015).

A quantitative approach was applied to search for the relevant SDGs information in each SDG category. We assigned a numerical code based on the results. This approach assigned either a score = 1 if the firms showed the SDG impact on the report or a score = 0 if the companies did not accommodate SDGs impact on the financial report (Xie et al., 2019; Khan et al., 2022 and Erin et al., 2022). We conducted this approach for both environmental SDGs practices and social SDGs practices. We adopted Khan et al. (2022) classification of environmental and social SDGs practice variable that available in Appendix A.

3.3. Financial and country-Specific data

We collected company-specific financial data from Capital IQ. Matching with content analysis sample data, Capital IQ's final sample consists of 100 firms across 17 countries from 2017–2021. Country-level governance and economic data are collected from the World Bank database between 2017–2021.

4. Variable definition

4.1. Financial performance

Orlitzky et al. (2003) showed that financial performance could be broadly grouped into three categories: Accounting measures, financial measures, and perceptual measures. Perceptual measures are the most subjective way to measure the firm's performance and often require strong judgments. Market expectations and the cyclical nature of the business operation highly drive market-based measures such as Tobin Q, or cumulative abnormal return. Griffin & Mahon (1997) showed that market measures of financial performance take account of future profitability expectations and may depend on numerous macroeconomic conditions. On the other side, ROA is one of the representative indicators of financial performance based on accounting measures. Grewatsch & Kleindienst, (2017) indicated that accounting measures showed a better relationship between financial performance and sustainability than market-based measures. Accounting measures work on historical data and consider what happened in regular business rather than the firm's operation's prospects. We considered Return on Assets (ROA) as the dependent variable to evaluate the firm's performance.

ROA: ROA shows the firm's revenue-generating performance from assets. A higher ROA means the firm is more productive and efficient in managing its assets or economic resources to generate more revenue. Buallay (2020) stated that ROA mainly measures the operating performance of firms from sustainability concerns.

4.2. SDG Practices

SDGs practices are divided into environmental SDGs and social SDGs. Environmental and social SDGs are independent variables of this study and indicate firms' preference to practice SDGs topics in their financial and non-financial reports.

Environmental SDGs Practices: Environmental SDGs are the quantitative measures of the binary results of 10 environmentally focused SDGs (Appendix A). A higher score indicates that firms are more inclined to drive business results that positively impact the environment.

Social SDGs Practices: Social SDGs consist of 8 SDGs out of the 17 SDGs overall. Social SDGs are the summation of the binary representation of these eight variables (Appendix A). A higher score means firms are more tied to bringing positive social impact through their economic activities.

4.3. Country Governance

Kaufmann et al. (2011) define country governance as highlighting how power is exercised on behalf of the public in the management of a country's resources. The following indicators are drawn from a database of several hundred variables spanning over 200 countries and 31 data sources. These indicators capture perceptions of governance as reported by survey respondents, non-governmental organizations, commercial business information providers, and public sector organizations worldwide. The wide range of sources from which the data is obtained suggests that the resulting data is highly comprehensive and provides a comprehensive picture of global governance perceptions. Country-

specific governance comprises six dimensions: Control of corruption, regulatory capital, the rule of law, voice and accountability, political stability and absence of violence, and government effectiveness. The effectiveness of a government's policies can be evaluated through government effectiveness and regulatory quality, which depend on the ability of the government to formulate and implement sound policies. These indicators follow a normal distribution and value range from approximately +2.5 to −2.5, with higher values indicating stronger governance and lower values indicating poor governance. Njoku & Olayungbo (2021) demonstrated that SDGs performance is correlated with greater government efficacy, accountability, and lack of corruption, while relationships between these factors can be complicated. Stafford-Smith et al. (2017) found that access to better health, education, and gender equality SDGs are significantly driven by governance infrastructure. We studied the moderating effect of government effectiveness and regulatory quality as country governance variables on the relationship between environmental and social SDGs and firm's financial stability.

Government Effectiveness: Measures the perception of public or state service quality, policy formulation, and application with no external political pressure and transparency of those policies to its fellow citizens. Countries that have a high percentile indicate more credibility of government actions.

Regulatory Quality: Reflects the perception of the government's capacity to plan and execute sound policies and regulations to foster private development. A higher percentile indicates that countries have substantial regulatory capital requirements.

4.4. Control variables

We used two types of control variables in this research. One is country-specific, and the other is company-specific. Sachs et al. (2019) showed that higher national income has been connected in studies to greater achievement of the SDGs of eradicating hunger, promoting health, reducing inequality, and other related goals. SDGs and profitability have been proven to be highly impacted by company-specific variables like industry, size, and current sustainability practices. SDGs activities that boost long-term profits can be more easily funded by larger companies and those in specific industries with more resources (Busse et al., 2021). We used size, leverage, audit quality and revenue growth as company specific control variables. The natural logarithm of total assets measures the company size. Previous literature shows positive and negative effects on the relationship between firm performance and sustainability. Ahammed & Saha (2019) stated that total assets as size could have a diversified effect on firms' financial performance. Large companies often have a competitive advantage over small banks since they have more resources to finance sustainability projects. Leverage is the proportion of a firm's debt to its equity. Higher debt-to-equity is considered riskier for firms by lenders and investors and suggests that firms' growth is financed through borrowed money rather than shareholders' money. Since financing with debt is risky, a lower ratio indicates a lower probability of a firm's default. Audit quality means financial statements are scrutinized with proper guidelines to come up with reasonable judgments that a financial report is free from material misstatement. Al lawati & Hussainey (2021) and Sabuj et al. (2019) found that audit quality can significantly maximize or minimize the way firms show a profit in books. Higher audit quality ensures the transparency of financial reports to stakeholders. Revenue growth measures a company's overall revenues from sales of goods and services over time and shows how quickly a company is increasing its top-line profits.

Busse et al. (2021) claim that businesses may ignore the SDGs because of rapid revenue growth that outpaces sustainability activities. GDP and inflation are the Country Specific variables this study has adopted. The natural logarithm of GDP measures the total economic output of a country. It helps to understand the monetary value of a country's goods and services. Higher GDP indicates better economic prosperity for a nation (Bhuiyan et al., 2024). Inflation measures the rate at which the price of goods and services risk that indicates the decline purchasing power of the customer. Higher inflation reduces consumers' purchasing power and hurts a country's business growth. A lower inflation environment stabilizes economic health.

Table 1. Definitions and measurements of research variables.

Variables		Acronym	Operationalization	Source
Dependent Variable	Return On Assets	ROA	Net earnings divided by total assets	Capital IQ
Independent Variables	Environmental Sustainable Development Goals	ESDG	Environmental SDGs are the sum of the binary results of 10 environmentally focused SDGs.	Capital IQ
	Social Sustainable Development Goals	SSDG	Social SDGs are the summation of the binary representation of 8 socially SDG focused goals	Capital IQ
Moderating Variables	Government Effectiveness	GE	Measures the perceptions of the quality of public services, the civil service's independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to policies. Score is normally distributed from approximately +2.5 to −2.5	The World Bank
	Regulatory Quality	RQ	Measure the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Score is normally distributed from approximately +2.5 to −2.5	The World Bank
Firm Control Variables	Total Assets	lnTA	Logarithm of total assets of the firm	Capital IQ
	Leverage	LE	The ratio of total debt to total assets	Capital IQ
	Revenue Growth	RG	The percentage of revenue change from previous year	Capital IQ
	Audit Quality	AQ	Score 1 if audit is done by Big 4 accounting firms	Capital IQ
Country Control Variables	GDP	lnGDP	Logarithm of total economic output of a country	The World Bank
	Inflation	INF	percentage change in the price of a basket of goods and services consumed by households	The World Bank

5. Methodology

Our study breaks down the SDGs adoptions into environmental and social practices to account for a deeper understanding of how an individual firm's environmental and social SDGs practices affect financial performance. So, we introduced equation 1 to measure the impact of the environmental SDGs

goals on firms' performance and equation 2 to measure the relationship between social SDGs goals and firms' financial performance.

$$FP_{ijt} = \beta_0 + \beta_1 ESDG_{ijt} + \beta_2 lnTA_{ijt} + \beta_3 LE_{ijt} + \beta_4 AQ_{ijt} + \beta_5 RG_{ijt} + \beta_6 lnGDP_{ijt} + \beta_7 INF_{ijt} + \varepsilon_{ijt} \quad (1)$$

$$FP_{ijt} = \beta_0 + \beta_1 SSDG_{ijt} + \beta_2 lnTA_{ijt} + \beta_3 LE_{ijt} + \beta_4 AQ_{ijt} + \beta_5 RG_{ijt} + \beta_6 lnGDP_{ijt} + \beta_7 INF_{ijt} + \varepsilon_{ijt} \quad (2)$$

where, i represent i[th] firms, j represents j[th] country, and t (2017-2021) represents the annual year for each country in this study. FP_{ijt} is the financial performance that represents ROA as dependent variable. $ESDG_{ijt}$ and $SSDG_{ijt}$ are the environmental and social SDGs, respectively, that represent the adoption of 17 SDGs in firms as the independent variables. lnTA, LE, AQ, and RR are the firm specific control variables. lnTA stands for logarithm total assets of the firm, LE refers to financial leverage, AQ refers to the dummy variable of audit quality equal to 1 if the big four audit companies audit the firm or 0 otherwise and RG is the revenue growth. GDP and INF are the country specific variable. lnGDP and INF refer to the logarithm Gross Domestic Product and inflation of the country, respectively. β_0 is the intercept and the beta coefficient β_1–β_7 refers to the coefficient value for independent and control variables associated with firms and countries. E_{ijt} refers to the error term.

We further examined the relation between environmental and social SDGs and firm financial performance by introducing the interaction effect of the country governance and environmental SDGs and country governance and social SDGs on financial performance in equation 3 and 4, respectively.

$$FP_{ijt} = \beta_0 + \beta_1 ESDG_{ijt} + \beta_2 CG_{ijt} + \beta_3 ESDG * CG_{ijt} + \beta_4 lnTA_{ijt} + \beta_5 LE_{ijt} + \beta_6 AQ_{ijt} + \beta_7 RG_{ijt} + \beta_8 lnGDP_{ijt} + \beta_9 INF_{ijt} + \varepsilon_{ijt} \quad (3)$$

$$FP_{ijt} = \beta_0 + \beta_1 SSDG_{ijt} + \beta_2 CG_{ijt} + \beta_3 SSDG * CG_{ijt} + \beta_4 lnTA_{ijt} + \beta_5 LE_{ijt} + \beta_6 AQ_{ijt} + \beta_7 RG_{ijt} + \beta_8 lnGDP_{ijt} + \beta_9 INF_{ijt} + \varepsilon_{ijt} \quad (4)$$

Here, CG refers to country governance, ESDG * CG refers to the interaction effect of country governance and environmental SDGs practices, and SSDG * CG refers to the interaction effect of country governance and social SDGs practices.

First, we calculated the correlation matrix coefficients of the variables to measure the collinearity of the variables. Then, we performed a variance inflation factor (VIF) test for multicollinearity among the explanatory variables. Since the sample is panel data, we then run panel regression to capture the variation in cross sectional data and time effect (Garcia et al., 2017; Uyar et. al., 2020). We also employed Hausman's specification test to determine whether fixed effect or random effect panel regression fit for our hypothesis. The null hypothesis is that the model has random effects. If the p-value of the test is less than 0.05, thus, the null hypothesis is rejected, and fixed effects panel regression will be employed. Next, we will perform Breusch– Pagan test to check for heteroscedasticity (Gujarati & Porter 2009)**.** The null hypothesis is that variances in error terms are equal. If the p-value of the test is more than 0.05, the null hypothesis is accepted, and the panel regression model maintains homoscedasticity. Finally, we also deployed two-stage least squares (2SLS) regression estimation to mitigate endogeneity concerns. Since endogeneity concerns might arise reverse causality or omitted variable bias, we also deployed two-stage least squares (2SLS) estimation to mitigate endogeneity concerns (Garcia et al., 2017; Lahouel, 2019). We lagged the independent variables and control

variables by one year and include both country and year effect so we can mitigate the potential endogeneity (Wang et. al., 2022; Buallay et al., 2019; Ali et al.,2023).

6. Descriptive statistics and correlation

Table 2 represents the descriptive statistics of several financial and economic variables. Among the variables, the environmental and social SDGs stand out as independent variables and ROA is dependent variable. Environmental SDGs (ESDG) scores exhibit a moderate range, with an average of 4.31 and a standard deviation of approximately 1.72. Social SDGs (SSDG) likewise, range from 0 to 6, with an average of 3.09 and a standard deviation of around 1.38. The independent variable Return on Assets (ROA), with an average of 3.59 and a standard deviation of about 4.88. Logarithm of total assets (lnTA) has a mean of 4.43 and standard deviation of 1.22. Leverage (LE) spans from negative to positive values, averaging 1.39, with a standard deviation of 1.73. Asset Quality (AQ) averages 0.68, with a standard deviation of 0.46. Revenue Growth (RG) has an average of 0.15 and a high standard deviation of 1.71, reflecting disparities in revenue trends. The Logarithm of Gross Domestic Product (lnGDP) variable has an average 3.61 with a standard deviation of .82. The inflation rate (INF) fluctuates between −0.23 and 10.58, averaging 2.86, with a standard deviation of 2.08. Government Effectiveness (Goeff) shows considerable variability, averaging 73.93, with a standard deviation of 21.94. Regulatory Quality (RQ) averages 71.94, with a standard deviation of 26.14, signifying variation in regulatory environments.

Table 2. Summary statistics.

	Observation	Average	SD	Minimum	Maximum
ROA	500	3.59	4.88	-14.00	31.00
ESDG	500	4.31	1.72	1	8
SSDG	500	3.09	1.38	0	6
lnTA	500	4.43	1.22	1.15	6.64
LE	500	1.39	1.73	−2.13	12.12
AQ	500	0.68	0.46	0	1
RG	500	0.15	1.71	−0.91	38.14
lnGDP	500	3.61	0.82	2.40	5.37
INF	500	2.86	2.08	−0.23	10.58
GOEFF	500	73.93	21.94	27	99
RQ	500	71.94	26.14	14	100

Table 3 represents the correlation coefficients of the variables to measure the multicollinearity problems among explanatory variables. Since all correlation coefficients are less than .90, no multicollinearity problem exists in the study dataset. Appendix B shows the VIF value of independent variables. Since VIF value of all explanatory variables is less than 10, the sample is free from multicollinearity (Appendix B).

Table 3. Correlation coefficients.

	ESDG	*SSDG*	*TA*	*LE*	*AQ*	*RG*	*GDP*	*INF*	*GOEFF*	*RQ*	*ROA*
ESDG	1										
SSDG	0.75	1									
TA	0.14	0.17	1								
LE	0.04	0.02	0.07	1							
AQ	0.37	0.33	0.24	0.21	1						
RG	0.06	0.05	0.07	0.01	0.03	1					
GDP	0.39	0.38	0.34	−0.11	0.2	0.02	1				
INF	−0.38	−0.33	−0.2	−0.09	−0.23	−0.06	0.18	1			
GOEFF	0.57	0.53	0.17	0.05	0.26	0.03	0.3	−0.74	1		
RQ	0.5	0.47	−0.01	0.11	0.32	0.02	0.26	−0.64	0.82	1	
ROA	0.37	−0.13	0.43	0.17	0.03	0.31	0.43	0.29	0.12	−0.06	1

7. Results and discussion

Table 4 shows the relationship between environmental SDG practices and firm financial performance (ROA) both in fixed effect regression in column 1 and 2SLS model estimation in column 2. The coefficient of environmental SDGs on firm performance is positive and statistically insignificant at a 5% significance level in column 1 (coefficient = 0.082). So, the result supports hypothesis 1 (Khan et al., 2022; Galeazzo et al., 2023; Wibowo & Suryanto 2020; Sciarelli et al. 2021). In column 2, 2SLS regression results show that the coefficient of environmental SDGs on firm performance is positive and statistically insignificant at a 5% significance level and consistent with our findings. In column 1, firms' specific control variables logarithm total asset, and revenue growth have a positive impact on firms' performance at 1% and 5%, respectively, but audit quality is statistically insignificant. Leverage has a negative impact on firms' performance at a 10 % significance level. Country-specific variable logarithm GDP is positive and statistically significant at 1%, but inflation is negative and statistically insignificant. Juan et al. (2014) stated that firms proactively track environmental concerns such as greenhouse emissions, green technology, and waste reduction as a cost reduction strategy and develop a competitive advantage. More firms are developing efficient resource minimization strategies and mapping up the adoption of environmental SDGs at a strategic level. Granly & Welo (2014) and Bagur-Femenias et al. (2013) found that such environmental considerations promote eco-friendly product differentiation, create a positive image to stakeholders, and a solid positive on the firm's bottom line. Progressive implementation of environmental SDGs promotes firms' commitment to reducing inefficient production, improving the economy of scale, and making significant progress toward environmental profitability. Intended to become more environmentally responsible, firms emphasize greater integration between organization structure and green revolution. This approach helps firms transform environmental concerns from voluntary green initiatives to large-scale, value-driven environmental entities. Moreover, considering the more significant benefits of complying with environmental regulations against regulatory vulnerabilities and penalties, firms deploy effective process-driven environmental policies reflecting both sustainability and achieving managerial goals. Mulaessa & Lin (2021) stated that two major objectives of greater environmental sustainability are zero emissions and cleaner energy. Achieving these objectives required the firm to shift to greener innovation and environmental consciousness into product stewardship. Lopez et al. (2007) outlined those environmentally sustainable goals focusing on ethical

production and consumption and performed better financially, as indicated by higher company value. They attributed better financial outcomes to increasing stakeholder satisfaction and reputation and initiative-taking pursuit of significant environmentally sustainable driven goals. Bocken & Geradts (2020) mentioned that environmental partnerships and circular economy solutions stimulate product innovation, resulting in cost savings and better financial performance.

These findings offer valuable insights. It appears that corporations aiming to attain environmental sustainability must prioritize efforts to curtail the harmful effects of carbon emissions and waste, while striving to create more durable bio-products. Sustainability's environmental facet emphasizes the importance of minimizing the consumption of natural resources to preserve our planet's delicate ecosystem. The natural resource-based view and stakeholder theory both play a crucial role in achieving this goal (Bhandari et al., 2022). The RBV theory highlights that adopting eco-friendly practices can significantly impact a company's financial performance by reducing costs associated with environmental hazards. On the other hand, stakeholder theory suggests that firms should involve stakeholders in decision-making processes related to sustainability and work cooperatively to establish long-term value-creation systems (Schaltegger et al., 2019).

Table 4. Environment SDGs practice impact on financial performance.

Variables	Fixed Affect Regression *ROA*	2SLS *ROA*
ESDG	0.082**	1.63**
	(0.042)	(0.024)
lnTA	0.007***	0.005***
	(0.001)	(0.004)
LE	−0.209*	−0.076
	(0.072)	(0.184)
AQ	0.151	0.274
	(0.563)	(0.753)
RG	0.004**	0.008**
	(0.017)	(0.043)
lnGDP	0.002***	0.064***
	(0.001)	(0.003)
INF	−0.564	−0.113**
	(0.217)	(0.038)
Constant	−0.345***	−0.154*
	(0.062)	(0.083)
R2	0.297	0.317
F test	0.027	-
Hausman Test	0.000	-
Breusch– Pagan test	0.145	-
First Stage F statistics	-	0.000
Durbin Chi Squared	-	0.000
Wu-Hausman F Statistics	-	0.000

Note: The results of effect environmental sustainable developments goals on ROA are reported in this table in fixed effect regression model and 2SLS regression. ***P<0.01 denotes significant at 1 percent level, **P<0.05 denotes significant at 5 percent level, *P<0.10 denotes significant at 10 percent level. F test to ANOVA, Hausman Test to examine the fixed effect model and Breusch– Pagan test to heteroscedasticity test in column 1. We report the p-value of ANOVA, Hausman Test, Breusch– Pagan test, First stage F statistics, Durbin Chi Squared Statistics, and Wu-Hausman F statistic in the table.

Table 5 also displays the effect of social SDGs practices on firm financial performance (ROA) both in fixed effect regression in column 1 and 2SLS model estimation in column 2. The coefficient of social SDGs on firm performance is negative and statistically significant at a 5% significance level in column 1 (coefficient = −0.028). This rejects hypothesis 2. This finding is consistent with Lassala et al. (2021); Di Tommaso & Thornton, 2020 and Garcia-Castro et al. (2010). In column 2, 2SLS regression results show that the coefficient of social SDGs on firm performance is negative and statistically significant at a 10% significance level and consistent with our findings. In column 1, firms' specific control variables logarithm total asset, have a positive impact on firms' performance at 1%. However, leverage has a positive but insignificant impact on firm performance while audit quality and revenue growth are statistically insignificant and have a negative impact on ROA. Country-specific variable logarithm GDP is positive and statistically significant at 1%, but inflation is negative and statistically significant at a 10% significance level. Orlitzky et al. (2003) showed that corporate social performance and financial performance are positively related across various industries and study contexts; however, when it comes to social SDGs practices, the association with financial performance is often found to be negative. The relationship that we observe in our study between social SDGs practices and firm performance is consistent with the findings of Lassala et al. (2021) who found that historically better financial performance had been achieved by businesses that do not include SDGs in their strategy. Khan et al. (2022) also observed the negative significance of social SDGs on firm performance. This begs the question what the underlying reason could be as to why among the scope firms, there was a negative association between social and financial performance. The reason could be manifold – immediate financial cost, resource diversion, stakeholder backlash, poorly executed CSR, regulatory and compliance costs, market conditions and investor expectations, so on and so forth. On the other side, it is possible that the dynamics of traditional CSR programs differ from those necessary to accomplish the social SDGs Adopting and implementing social SDGs practices can be expensive since profits will drop temporarily when funds are put into sustainability projects.

Companies need to balance their pursuit of social sustainability with their bottom-line performance. However, many firms prioritize profitability over social responsibility due to the long-term return on investment associated with social initiatives. Additionally, the social dimension of sustainability is often unclear, leading to doubts about the importance of integrating social practices into daily operations. To embody socially responsible business practices, firms must reflect their core values in their business models. Eizenberg & Jabareen (2017) proposed four interconnected concepts of socially oriented practices - safety, equity, physical urban forms, and consumption - that can positively impact organizational outcomes. Both Social Identity Theory and Social Exchange Theory suggest a strong link between social sustainability and firm performance (Wang et al., 2022). Social Identity Theory posits that a company's engagement in social good can improve employees' perception of the company and encourage better commitment, leading to improved performance. Moreover, the Social Exchange Theory suggests that firms that prioritize their employees' and communities' safety and well-being will see positive attitudes and behaviours toward the company.

Table 5. Social SDGs practice impact on financial performance.

Variables	Fixed Affect Regression *ROA*	2SLS *ROA*
SSDG	−0.028**	−0.572*
	(0.032)	(0.097)
lnTA	0.053***	0.001***
	(0.004)	(0.001)
LE	0.084	0.138*
	(0.132)	(0.051)
AQ	−0.034	0.456
	(0.532)	(0.735)
RG	−0.074	0.155
	(0.188)	(0.231)
lnGDP	0.001***	0.001***
	(0.001)	(0.000)
INF	−0.233*	−0.007**
	(0.057)	(0.042)
Constant	−0.284*	−0.584**
	(0.073)	(0.073)
R2	0.128	0.217
F test	0.004	-
Hausman Test	0.000	-
Breusch– Pagan test	0.186	-
First Stage F statistics	-	0.000
Durbin Chi Squared	-	0.000
Wu-Hausman F Statistics	-	0.000

Note: The results of effect social sustainable developments goals on ROA are reported in this table in fixed effect regression model and 2SLS regression. ***P<0.01 denotes significant at 1 percent level, **P<0.05 denotes significant at 5 percent level, *P<0.10 denotes significant at 10 percent level. F test to ANOVA, Hausman Test to examine the fixed effect model and Breusch– Pagan test to heteroscedasticity test in column 1. We report the p-value of ANOVA, Hausman Test, Breusch–Pagan test, First stage F statistics, Durbin Chi Squared Statistics, and Wu-Hausman F statistic in the table.

In Table 6, we analyzed the effect of country governance (government effectiveness and regulatory quality) on firm performance (ROA) by introducing the interaction terms between environmental SDG and country governance in column 1 and column 2 for fixed effect and column 3 and 4 for 2SLS. The results show that the environmental SDGs have a positive impact on firm performance when government effectiveness exists at a 10% significance level (coefficient = 0.166) in column 1 and regulatory quality exists at a 1% significance level (coefficient =.098) in column 2. We also found that government effectiveness has a positive impact on firm performance at a 5% significance level (coefficient = 0.284) in column 1 and regulatory quality has a positive impact on firm performance at a 5% significance level (coefficient = 0.003) in column 2. The result shows that the coefficient of interaction terms between environmental SDGs and government effectiveness (ESDG* GE) is positive and statistically significant at a 5% significance level (coefficient = 0.873). The coefficient of interaction term between environmental SDGs and regulatory quality (ESDG* RQ) is positive and statistically significant at a 5% significance level (coefficient = 0.157). Compared with the environment SDG coefficient on ROA in government effectiveness (coefficient =.166) in column 1 and regulatory quality (coefficient = 0.098) in column 2, the higher coefficient of the interaction term between environmental SDGs and government effectiveness (coefficient = .873) and regulatory quality

(coefficient = 0.157) means that firm operating in more robust country governance implements environmental goals in business and generate better financial ROA performance., thereby supporting hypothesis 3a (Zhang & Ma, 2021; Hu et al., 2022; Lassala et al., 2021; Khojastehpour & Johns, 2014). Ngobo and Fouda (2012) concluded that country governance that minimizes corruption activities can improve firm financial performance. Governments prioritize the environmental tax credit, information program, and regulatory amendment in their governance structure so firms can adopt environmental sustainability programs in the long and short term without any significant effect on bottom lines. Pahl-Wostl et al. (2018) stated that country governance can facilitate maximum sustainable goals when firms center their business to minimize the adverse effects of environmental quality. When businesses navigate new standards, implementing actions in line with the environmental SDGs can be costly and disruptive at first. However, economic efficiency and the enforcement of robust governance drive systematic improvement in risk management. In addition, identify the moderating financial synergies, extended implementation times throughout complete business cycles, and externality timelines linked to better long-term strategy alignment with environmental SDGs. In column 3, 2SLS reveals that country government effectiveness negatively moderates the effect of environmental SDGs on ROA. When regulations navigate new standards, implementing actions in line with the environmental SDGs can be costly and disruptive at first. This can temporarily lower profits until systemic improvements in risk factors and social consequences are realized across industries. Nollet et al. (2016) discovered that while the variability of national regulations at the time strengthened long-term cash flow potential, it negatively impacted near-term financial performance. Extended implementation times throughout complete business cycles and externality timelines must be examined to identify the moderating financial synergies. However, in column 4, 2SLS confirms that country regulatory quality positively moderates the effect of environmental SDGs on ROA.

Table 6. Moderating effect of country governance on environmental SDGs practice and financial performance.

Variables	Fixed Affect Regression		2SLS	
	Government Effectiveness	Regulatory Quality	Government Effectiveness	Regulatory Quality
	ROA	*ROA*	*ROA*	*ROA*
ESDG	0.166*	0.098***	1.563**	0.084***
	(0.058)	(0.003)	(0.021)	(0.002)
GE	0.284**		−0.843*	
	(0.033)		(0.096)	
RQ		0.003**		−0.034*
		(0.041)		(0.081)
*ESDG *GE*	0.873**		−0.323**	
	(0.032)		(0.042)	
*ESDG *RQ*		0.157**		0.647*
		(0.021)		(0.067)
lnTA	0.013***	0.021**	0.035	0.092**
	(0.005)	(0.041)	(0.225)	(0.022)
LE	−0.038	0.138*	−0.145	−0.383**
	(0.118)	(0.081)	(0.183)	(0.023)
AQ	0.474	0.056	0.073	0.116
	(0.303)	(0.311)	(0.502)	(0.333)

Continued on next page

Variables	Fixed Affect Regression	2SLS		
RG	Government Effectiveness	Regulatory Quality	Government Effectiveness	Regulatory Quality
lnGDP	*ROA*	*ROA*	*ROA*	*ROA*
INF	−0.373**	−0.138**	−0.383**	−1.244**
	(0.048)	(0.044)	(0.481)	(0.018)
Constant	−0.664**	−0.139***	−0.477**	−1.998***
	(0.024)	(0.001)	(0.031)	(0.003)
R2	0.173	0.235	0.186	0.201
F test	0.057	0.031	-	-
Hausman Test	0.000	0.000	-	-
Breusch– Pagan test	0.241	0.336	-	-
First Stage F statistics	-	-	0.000	0.000
Durbin Chi Squared	-	-	0.000	0.000
Wu-Hausman F Statistics	-	-	0.000	0.000

Note: The results of moderating effect of country governance on environmental sustainable developments goals and ROA are reported in this table in fixed effect regression model and 2SLS regression. ***P<0.01 denotes significant at 1 percent level, **P < 0.05 denotes significant at 5 percent level, *P<0.10 denotes significant at 10 percent level. F test to ANOVA, Hausman Test to examine the fixed effect model and Breusch– Pagan test to heteroscedasticity test in column 1. We report the p-value of ANOVA, Hausman Test, Breusch– Pagan test, First stage F statistics, Durbin Chi Squared Statistics, and Wu-Hausman F statistic in the table.

In Table 7, We examined the effect of country governance (government effectiveness and regulatory quality) on firm performance (ROA) by introducing the interaction terms between Social SDGs and country governance in column 1 and column 2 for fixed effect and column 3 and 4 for 2SLS. The results show that the social SDGs have a negative impact on firm performance when government effectiveness exists at a 5% significance level (coefficient = −0.285) in column 1 and regulatory quality exists at a 5% significance level (coefficient = −2.653) in column 2. We also found that government effectiveness has a positive impact on firm performance at a 5% significance level (coefficient = 0.152) in column 1 and regulatory quality has a positive impact on firm performance at a 1% significance level (coefficient = 0.004) in column 2. The results show that the coefficient of interaction terms (SSDG* GE and SSDG* RQ) are positive and statistically significant at 5% and 1% significance level, respectively. The positive interaction coefficient between social SDG and government effectiveness (coefficient = 0.074) has lessened the negative effect of social SDG on ROA in the government effectiveness (coefficient = −0.285) on column 1. The interaction term coefficient between social SDG and regulatory quality (coefficient = 0.037) has lessened the negative effect of social SDG on ROA in the regulatory quality (coefficient = −2.653) on column 2. These findings are consistent with Mcwilliams & Siegel (2020); Johnson (2020); Leinan et al. (2022) and Ioannou & Serafeim (2015). Betti et al. (2018) and Drebee et al. (2020) suggested that having the governance policy influence on social performance encourages firms to attain SDG goals and maintain financial stability through protecting the rights and benefits of the stakeholders. Companies are more likely to engage in social SDGs if they are more aligned in the national context. Companies have realized that focusing only on

the social determents might not be enough to operate their businesses for long time in this competitive environment unless an active functional government responds appropriately for long-term resilience in SDG adoptions. 2SLS confirms that country governance positively moderates the effect of environmental SDGs on ROA in column 3 and 4.

Table 7. Moderating effect of country governance on social SDGs practice and financial performance.

Variables	Fixed Affect Regression Government Effectiveness *ROA*	Regulatory Quality *ROA*	2SLS Government Effectiveness *ROA*	Regulatory Quality *ROA*
SSDG	−0.285**	−2.653**	−0.720*	−0.159*
	(0.027)	(0.043)	(0.001)	(0.067)
GE	0.152**		−0.121**	
	(0.041)		(0.042)	
RQ		0.004***		0.003***
		(0.002)		(0.001)
*SSDG *GE*	0.074**		0.029**	
	(0.032)		(0.025)	
*SSDG *RQ*		0.037***		1.328***
		(0.001)		(0.002)
lnTA	0.312**	0.023***	0.532	0.374**
	(0.021)	(0.001)	(0.121)	(0.017)
LE	0.983**	0.138*	0.192*	0.138
	(0.043)	(0.063)	(0.081)	(0.174)
AQ	0.128	0.114	0.649	0.283
	(0.263)	(0.294)	(0.334)	(0.384)
RG	0.019***	−0.091	0.217**	0.484*
	(0.005)	(0.123)	(0.038)	(0.082)
lnGDP	0.064***	0.129***	0.007***	0.073***
	(0.000)	(0.001)	(0.001)	(0.001)
INF	−0.192***	−0.121**	−0.481	−0.431
	(0.002)	(0.049)	(0.217)	(0.149)
Constant	−0.079***	−0.474**	−0.482**	−0.938*
	(0.005)	(0.041)	(0.027)	(0.078)
R2	0.28	0.11	0.12	0.21
F test	0.001	0.004	-	-
Hausman Test	0.000	0.000	-	-
Breusch– Pagan test	0.183	0.133	-	-
First Stage F statistics	-	-	0.000	0.000
Durbin Chi Squared	-	-	0.000	0.000
Wu-Hausman F Statistics	-	-	0.000	0.000

Note: The results of moderating effect of country governance on social sustainable developments goals and ROA are reported in this table in fixed effect regression model and 2SLS regression. ***P<0.01 denotes significant at 1 percent level, **P<0.05 denotes significant at 5 percent level, *P<0.10 denotes significant at 10 percent level. F test to ANOVA, Hausman Test to examine the fixed effect model and Breusch– Pagan test to heteroscedasticity test in column 1. We reported the p-value of ANOVA, Hausman Test, Breusch– Pagan test, Durbin Chi Squared Statistics, and Wu-Hausman F statistic in the table.

Strong country governance is crucial for delivering superior sustainability performance. Countries with robust governance structures emphasize building trust and fostering long-term relationships with different players in sustainability loops that help the organization take measurable sustainability programs that might happen in the long run. Incorporating a governance system in country-level sustainability promotes better ESG reporting, reduces information asymmetry, promotes a better ownership structure, yields more return in sustainable financing in green bonds, and enhances regulation in industry. In countries with higher SDG scores, firms must demonstrate their commitment to ESG practices to build trust and credibility with local stakeholders such as employees, customers, suppliers, and creditors. The legitimacy theory suggests that in countries with higher SDG scores, stakeholders are more aware of sustainable development and are more likely to support the country's efforts to achieve the SDGs (Hoang et. al. 2023).

In hypothesis 1, hypothesis 2, hypothesis 3a, and hypothesis 3b, Durbin chi-squared statistics and Wu-Hausman F statistic tests identified no effect of endogenous variables. We also used the first-stage F statistics to confirm the instruments for weak identification.

8. Robustness check

We conducted robustness tests to confirm the relationship between environmental and social SDGs and firm performance by average total assets and average capital on our sample data (Wang et. al., 2022). We divided the total sample firms into two groups: Small firms (i.e., lower than the mean value of total capital and total asset in sample) and large firms (i.e., greater than and equal to the mean value of total capital and total asset in sample) in Table 8. The coefficient environmental SDGs positive and statistically significant on ROA based on average asset and capital classification, which supports the results found hypothesis 1 in (column 1–4). The coefficient social SDGs are negative and statistically significant on ROA only for small asset and capital driven firms which supports the results found hypothesis 2 in (column 6 and 8). However, this result for large asset and capital-based firm shows that social SDGs have a positive impact on firms' performance. Large companies have a more significant socio-economic impact in the areas where they operate due to their vast resources and considerable influence. According to the stakeholder and legitimacy theories, larger firms tend to have a larger number of stakeholder groups, which means they receive greater attention from the public. Legitimacy theory states that it is not uncommon for large companies to face greater pressure to disclose more sustainability information. This is because large firms have a responsibility to meet the informational needs of their different stakeholders and legitimize their business activities to society (Alsaeed, 2006). Furthermore, agency theory posits that larger firms tend to disclose more sustainability-related information due to higher agency costs resulting from information asymmetry between managers and shareholders (Giannarakis, 2014).

Table 8. Robustness check.

Variables	Environmental SDGs Average Total Asset Large Firm *ROA*	Environmental SDGs Average Total Asset Small Firm *ROA*	Environmental SDGs Average Capital Large Firm *ROA*	Environmental SDGs Average Capital Small Firm *ROA*	Social SDGs Average Total Asset Large Firm *ROA*	Social SDGs Average Total Asset Small Firm *ROA*	Social SDGs Average Capital Large Firm *ROA*	Social SDGs Average Capital Small Firm *ROA*
ESDG	0.095***	0.019*	0.431**	−0.183				
	(0.002)	(0.899)	(0.033)	(0.141)				
SSDG					0.003***	−0.182	0.061**	−0.003**
					(0.001)	(0.177)	(0.021)	(0.022)
lnTA	0.231**	1.642*	−0.341**	0.738	0.122***	−0.974**	0.032**	−0.662***
	(0.048)	(0.068)	(0.028)	(0.218)	(0.002)	(0.035)	(0.021)	(0.091)
LE	0.114	−0.164***	0.772*	−0.738**	−0.011**	−0.003***	−0.902**	−0.022***
	(0.163)	(0.001)	(0.081)	(0.031)	(0.041)	(0.001)	(0.028)	(0.003)
AQ	1.101	0.073	−0.383	1.736	−0.018	1.021	−0.073	0.556
	(0.601)	(0.372)	(0.356)	(0.419)	(0.311)	(0.222)	(0.292)	(0.172)
RG	−0.073*	0.029***	−2.004**	1.939**	−0.124*	0.088**	−0.005***	0.811**
	(0.0579)	(0.001)	(0.021)	(0.044)	(0.091)	(0.033)	(0.002)	(0.011)
lnGDP	0.327***	1.483***	0.007***	0.754***	0.021***	0.031***	0.008***	0.005***
	(0.002)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)
INF	−0.125***	−0.004**	0.003**	−0.075*	0.029**	−0.007***	0.927**	−0.089**
	(0.001)	(0.031)	(0.042)	(0.086)	(0.063)	(0.001)	(0.036)	(0.022)
Constant	−0.086**	−0.637*	−0.052***	−0.142**	−0.009***	−0.111**	−0.019***	−0.553*
	(0.041)	(0.063)	(0.002)	(0.039)	(0.001)	(0.029)	(0.000)	(0.073)
R2	0.111	0.157	0.219	0.183	0.163	0.142	0.249	0.325
F test	0.003	0.088	0.021	0.001	0.045	0.035	0.061	0.087
Hausman Test	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Breusch–Pagan test	0.082	0.067	0.113	0.173	0.081	0.145	0.133	0.092

Note: The results of effect environmental and social sustainable developments goals on ROA are reported in this table in fixed effect regression model for robustness check by average total assets and average capital. ***P<0.01 denotes significant at 1 percent level, **P<0.05 denotes significant at 5 percent level, *P<0.10 denotes significant at 10 percent level. F test to ANOVA, Hausman Test to examine the fixed effect model and Breusch – Pagan test to heteroscedasticity test in column 1. We report the p-value of ANOVA, Hausman Test, Breusch – Pagan test in the table.

9. Implications

9.1. Practical implications

The results of our research demonstrate how important it is for corporate strategies to incorporate the Sustainable Development Goals (SDGs) to improve financial success. In addition to being in line with global sustainability agendas, this integration gives businesses a competitive advantage.

Organizations are encouraged to incorporate the SDGs into their strategy frameworks in a methodical manner. To determine which objectives, have a direct bearing on their operational domains and business models, a comprehensive investigation is required. Companies can effectively allocate resources to projects that offer the greatest potential impact on sustainability and financial results by

concentrating on pertinent SDGs. For instance, a firm in the manufacturing sector might prioritize SDGs related to responsible consumption and production (SDG 12), clean energy (SDG 7), and climate action (SDG 13). Businesses can discover environmentally viable initiatives by doing a thorough cost-benefit analysis of environmental sustainability strategies, which can range from lowering greenhouse gas emissions to integrating carbon tax consequences. This analytical method helps develop strategies that improve financial performance while meeting environmental obligations.

Businesses must fully commit to implementing the social SDGs, as demonstrated by budgets and resources allocated. This commitment goes above and beyond simple compliance to promote equity and social well-being. To ensure that social goals like fair labor, equality, and education are actively pursued and funded, businesses should strive to integrate social aims into their fundamental operations. Creating an environment that is conducive to the implementation of the SDGs requires active cooperation between business management and governance organizations. The main goals of this collaboration should be to create regulations, incentives, and clear rules that make it easier for businesses to implement the SDGs into their daily operations. Interacting with legislators can assist in modifying these frameworks such that they support company objectives while also being in line with more general sustainability objectives.

To achieve the SDGs, innovation is essential. Businesses should spend money on R&D to create innovative, sustainable goods, services, and procedures. This innovation ought to be applied to business models as well since these incorporate sustainable practices within companies' major value propositions. Businesses must create strong monitoring and reporting systems to assess the success of SDG-related projects. In addition to increasing trustworthiness among stakeholders, open reporting on SDG indicators offers vital information for ongoing development and compliance with international sustainability norms. Businesses are realizing more and more how crucial environmental sustainability is to their operations and that they must implement cutting-edge methods that lessen their environmental effect if they are to make a significant effort toward the Environmental SDGs, which include climate action (SDG 13), affordable and clean energy (SDG 7), and clean water and sanitation (SDG 6). To reduce waste, this entails making investments in renewable energy sources, putting in place water-efficient procedures, and embracing the circular economy. By doing this, businesses improve their competitive edge and performance in addition to helping to achieve global environmental goals and realizing cost and operational efficiencies.

By aligning with Social SDGs, which include gender equality (SDG 5), excellent education (SDG 4), and good health and well-being (SDG 3), businesses may significantly contribute to tackling some of the most important societal issues. This engagement entails guaranteeing equity throughout the supply chain, fostering inclusive workplaces, and assisting with community health and education efforts. Businesses that actively support social well-being are likely to see increases in consumer engagement, staff happiness, and brand loyalty, which will fuel both company success and social impact.

9.2. Policy implications

This study also provides practical implications for shareholders, regulators, and managers. Effective implementation of SDGs requires firms to proactively respond to social and economic vulnerabilities in innovative and efficient ways. Managers can prioritize SDGs involvement in the

regular decision-making process and ensure the organization's credibility by developing an organic bond between corporate sustainability performance and firm stability. In addition, SDGs-driven management practices can contribute to developing a competitive advantage by lowering the risk premium and setting a clear benchmark to practice in the future. From shareholders' perspective, the transition to achieving SDGs shows investors a unique value proposition. Investors can easily commit to SDGs orientation by embracing cleaner resource initiatives and disclosing financial and non-financial sustainable opportunities. Furthermore, investors can provide strategic direction and ingest entrepreneurial feedback to solve any pressing issue of SDGs more creatively and critically. Regulations should develop a deeper understanding of SDGs bottlenecks that create a barrier for stakeholders to implement SDGs. In addition, regulators must check and balance the overall government system and pursue educational, environmental, and social programs to promote the positive impact of SDGs implementation.

Legislators ought to set up incentive programs that compensate businesses for adhering to the SDGs. Tax breaks, funding for environmentally friendly initiatives, and awards ceremonies for exceptional contributions to sustainability are a few examples of these. By considerably lowering the obstacles to adopting sustainable practices, such incentives can make it financially feasible for businesses to fund SDG-related initiatives. It is crucial to create and implement explicit legal frameworks that require or promote SDG alignment. These frameworks need to be made to make sure that businesses are driven to surpass these benchmarks in addition to adhering to the bare minimal sustainability requirements. Requirements for sustainability reporting and disclosures can improve business sustainability activities' accountability and transparency.

Governments ought to offer businesses, particularly small and medium-sized enterprises (SMEs), resources and technical assistance to support them in executing SDG projects. This assistance might be provided through platforms that facilitate the exchange of best practices between companies, training courses, and access to eco-friendly technology. Promoting public-private cooperation for sustainability initiatives can help to capitalize on each sector's advantages. These collaborations can tackle intricate sustainability issues that surpass the capabilities of lone companies, stimulating creativity and having a significant impact on sustainability objectives.

International cooperation is essential for policy harmonization, information sharing, and resource mobilization because of the global dimension of the SDGs. International frameworks and agreements that promote sustainable development and ease cross-border cooperation on sustainability projects should be strengthened by policymakers. Encouraging national governance is essential to achieving the SDGs for the environment and society. It is crucial to implement policies that support the conditions necessary for sustainable growth. This entails putting in place governance structures to oversee progress, enforce rules, and communicate openly and inclusively with a variety of stakeholders in addition to developing frameworks and incentives for companies to pursue sustainability goals. Countries may improve national and international sustainability outcomes by fortifying their governance frameworks, which will in turn provide businesses with a secure and encouraging environment in which to meaningfully contribute to the SDGs.

Policies that incentivize companies to incorporate the Sustainable Development Goals (SDGs) into their core operations are necessary, as evidenced by the relationship between company performance and compliance with sustainability requirements. Governments must think about enacting

laws that would not only require businesses to adhere to social and environmental norms, but also honor and incentivize those who perform exceptionally well in this area. These policies might be public recognition initiatives, access to preferential funding circumstances, or alternative tax rates. When regulatory frameworks are in line with sustainable company performance, businesses are incentivized not only by compliance requirements but also by the possibility of improved market placement, financial returns, and reputation. By addressing these practical and policy implications, businesses and governments can significantly advance the integration of Sustainable Development Goals into corporate strategies, driving towards a more sustainable future while also attaining economic growth and financial performance.

10. Conclusions

In this study, we analyze the relationship between economic and social SDGs practices, country governance and firm financial performance between 2017 and 2021. While most studies have focused on the overall impact of the SDGs on firm financial performance, this study is one of the first to break down the overall SDGs into economic SDGs and social SDGs practices. Our primary model investigated the relationship between environmental and social SDGs and firm financial performance, controlling firms and country-specific variables. Then, we extended our primary model by introducing country governance variables to see whether the impact of country governance can positively moderate the relationship between environmental and social SDGs and financial performance. We developed each of the models both in fixed effect panel regression and 2SLS regression method at the 1%, 5%, and 10% significance levels.

We found that environmental SDGs have a positive and significant impact on financial performance. Improving social and environmental practices can have a significant impact on a company' s overall performance in the long run. By adopting sustainable practices, companies can not only reduce their environmental footprint but also enhance their reputation and attract socially conscious consumers. Companies that adopt better sustainable development practices after facing pressure from various stakeholders can improve their financial performance (Sarkis et al., 2010). Developing effective waste management strategies, implementing supply chain management, and adopting environmentally friendly technologies can help minimize environmental impact and disposal costs, increasing business efficiency and new revenue streams (Goldsmith & Samson, 2005). Additionally, enhancing environmental regulations and standards can foster stakeholder credibility, reflecting positively on a company's performance. Maintaining transparency about SDG practices is essential to building strong relationships between stakeholders and the company, ultimately improving firm performance. The coefficient of social SDG on firm performance is negative and statistically significant. Improving social SDGs can have a positive impact on firm performance, just as improving environmental SDGs can. Social SDGs, such as those related to access to education, healthcare, and gender equality, can help create a more stable and productive workforce and improve a company's reputation among stakeholders. According to Rosati and Faria (2019), implementing social SDG practices in business improves activities associated with business planning, implementation, and monitoring, as well as communication with stakeholders. Companies can build a competitive edge by implementing moral business practices, including non-financial reporting and sustainable business

models (Stubbs & Cocklin, 2008). Employee skill and capability improvements in education and training programs will boost productivity and creativity inside the company. Additionally, opportunities for continuous learning help staff members adjust to changes in the business environment and technology, which will increase the organization's resilience and agility. Another noteworthy thing in social SDG practices is reducing inequalities in the workplace. The advancement of gender equality within business environments cultivates various perspectives, resulting in enhanced decision-making and more inventive resolutions. Encouraging an inclusive work environment that values diversity and equality improves social cohesiveness, and employee teamwork will boost creativity and innovation within the firm. We observe that the coefficient of interaction terms between environmental SDGs and country governance is positive and statistically significant. Moreover, the coefficient interaction terms between social SDGs and country governance are positive and statistically significant to reduce the negative impact of social SDG on firm performance. Robust and sustainable friendly country governance can significantly enhance firm performance by creating a more conducive environment for business operations. Consistent implementation of rules and procedures promotes fairness among enterprises and minimizes ambiguity, fostering sustained investment in firms and contributing to firm performance. Transparent and unambiguous regulations provide firms with clarity and confidence that will encourage firm investment and business development. Enforcing anti-corruption legislation and regulations could be another critical practice of country governance that will provide a fair business environment based on merit rather than bribery or other unethical behavior. Finally, we also did the robustness test on our analysis based on the firm's average capital and average assets. The findings almost hold the same.

11. Limitations, and future studies

This study has several limitations. First, we adopted the subjective measurement technique of content analysis to measure the environmental and social SDGs implementation. Content analysis is unlikely to measure SDG's objective insight since outcomes depend on researcher discretion. Second, we concentrated on a few industries and is primarily based on business practice; however, measuring the true impact of achieving SDGs practices on firm performance should consider multidimensional treatments of sustainability agendas.

We did not analyze the research findings from theoretical implication perspectives, such as a stakeholder or resource-based view. Instead, we focus on finding the relationship between SDGs goals and firm performance. Future studies may consider analyzing the SDG implication on the firm performance market or TobinQ in different industries. Further study can consider how firms make false claims of contributing to SDG implementations and the impact of SDG washing on firms' reporting framework. It is also interesting to see how firms react to adopting SDGs practices in uncertain times like covid-19 or recession time.

Use of AI tools declaration

The authors declare that they have not used Artificial Intelligence (AI) tools in the creation of this article.

Conflict of interest

The authors declare no conflicts of interest.

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