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## Article

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# Assessing the moderating role of ESG performance on corporate governance and firm value in developing countries

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## ABSTRACT

This study investigates the effects of corporate governance (CG) attributes on firm value (FV), considering the moderating effect of ESG performance. This study considers the three strands of corporate governance, thus board's structural, diversity and process attributes, which have not been considered in prior studies. The study employed the Common Correlated Effects Mean Group (CCEMG) and the Augmented Mean Group (AMG) for the empirical analysis. The study utilized a quantitative research methodology sourcing data from 362 manufacturing companies from Sub-Saharan Africa from 2010 to 2022. The findings indicate that regarding board diversity attributes, both gender diversity and the presence of foreign nationals exhibit positive associations with FV. Regarding board structural attributes, independent boards and board size also influenced FV positively. However, CEO duality shows a negative association with FV. Regarding the process attributes, holding regular board meetings enhances FV, while low meeting attendance negatively affects FV. Moreover, the study also evidenced that ESG performance exerts a substantial positive impact on the link between CG and FV. The findings underscore the need for policymakers to enact stringent regulations compelling firms to integrate ESG principles into their governance structures, as it enhances firm value.

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## 1. Introduction

Corporate governance (CG) practices have garnered significant attention on the global stage, reflecting the critical role of effective governance in shaping economic outcomes and investor confidence (Sun et al., 2023). The intricate relationship between corporate governance practices and firm value (FV) is paramount in navigating the complexities of today's business landscape. Moreover, Environment, Social, and Governance (ESG) considerations are emerging as key factors influencing FV, further emphasizing the importance of governance in driving sustainable outcomes (Zhou et al., 2024). The development of financial institutions, the continuous worldwide financial crises, and the quick expansion of businesses have all contributed to the advancement of CG practices. In order to improve a company's reputation, increase shareholder trust, and reduce the likelihood of fraudulent activity, good CG is crucial (Osei et al., 2019). Moreover, effective CG supports the formal decision-making to reduce risks, controls hazards, and aids businesses in achieving their objectives (Orazalin et al., 2024). Similarly, ESG criteria measure an organization's ethical behaviour, social responsibility, and environmental effect, demonstrating its dedication to sustainability and stakeholder satisfaction. These elements now play a crucial role in determining investment choices, shareholder activism, and public opinion of firms. Additionally, it has been shown

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that incorporating ESG factors into company plans may improve risk management skills and boost FV (Ntim & Soobaroyen, 2013).

There is a pressing need to understand how the rapidly evolving ESG landscape, characterized by a diverse range of environmental, social, and ethical considerations, interacts with established CG structures and subsequently influences FV in developing countries, particularly Sub-Saharan Africa (SSA). However, there is still limited consensus in this field. The majority of previous studies relied on theories like agency, legitimacy, and resource dependence and focused their studies on Board characteristics and company value (Bhagat & Bolton, 2019; Danoshana & Ravivathani, 2019; Khatib & Nour, 2021; Mahmood et al., 2023), CG and firm performance (Akbar et al., 2019; Almoneef & Samontaray, 2019), Board gender diversity attributes and firm performance (Nur-Al-Ahad et al., 2019; Shao, 2019) and board structural attributes and firm continuity (Zhou et al., 2024). Additionally, prior studies have neglected the potential moderating influence of ESG performance in this dynamic. None the theoretical frameworks nor the empirical studies have examined how the three strands of CG including diversity, structural and process attributes influence FV and the potential role of ESG performance on this link. The closest study examined the impact of technology on CG and firm performance within the context of the least developed nations (Chang et al., 2024). This gives rise to a substantial gap in the literature. Hence, this research explores how the strands CG affects company value while considering the potential role ESG performance plays in this association. Specifically, the study seeks to achieve the following objectives. (1) To examine the impact of board diversity attributes on firm value. (2) To explore the impact of board structural attributes on firm value. (3) To investigate the impact of board process attributes on firm value. (4) To examine the role of ESG performance on the link between CG and firm value. This study relied on the stakeholder and legitimacy theoretical framework to examine this nexus due to its offers a robust framework that recognizes the multifaceted interests of stakeholders beyond shareholders, enabling a comprehensive analysis of how CG practices, ESG performance, and FV interplay in developing country contexts, thereby providing invaluable insights for sustainable growth strategies (Alatawi et al., 2023). The motivation of the study stems from the pressing need to comprehensively examine the intertwined dynamics of ESG performance, corporate governance, and FV in developing countries, where sustainable growth strategies are paramount for both economic development and social progress. By uncovering the moderating effect of ESG performance in this association, the study aims to provide actionable insights that empower stakeholders to navigate the complexities of governance and sustainability, driving positive impacts on financial performance and societal well-being in emerging market contexts.

The study's novelty stems from its distinct emphasis on its investigation into the moderating influence of ESG performance on the association between CG and FV. This can illuminate the pathway to sustainable and ethically driven business practices, ultimately shaping the financial success and societal impact of these emerging countries in SSA. Also, the study considers three major attributes of CG: diversity attributes, structural attributes, and process attributes. This classification has not been done in prior studies. Furthermore, the study employed stock price as a proxy for FV, in contrast to earlier research that measured FV using profitability indicators. Using stock price as a proxy for FV provides a real-time reflection of market perception and investor confidence, offering a more dynamic and comprehensive understanding compared to traditional profitability indicators. Lastly, the study performed an additional robustness check using different explained variable and estimator to ensure the validity and reliability of our study findings for effective policy decision-making.

Therefore, the study makes the following contributions to the existing body of literature. First, it broadens and enriches the existing body of literature concerning the influence of CG on FV by providing nuanced insights into the mechanisms through which CG practices impact firm performance, particularly in the context of developing countries. This contributes to a deeper understanding of the complexities of CG and its implications for value creation. Second, the examination of the role of ESG performance on the association among CG and FV adds significant value to the literature by elucidating how environmental, social, and governance considerations interact to influence FV. By uncovering the nuanced dynamics of this relationship, the study contributes to advancing theoretical understanding and practical implications for sustainable business practices. Third, employing the stakeholder and legitimacy theoretical perspective contributes to a more comprehensive analysis of the governance-performance link by considering the broader societal and stakeholder context within which firms operate. This theoretical

approach allows for a deeper exploration of the mechanisms through which firms manage legitimacy concerns and build stakeholder trust, thereby enriching scholarly discourse on CG and sustainability. Fourth, the implications of the findings offer valuable insights for policymakers, investors, and corporate leaders seeking to enhance CG practices and ESG performance to drive sustainable value creation. By providing actionable recommendations grounded in empirical evidence, the study informs strategic decision-making and fosters positive societal impacts, ultimately contributing to the advancement of both academic scholarship and real-world business practices.

## 2. Background

The study of CG and its impact on FV is of paramount importance in today's dynamic business landscape, particularly in the context of developing nations (Orazalin et al., 2024). Over the past few decades, developing countries have experienced rapid economic growth and expansion, accompanied by significant changes in regulatory frameworks, market dynamics, and investor expectations. As a result, understanding the intricacies of CG mechanisms and their implications for firm performance has become increasingly crucial for policymakers, investors, and corporate leaders alike (Ntim & Soobaroyen, 2013). In recent years, developing countries have witnessed a surge in CG reforms aimed at enhancing transparency, accountability, and investor protection. These reforms have been driven by a growing recognition of the importance of good governance practices in fostering investor confidence, attracting foreign investment, and promoting sustainable economic development (Chang et al., 2024). Governments and regulatory authorities have implemented various measures, such as enacting new laws, establishing regulatory bodies, and promoting CG codes, to strengthen the governance framework and align it with international best practices (Alatawi et al., 2023). Moreover, the global shift towards ESG considerations has placed additional pressure on firms to integrate sustainability principles into their CG practices (Zhou et al., 2024). Increasingly, investors, consumers, and other stakeholders are demanding greater transparency and accountability regarding environmental and social issues, as well as ethical business conduct (Sun et al., 2023).

Amidst these regulatory, reform, and policy developments, developing countries present a unique and compelling context for studying the relationship between CG and FV. Consequently, the effectiveness of CG mechanisms in driving firm performance may vary significantly across different contexts, highlighting the need for context-specific research to inform policy and practice (Jan et al., 2021). Moreover, developing countries are home to a diverse range of industries, sectors, and market conditions, offering rich opportunities for empirical research and comparative analysis (Alatawi et al., 2023). By examining CG practices and their impact on FV in these contexts, researchers can gain valuable insights into the underlying mechanisms driving governance-performance dynamics and identify factors that contribute to value creation and sustainability (Alatawi et al., 2023).

In essence, the regulatory, reform, and policy issues shaping the research context in developing countries underscore the significance of studying the relationship between CG and FV in this setting (Zhou et al., 2024). By exploring these dynamics, researchers can contribute to the advancement of knowledge and understanding in the field of corporate governance, inform policy decisions, and support the development of effective governance frameworks that promote sustainable economic growth and prosperity (Chang et al., 2024).

## 3. Theoretical literature review

### 3.1. Stakeholder theory

The stakeholder framework affirms the significant interests and considerations of all stakeholders, extending beyond shareholders, and exerts a substantial influence on a company's value (Sun et al., 2023). This involves putting in place efficient CG mechanisms, including ensuring the independence and composition of the board of directors, as well as aligning executive compensation with long-term performance, with the primary goal of ensuring that the company's decisions and actions genuinely consider the needs and concerns of various stakeholders, which encompass customers, employee,

suppliers, and the broader community (Ntim & Soobaroyen, 2013). This approach can engender increased trust, bolstered reputation, reduced regulatory and legal risks, and enhanced long-term sustainability, all of which ultimately contribute to an augmented FV (Anwar & Aziz, 2019). Stakeholder theory further acknowledges that immediate profits do not solely determine a company's value, but it is also contingent on its ability to establish and sustain favourable relationships with all parties affected by its operations. The theory suggests that when companies prioritize transparency, accountability, and ethical conduct within their governance structures, they are more likely to construct a formidable and enduring competitive advantage, Capable of exerting positive effects on their financial performance and overall perceived value among investors, customers, and the public (Elmghaamez et al., 2023).

Furthermore, from the viewpoint of stakeholder theory, when companies prioritize ESG performance within their governance structures, they are better positioned to cultivate trust, mitigate risks, and capitalize on opportunities, ultimately bolstering their long-term value creation (Chang et al., 2024). This approach aligns seamlessly with stakeholder theory's conviction that a company's prosperity is intricately linked to its ability to cater to the multifaceted interests of all stakeholders, thus effecting a favourable influence on its value that transcends transient financial gains (Wu et al., 2020).

### **3.2. Institutional theory**

The institutional theoretical perspective posits that organizations, including corporations, are moulded by and respond to the norms, regulations, and structures prevailing in their external environment (Alatawi et al., 2023). The institutional framework within which a firm operates holds significant sway over its performance and, consequently, its value. CG traits, like the makeup of the board, executive compensation practices, and the extent of shareholder rights, are deeply enmeshed within the institutional fabric of a given country or industry. Firms that adhere to sound governance practices in harmony with the established institutional norms are more likely to foster trust, attract investors, and ultimately generate value for shareholders (Sun et al., 2023). Moreover, the institutional theory emphasizes the idea of isomorphism, which is the tendency of businesses to mimic the governance procedures of their rivals and peers in order to obtain credibility and societal acceptance (Orazalin et al., 2024). This imitation often results in the adoption of best practices and the creation of uniform governance guidelines, which may improve the value and performance of the company as a whole.

Moreover, by acting as a means of bringing a company's practices into compliance with stakeholder and societal expectations, The connection between CG and FV can be significantly impacted by ESG performance, especially when viewed through the lens of institutional theory (Chang et al., 2024). As per the concept, for effective CG structures, a company's decision-making processes should be transparent, accountable, and aligned with the interests of shareholders. The integration of ESG performance into governance structures has the potential to enhance sustainability and reputation in the long run, as well as reduce the risks connected with environmental and social issues (Ntim & Soobaroyen, 2013). Through the attraction of ethical partners, investors, and consumers, this alignment promotes institutional legitimacy and support, which may enhance FV and make the organization more valuable and resilient in the eyes of many stakeholders.

## **4. Empirical review and hypothesis development**

### **4.1. Gender diversity and firm value**

Consistent with stakeholder theory, gender diversity can influence a company's value by bolstering its reputation and associations with a range of stakeholders, including customers, employees, and investors (Chang et al., 2024). The presence of a diverse workforce contributes to the cultivation of a corporate culture that is more inclusive and ethical. This, in turn, can attract and retain high-calibre talent, appeal to conscientious consumers, and help mitigate potential risks related to gender-related issues (Grassmann, 2021). Additionally, viewed through the lens of institutional theory, organizations that embrace gender diversity align themselves with prevailing societal norms and legal mandates. This alignment not only



diminishes the risk of regulatory penalties and harm to reputation but also signals a commitment to corporate social responsibility. In the long run, these actions improve financial performance and value and increase stakeholder satisfaction (Gerged & Agwili, 2020).

Several studies that examined related connections between gender diversity and FV yielded favourable results. For instance, Xie et al. (2022), revealed that Companies with a greater representation of women on their boards demonstrated higher return on equity, sales, and invested capital, signifying a favourable association between gender diversity and FV. Reena Aggarwal et al. (2019) also observed that companies with a more substantial representation of women in top management positions were more inclined to engage in corporate acquisitions that yielded enhanced shareholder value. Additionally, Gerged and Agwili (2020) study on Fortune 500 companies revealed that entities with a higher proportion of women in leadership roles demonstrated superior financial performance compared to their counterparts, emphasizing a positive correlation between gender diversity and business value. Conversely, Stender and Rojahn (2020) analysed an extensive dataset of U.S. companies and found that, although gender diversity on boards may yield some advantages, it does not uniformly lead to enhanced firm financial performance. This suggests that the connection between gender diversity and FV is complex and depends on specific circumstances. Drawing from the existing literature, we make the assumption that:

H1: Gender diversity on the board has a positive link with the value of a firm.

#### **4.2. Foreign nationals and firm value**

From the institutional theory perspective, foreign nationals can be regarded as a response to institutional pressures, manifesting a commitment to internationalization and adherence to global best practice (Zhou et al., 2024). This commitment can bolster the firm's legitimacy and competitiveness in the worldwide market, exerting a favourable influence on its overall value (Flammer et al., 2019). Also, in accordance with stakeholder theory, the inclusion of individuals with varied cultural backgrounds and experiences equips the company with a better understanding and ability to address the needs and concerns of a more extensive spectrum of stakeholders, including international customers, suppliers, and investors (Alatawi et al., 2023). Consequently, this could lead to improved standing, expanded entry into global markets, and stronger relationships with stakeholders, culminating in an augmented FV.

Li et al. (2020) discovered that firms with board members of foreign origin had an increased capacity to access global markets and forge strategic partnerships. Furthermore, this observation was supported by Hatane et al. (2019), who uncovered that the existence of directors from abroad in companies showed a correlation with superior ability to identify and mitigate risks related to international operations. These companies demonstrated a heightened proficiency in managing geopolitical, market, and regulatory risks, contributing to an enhanced business value over time. Contrary, Iqbal et al. (2019) study, involving 75 companies with foreign nationals on their boards, uncovered cultural misalignment and conflicts within the decision-making processes which leads to low firm performance. Drawing from the existing body of literature, we put forth the subsequent hypotheses:

H2: The inclusion of individuals of foreign nationality on the board has a favourable impact on FV.

#### **4.3. Board size and firm value**

Per stakeholder theory, the influence of board size on value of a firm depends on the extent to which it facilitates effective engagement with stakeholders and governance (Orazalin et al., 2024). A larger board can accommodate a broader spectrum of stakeholder interests, which can result in more informed decision-making, an enhanced reputation, and ultimately, an improved business value. Moreover, from an institutional theory perspective, a larger board size leads to more comprehensive discussions and better consideration of various viewpoints, ultimately resulting in improved strategic decisions and higher firm performance (Brahma et al., 2021). Moreover, a larger board size may also reflect the firm's ability to

attract experienced and influential individuals, which can enhance its reputation and stakeholder confidence, positively impacting FV (Brahma et al., 2021).

In a notable study by Jia et al. (2019), a favourable link between the size of the board and the value of a firm was established. The argument put forth was that larger boards, characterized by a variety of perspectives and expertise, prove to be more proficient in both supervising and advising management, consequently contributing to an enhancement in the firm's performance. Additionally, research by Raj Aggarwal et al. (2019) supported this perspective, affirming that large board size is favourably associated with value of a firm. The authors contended that bigger boards are better equipped to exercise effective CG, given their capacity to represent the interests of various stakeholders and ensure the protection of shareholders' rights. Singh and Misra (2021) research provided further support for this position by showing a positive correlation between board size and company value, particularly in the setting of family-owned enterprises. A larger board's ability to alleviate agency conflicts between family owners and professional managers was believed to lead to improved firm performance and enhanced value. However, a later study by Jiang and Kim (2020) presented contrasting results, revealing an adverse link between board size and company profitability. The authors proposed that excessively expansive boards might lead to difficulties in coordination and decision-making, ultimately resulting in a decrease in profitability. In alignment with the trends observed in the prior studies, we posit the following:

H3: A positive correlation exists between the size of the board and firm value.

#### **4.4. Board independence and firm value**

The stakeholder theory upholds that board independence plays a role in shaping FV by fostering well-balanced decision-making that considers all stakeholders' concerns, ultimately leading to improved long-term sustainability and a positive reputation (Zhou et al., 2024). This, in turn, contributes to enhancing the firm's value. Moreover, from the standpoint of institutional theory, the degree of board independence can be influenced by the prevailing institutional norms and regulations, which may vary across different geographical regions and industries (Bhagat & Bolton, 2019). In specific contexts, a higher level of board independence may be perceived as a sign of strong governance, favourably influencing the value of a firm.

A study by Danoshana and Ravivathani (2019) found a positive association between board independence (measured by the proportion of independent directors) and value of a firm. Companies with a higher proportion of independent directors were associated with higher market valuations. This aligns with that of Merendino and Melville (2019), who found that greater board independence can lead to better monitoring of managerial actions, leading to a decline in FV. This was supported by Kyere and Ausloos (2021) who found a positive correlation between board independence and financial performance. Firms with more independent directors tend to exhibit stronger financial performance, which can contribute to higher value of a firm. Also a study by Shivdasani and Naciti (Naciti, 2019) demonstrated that board independence is associated with a higher likelihood of making decisions that maximize shareholder wealth, which can favourably influence value of a firm. Conversely, despite the prevailing belief in the positive connection between board independence and value of a firm, some empirical studies, such as those by Olaniyi (2019), have discovered mixed or inconclusive results, suggesting that the relationship may not always hold true. Hence, we hypothesise the following:

H4: There exists a positive association between board independence and firm value.

#### **4.5. CEO duality and firm value**

According to Stakeholder theory the result of the Duality of CEO on FV can be positive when the CEO effectively prioritizes and balances the interests of a diverse range of stakeholders, which includes employees, customers, and the community, thus contributing to the firm's long-term sustainability



(Stender & Rojahn, 2020). Also, CEO duality, aligned with institutional norms favouring strong leadership, can enhance FV by streamlining decision-making, improving accountability, and promoting a unified strategic vision, ultimately reducing agency costs and increasing investor confidence Al Amosh and Khatib (2021).

Findings from research conducted by Kim and Li (2021), involving an analysis of the S&P 500 companies, unveiled a favourable relationship between Duality of CEO (where the CEO also holds the position of board chair and firm performance. The argument was that Duality of CEO can lead to more resolute leadership, a reduction in agency conflicts, and an enhancement in firm performance. Bilyay-Erdogan (2022) study also found a positive correlation between the Duality of the CEO and the success of Chinese enterprises. This suggests that the reduction of board disputes can lead to better decision-making and an increased emphasis on long-term strategy. Moreover, Dkhili (2023) showed that the dual role of the CEO was associated with a higher FV in high-competition environments due to the ability to make decisions more quickly and adjust to changing market conditions. Conversely, Huang (2022) revealed a negative influence of Duality of CEO on value of a firm following their examination of companies that underwent CEO turnover. This suggested that separating the roles of CEO and board chair can enhance firm performance during leadership transitions. Based on the prevailing body of earlier studies, we assume that:

H5: There is a positive association between CEO duality and firm value.

#### **4.6. Number of board meetings and firm value**

In line with the stakeholder theory, increased board meetings may help increase communication and interaction with various stakeholders, eventually improving the firm's reputation and long-term worth via better decision-making, openness, and response to their concerns (Ntim & Soobaroyen, 2013). Furthermore, from the standpoint of institutional theory, the effect of the number of board meetings on the company's value may differ based on the dominant institutional norms and expectations in a given market or sector. Adherence to institutional expectations and favourably influences the value of a firm (Elmagrhi et al., 2019).

Numerous studies have linked more board meetings to greater FV and better firm performance. For instance, Bhagat and Bolton (2019) discovered that regular meetings help the board remain up to date on the company's operations, prospects, and difficulties, which improves decision-making and supervision. According to research by Ciftci et al. (2019), companies with more board meetings often have more transparent and high-quality financial reporting. Consequently, this boosts investor confidence and has a beneficial influence on FV. According to Bhagat and Bolton (2019), having more board meetings may be especially helpful in difficult financial situations or crises since they provide managers a forum for crisis management and proactive answers, which eventually protects the company's value. Conversely, Jesuka and Peixoto (2022) found that an excessive number of board meetings may lead to diminishing returns, as it could indicate inefficiency or micromanagement. In such cases, it might not necessarily correlate with increased value of a firm. Similarly, Khatib and Nour (2021) found that a high frequency of board meetings can be a signal of governance problems or conflicts within the board, which can erode shareholder confidence and potentially lead to a decline in value of a firm. In light of the majority of prior studies, we assume that:

H6: A positive link between the number of board meetings and firm value.

#### **4.7. Meeting attendance and firm value**

According to the stakeholder theory, board members' attendance at meetings may significantly influence a company's value and performance since it shows that they care about the interests of different stakeholders, such as customers, workers, and shareholders. Board members are more likely to make well-informed choices that balance the interests of various stakeholders when they participate actively in

meetings. This may improve trust and reputation, eventually raising the company's value (Alatawi et al., 2023). From the standpoint of institutional theory, board members who consistently attend meetings align with established governance practices. This could enhance the firm's value by improving investor confidence and perceptions of the company's legitimacy and adherence to institutional norms (Sun et al., 2023).

Hasnan et al. (2020) study identified a favourable association between a high level of attendance at board meetings and the performance of firms. Businesses whose board members attended these sessions on a regular basis tended to make well-informed choices, which eventually produced better financial results. Moreover, a study by Barzegari Khanaghah et al. (2019) also showed that businesses with board members who regularly attended meetings had better risk management practices. There were fewer financial scandals or crises because these companies were better able to foresee and handle any problems. Furthermore, a study conducted by Shao (2019) study showed that shareholder value was positively influenced by board meeting attendance. Actively participating in meetings increased the likelihood that a company's directors would make wise decisions and implement strategic planning to create value for its investors. On the contrary, a study by Tasya and Kusumaning (2023) found that the frequency of board meetings and attendance had no significant effect on firm performance. This research suggested that, while attendance remained important, other factors might have a more substantial role in determining corporate outcomes. Drawing from the literature above, it is hypothesized that:

H7: There exist a positive association between meeting attendance of board members and value of a firm

#### **4.8. The moderating role of ESG performance**

From an institutional theory perspective, ESG performance is influenced by the existing institutional environment, which encompasses regulations and norms. This, in turn, shapes the practices related to CG. Robust ESG performance can align a company more closely with the expectations set by these institutions, enhance its overall legitimacy, and potentially result in more favourable outcomes in terms of the value of a firm, as institutions are increasingly favouring ESG-conscious companies (Chang et al., 2024). Additionally, stakeholder theory posits that businesses ought to consider the concerns of all stakeholders, encompassing not only shareholders but also ESG factors, which are central to this approach. When a company effectively incorporates ESG considerations into its governance framework, it can enhance its reputation, mitigate risks, and foster stronger relationships with diverse stakeholders, ultimately contributing an enhanced FV (Ntim & Soobaroyen, 2013).

Busch et al. (2023) found a positive correlation between voluntary disclosure, effective CG, and firm performance. Firms that integrated voluntary factors into their governance structures experienced enhanced financial performance, reduced risk, and increased long-term value. Also, Khoe et al. (2023) revealed that companies with strong CG mechanisms, particularly those that consider sustainability issues, tend to have a positive influence on their profitability. These companies were better equipped to manage risks, gain stakeholder trust, and achieve sustainable financial returns. Also, (Cheng et al., 2023) evidence shows that a strong focus on environmental disclosure by firms, combined with effective CG practices, positively influenced firm continuity. Companies integrating environmental metrics into their governance structures demonstrated superior performance, long-term value creation, and longevity. We hypothesise the following, with support from prior literature:

H8: ESG performance positively moderates the association between CG and FV.

## **5. Methods**

### **5.1. Research design**

The study employed a quantitative method in examining the role of ESG performance on CG and FV. The authors chose emerging nations, particularly the Sub-Saharan Africa (SSA) region, due to their unique

economic, regulatory, and socio-cultural contexts, which can significantly influence ESG practices and the link among CG and the value of a firm. After narrowing the research focus to this specific group of countries, the authors explored diverse industries to identify the sector that posed the most significant potential risk sustainability. Consequently, the authors opted for manufacturing companies because the sector plays a vital role in the economies of developing nations, contributing to industrialization and making them vital to business sustainability (Alatawi et al., 2023). The research used secondary data from the companies' annual reports. The primary source of data for this study was obtained from the Refinitiv database. For this research, the authors utilized a purposive sampling strategy, specifically targeting manufacturing companies that consistently published their annual reports from 2010 to 2022. The study's final sample encompassed 127 listed and 235 unlisted manufacturing companies in the SSA region, selected based on data availability. We addressed missing values for specific companies by utilizing unbalanced panel data comprising 4706 observations. Table 1 presents the detailed sample selection of nations and firms.

## 5.2. Model specification

We adopted a model by Agyemang et al. (2023) due to its relevance in exploring the association between CG and FV. We took the natural logarithm of the variables to enhance the linearity and accuracy of our results, since they have different measurement. This model forms a solid framework for the research and is presented as follows:

$$FC_{it} = f(GEND_{it}, FNAS_{it}, BSIZ_{it}, BIND_{it}, CEOD_{it}, BM_{it}, MA_{it}, ROCE_{it}, OC_{it}, LEV_{it}, FAGE_{it}, \varepsilon_{it}) \quad (1)$$

$$\ln FV_{it} = \beta_0 + \beta_1 \ln GEND_{it} + \beta_2 \ln FNAS_{it} + \beta_3 \ln BSIZ_{it} + \beta_4 \ln BIND_{it} + \beta_5 \ln CEOD_{it} + \beta_6 \ln BM_{it} + \beta_7 \ln MA_{it} + \beta_8 \ln ROCE_{it} + \beta_9 \ln OC_{it} + \beta_{10} \ln LEV_{it} + \beta_{11} \ln FAGE_{it} + \varepsilon_{it} \dots \dots \dots \quad (2)$$

The second equation takes into account the evaluation of the moderating influence of ESG performance on CG and the value of a firm, and is formulated as follows:

$$\begin{aligned} \ln FV_{it} = & \beta_0 + \beta_1 \ln GEND_{it} + \beta_2 \ln GEND_{it} * ESG_{it} + \beta_3 \ln FNAS_{it} \\ & + \beta_4 \ln FNAS_{it} * ESG_{it} + \beta_5 \ln BSIZ_{it} + \beta_6 \ln BSIZ_{it} * ESG_{it} + \beta_7 \ln BIND_{it} \\ & + \beta_8 \ln BIND_{it} * ESG_{it} + \beta_9 \ln CEOD_{it} + \beta_{10} \ln CEOD_{it} * ESG_{it} \\ & + \beta_{11} \ln BM_{it} + \beta_{12} \ln BM_{it} * ESG_{it} + \beta_{13} \ln MA_{it} + \beta_{14} \ln MA_{it} * ESG_{it} \\ & + \beta_{15} \ln ESG_{it} + \beta_{16} \ln ROCE_{it} + \beta_{17} \ln OC_{it} + \beta_{18} \ln LEV_{it} + \beta_{19} \ln FAGE_{it} + \varepsilon_{it} \dots \dots \dots \end{aligned} \quad (3)$$

In the equation, FV represents the firm value, while i and t serve as the respective subscripts for country and year. GEND signifies the inclusion of women on the board, FNAS represents the presence of foreigners on the board, BSIZ corresponds to the size of the board, BIND indicates the independence of the board, and CEO refers to the duality of the CEO. Additionally, BM is used to denote the total number of board meetings. and MA denotes the number of board members. ROCE stands for Return on Capital Employed, OC stands for Ownership Concentration, LEV stands for Leverage, and FAGE stands for Firm Age

**Table 1.** Population and sampling.

Sub Saharan Africa	Selected listed companies	Selected unlisted companies	Total
Eastern Africa	35	65	100
Central Africa	30	60	92
Western Africa	37	55	90
Southern Africa	25	55	80
Total	127	235	362

### 5.3. Description of study variables

#### 5.3.1. Dependent variable

**5.3.1.1. Firm value (FV).** FV represents the total worth of a company as determined by the market, investors, and other stakeholders, often measured by stock price and market capitalization, reflecting expectations of future cash flows, growth prospects, and risk factors (Chang et al., 2024). In developing countries, FV is influenced by various factors, including CG quality, financial performance, market conditions, and the regulatory environment.

#### 5.3.2. Independent variables

**5.3.2.1. Corporate governance (CG).** CG pertains to the regulations, customs, and procedures governing the direction and oversight of a company, encompassing the interactions among management, shareholders, stakeholders, and other pertinent entities. (Elmghaamez et al., 2023). CG mechanisms typically encompass three main attributes: diversity attributes, which focus on the composition of the board of directors and aim to ensure diversity in terms of gender, expertise, and background; structural attributes, which pertain to the organization's governance structure, including board size, independence, and CEO duality; and process attributes, which relate to board meetings and meeting attendance of the board (Ntim & Soobaroyen, 2013).

#### 5.3.3 Control variables

We controlled for profitability, ownership concentration, leverage, and firm age, each offering insights into different aspects of firm performance and structure. Profitability measures the efficiency of earnings generation, ownership concentration indicates the distribution of ownership stakes among shareholders, leverage reflects the reliance on debt financing, and firm age signifies organizational maturity and experience.

### 5.4. Moderating variables

#### 5.4.1. ESG performance

ESG performance signifies the extent to which a company upholds sustainability standards, a measure that is increasingly relied upon by investors, regulators, and various stakeholders to assess a firm's commitment to sustainable and ethical practices (Elmagrhi et al., 2019). In this study developed an innovative index, which is in contrast to previous studies, which primarily relied on well-known ESG measurement methods like those by Thompson Reuters (Chang et al., 2024; Elmagrhi et al., 2019), MSCI (Sun et al., 2023; Zhou et al., 2024), and other ESG rating technique. This innovative approach enhances the thoroughness and reliability of our assessments. These standards were carefully chosen to consider the unique sustainability features related to manufacturing companies operating in developing countries. We used the content analysis approach to carefully analyse these criteria, assigning a score of 1 for complete disclosure and 0 for non-disclosure. For uniformity and clarity, a distinct code was given to each dimension.

Table 2 provides a thorough explanation of the grading criteria.

The determination of the score on the ESG performance index is determined by:

$$ESG = \frac{\text{Sum of items reported in the annual reports of companies}}{\text{The total number of items on the check list}} \dots \quad (4)$$

Table 3 displays the summary of the study variables.

## 6. Empirical results and discussion

### 6.1. Cross-sectional dependency (CD) analysis

Cross-sectional dependency is necessary in panel analysis because varying panel unit root tests establish distinct presumptions regarding the cross-sectional correlations between the variances in the data set. If

**Table 2.** Checklist for ESG performance index.

ESG theme	Dimension	Code	Description
Environmental	Energy efficiency	EP1	Measures the company's ability to optimize energy consumption within its operations and facilities
	Carbon footprint	EP2	Focuses on the company's attempts to lessen its influence on climate change as well as its greenhouse gas emissions
	Biodiversity conservation	EP3	Examines the company's initiatives to protect and enhance biodiversity in its operations and supply chain
	Eco-friendly packaging	EP4	Evaluates the use of sustainable and eco-friendly packaging materials and practices
	Waste management	EP5	Assesses the company's approach to handling, minimizing, and recycling waste materials
Social	Community engagement	SP1	Evaluates the extent to which the company actively engages with and supports local communities
	Human rights	SP2	Examines the company's commitment to upholding and respecting human rights, both within its workforce and supply chain
	Labor practices	SP3	Focuses on the treatment of employees, encompassing aspects like diversity, safety, fair labor practices, and working conditions
	Social influence investments	SP4	Measures the company's investments in projects with a positive social influence
Governance	Anti-corruption practices	GP1	Examines the company's efforts to prevent and combat corruption in all aspects of its operations
	Ethics and transparency	GP2	Assesses the company's commitment to ethical practices, transparency in reporting, and CG
	Diversity and Independence on the Board	GP3	Assesses the board of directors' diversity and independence
	Executive compensation fairness	GP4	Assesses the fairness and transparency of executive compensation practices

there is a significant amount of cross-sectional dependence error but it is disregarded, the findings of the unit root analysis could be erroneous (Zhou et al., 2024). Table 4 shows results for the cross-sectional dependency test using frees.

Table 4 shows negative cross-sectional results, proving that the phenomenon does not exist. Each of the research's parameters was confirmed to be insignificant statistically using the Frees test at all levels. Due to the lack of cross-sectional dependency in the dataset, our inference is that the impact observed in one manufacturing firm must be capable of influencing other manufacturing firms. Therefore, we do not reject the null hypothesis of no cross-sectional dependency, and we reject the alternative hypothesis suggesting the presence of cross-sectional dependence.

## 6.2. Stationarity test

After verifying the cross-sectional dependency results, the authors test the integration order. CIPS was used to check for data stationarity.

The findings of the CIPS unit root tests are reported in Table 5. Levels for meeting attendance (MA), leverage (LEV), and firm age (FAGE) were observed to be below the critical thresholds of  $-2.16$  and  $-2.69$ , indicating that these variables did not exhibit integration at both constant and constant with trend. On the contrary, the remaining variables showed integration at both constant and constant with trend levels. To assess stationarity, a first difference level of integration was employed since some variables in the study were not level-integrated. Subsequent to the initial differentiation, all variables in the study concurrently exhibited constant and constant with trends. Therefore, it was deduced that the variables achieved level-integration after the first difference.

## 6.3. Cointegration test

We utilized the cointegration technique connections between variables in a panel data setting. The absence of a cointegration test may lead one to infer that the variables under study do not exhibit any

**Table 3.** Summary of the variables.

Categories of variables	Variables	Symbol	Measurement	Expected sign
Dependent variable	Firm value	FV	The average price of the company's stock over a specified period (a year)	
Independent variables	Gender diversity	GEND	calculated as the total number of female board members	+
	Foreign nationals	FNAS	The total number of foreign nationals on the board	+
	Board size	BSIZ	The total number of board of directors	+
	Board independence	BIND	The number of non-executive directors on the board	+
	CEO duality	CEOD	If the CEO is the same as the Chairman, 0 is assigned to that firm. If the CEO is not the same as the Chairperson, we give 1 to the firm	+
	Board meetings	BM	The total number of times the board had meetings, regularly or in emergency circumstances	+
	Meeting attendance	MA	The number of times a member of the board attends meetings	+
Moderating variable	Environmental, social, and governance performance	ESG	Sum of ESG activities reported in the company's annual report/optimal disclosure scores	+
Control variables	Profitability	ROCE	Earnings before tax and interest divided by capital employed	+
	Ownership concentration	OC	Number of shares held by the biggest shareholder as a proportion of all outstanding shares (%)	+
	Leverage	LEV	The total debts divided by equity at the end of the year	–
	Firm age	FAGE	The number of years since the inception of the company	–

**Table 4.** Cross-sectional dependency test – Frees.

Frees' test of cross-sectional independence = –0.067	
Critical values from Frees' Q distribution	
alpha = 0.10:	0.2136
alpha = 0.05:	0.2838
alpha = 0.01:	0.4252

**Table 5.** CIPS unit test.

Variable	Level		First difference	
	Constant	Constant & trend	Constant	Constant & trend
LNFBV	–3.082	–3.696	–3.587	–3.918
LNFBND	–3.225	–3.851	–4.385	–4.677
LNFBNAS	–3.352	–3.705	–3.545	–3.878
LNBSIZ	–3.004	–3.820	–3.647	–4.243
LNBIND	–3.331	–3.582	–3.805	–3.971
LNCEOD	–2.972	–3.061	–3.548	–3.826
LNBM	–2.267	–2.914	–3.003	–3.897
LNMA	–2.154	–2.587	–3.110	–3.730
LNESG	–2.495	–2.975	–3.603	–3.970
LNROCE	–3.634	–3.940	–4.136	–4.442
LNOC	–3.018	–3.919	–4.252	–4.802
LNLEV	–2.119	–2.452	–3.262	–3.681
LNFBAGE	–2.150	–2.500	–3.011	–3.693

long-term association (Sare et al., 2023). Thereby, a cointegration test is warranted in the present investigation. The outcomes of Pedroni cointegration are displayed in Table 6.

The experiment's findings show that the expected figures for the various trends are below 0.01, indicating a significance level of 1%. This leads us to endorse the alternative hypothesis of cointegration and dismiss the null hypothesis. All indications suggest a cohesive correlation among the variables under scrutiny in the integrated test analysis.



#### 6.4. Estimation technique

In our analysis, we employed the CCEMG and AMG methods to mitigate the risk of divergent regression outcomes that might have resulted from an inappropriate estimation approach. These techniques are advantageous because they calculate the most appropriate positive recursion based on empirical regressors and account for cross-sectional implications in econometrics, as emphasized in the work of Chang et al. (2024). We selected the CCEMG method for its resistance to endogeneity, in line with the recommendation of Zhou et al. (2022). To ensure the robustness of our models, we consistently used the AMG estimator across all models, which effectively addresses endogeneity issues and accommodates potential heteroscedasticity problems, as indicated by Osei et al. (2023). we categorized companies into two groups: those listed and those unlisted, operating in the manufacturing sector within Sub-Saharan Africa. Our analytical approach involved distinct examinations for each Panels A and B category, representing listed and unlisted companies, respectively, alongside an integrated analysis in Panel C. In each panel, we utilized the CCEMG as the main estimation I R1 and AMG as the robust estimation in R2. The outcomes of the multiple regression analysis can be found in Table 7.

The Wald chi-square values reported in R2 of Table 7, specifically 598.43, 752.62, and 1514.62, indicate the statistical suitability of the chosen technique for our examination. Moreover, the high adjusted R-squared values (0.721, 0.653, and 0.796) in R1 of Table 7 suggest a strong fit for the model across different specifications. The regression model demonstrates statistical significance at the 1% level, supported by the probability > chi-square being less than 0.01. This implies a robust regression influence in the empirical model, allowing us to conduct regression analysis confidently. Consequently, the models successfully capture a significant portion of the variance in the dependent variable attributed to various independent variables.

All panels in R1 reveal a notable and statistically meaningful link among gender diversity and FV. This suggests that a percentage shift in gender diversity within the boardroom corresponds to a 0.0543 increase in FV for Panel A and a 0.0475 increase for Panel B. The significance of this positive correlation was established at the 1 and 5% levels of significance for Panels A and B, respectively. Consequently, the initial hypothesis stands supported. The favourable outcome can be attributed to women's varied

**Table 6.** Pedroni trend.

	Statistic	p-Value
Modified Phillips–Perron <i>t</i>	2.9658	0.0015
Phillips–Perron <i>t</i>	−10.5493	0.0000
Augmented Dickey–Fuller <i>t</i>	−9.3222	0.0000

\*\*\*, \*\*, \*For 1, 5 and 10%, respectively.

**Table 7.** Estimation results.

Variables	Panel A		Panel B		Panel C	
	R1	R2	R1	R2	R1	R2
LNGEND	0.0543***	0.0421***	0.0475**	0.0218	0.0615***	0.0463***
LNFNAS	0.0842***	0.0482**	0.0453**	0.0052*	0.0436***	0.0372***
LNBSIZ	0.0541***	0.0427***	0.0485*	0.1542	0.0374**	0.0584**
LNBIND	0.0452***	0.0251**	0.0645*	0.0362*	0.0829***	0.0327***
LNCEOD	−0.0428***	−0.0436***	−0.0387**	−0.0326***	−0.0162**	−0.0265***
LNBM	0.04361*	0.0653*	0.0483**	0.03031*	0.0452***	0.0238**
LNMA	−0.0406**	−0.0308**	−0.0643**	−0.0345**	−0.0724*	−0.0049**
LNROCE	0.0526**	0.0345**	0.0683*	0.0253*	0.0734*	0.0561**
LNOC	0.0453**	0.0352*	0.0742**	0.2324**	0.0528**	0.0631*
LNLEV	−0.0673	−0.0431	−0.0257	−0.1571	−0.1238	−0.1432
Sargan Test/Wald $\chi^2$	481.76	1298.43	889.51	1752.62	1272.24	5314.62
AR <sup>2</sup> /Prob > $\chi^2$	0.613	0.0000	0.721	0.0000	0.796	0.0000
OBS	1651	1651	3055	3055	4706	4706

\*\*\*, \*\*, \*For 1, 5 and 10%, respectively.

perspectives and expertise in corporate decision-making, thereby bolstering company performance and instilling confidence in shareholders.

The presence of foreign nationals establishes a significant and positive correlation with FV at the 1 and 5% significance levels in both panels A and B within R1. Specifically, a percentage change in the composition of foreigners on the board increases by 0.0842 and 0.0453 in FV. Consequently, the second hypothesis is affirmed. These favorable findings suggest that a higher representation of foreign nationals on the board positively impacts FV, potentially due to their diverse perspectives, expertise, or international networks.

In panels A and B, the relationship between board size and FV is positive and significant at the 1 and 10% levels. This signifies a 0.0541 and 0.0485 increase in FV resulting from a percentage rise in board members. Thus, hypothesis 3 is validated. This mechanism is attributed to the varied expertise and perspectives that a larger board contributes, enhancing decision-making and strategic guidance for the company.

Examining panels, A and B in R1 reveals that the impact of board independence on FV is positive and statistically significant at the 1 and 10% levels. The outcome indicates that an increase in non-executive directors corresponds to a positive change of 0.0452 and 0.0645 in FV for manufacturing firms. This leads to the acceptance of the fourth hypothesis. The positive finding can be ascribed to the board's ability to make impartial and strategic decisions, fostering greater investor trust and long-term corporate performance.

The association between CEO duality and FV demonstrates a negative and statistically significant correlation at the 1% and 5% levels for panels A and B in R1. This suggests that combining the roles of CEO and board chair in the firm will decrease FV by 0.0428 and 0.0387, respectively. Consequently, Hypothesis 5 is not supported. The negative influence can be attributed to a single individual's concentration of power and decision-making authority, leading to potential conflicts of interest and reduced oversight.

In the analysis of R1 across panels A and B, it is evident that an increase in board meetings shows a positive correlation with FV at the 10 and 5% significance levels. Specifically, a percentage change in board meetings leads to an augmentation in FV by 0.4361 and 0.0483, respectively. Therefore, we accept hypothesis 6. This mechanism may be attributed to enhanced oversight, effective decision-making, and improved communication among board members, leading to better CG practices and FV.

Nevertheless, an inverse correlation is observed between the attendance of board members in meetings and the FV in panels A and B in R1. The inverse link is significant at 5% for both panels. This implies a percentage change in the board of directors meeting attendance that decreases FV by 0.0406 and 0.0643, respectively. Hence, hypothesis 7 is rejected. The negative influence could be attributed to a potential diversion of managerial attention away from critical operational and strategic matters, thereby affecting the firm's overall performance and value.

In the consolidated regression analysis of Panel C, the R1 findings reveal a positive and statistically significant correlation between five (5) CG attributes and firm size. Specifically, gender diversity, foreign nationals, board size, board independence, and board meetings exhibit positive and statistically significant relationships across all significance levels, with values of 0.0615, 0.0436, 0.0374, 0.0829, and 0.0452. This suggests that alterations in these attributes would result in positive changes in FV. Conversely, the remaining characteristics demonstrate a negative yet significant association with FV. CEO duality and board member meeting attendance, in particular, exhibit an inverse relationship with FV at the 5% and 10% significance levels, respectively.

Regarding the robustness results in panels A, B, and C (R2) using the robustness estimator AMG, the findings align closely with the primary estimator CCEMG. The robustness test outcomes for gender diversity, foreign nationals, board size, board independence, and board meetings unveil a positive and significant correlation with FV, consistently observed across all significance levels. This implies that a percentage change in the number of female board members, foreigners on the board, number of board members, independent board members, and number of board meetings corresponds to an increase in FV by 0.0463, 0.0372, 0.0584, 0.0327, and 0.0238, respectively. However, in the case of CEO duality and board meetings, the results indicate an inverse and significant correlation with FV. The negative association is significant at the 1 and 5%, respectively.

## 6.5. Moderating analysis

Our moderation analysis assessed how ESG performance moderates the relationship between CG and FV. Table 8, displays the moderating results.

The outcomes illustrating the impact of ESG performance moderating between CG and FV can be found in Table 8. The authors assessed the effects of gender diversity, foreign nationals, board size, board independence, CEO duality, board meetings, and meetings on FV across Panels A–C.

The outcomes reported in Table 8, using the main estimation (R1) for all the panels, indicate that, once the interaction effect ESG performance is factored in, CG attributes demonstrate statistically positive associations with FV in all panels. This suggests that the positive impact of ESG performance moderates the connection between CG and FV. These results emphasize the necessity of considering robust ESG performance when instituting CG mechanisms for manufacturing firms in developing nations.

It is evidenced that the moderating outcomes reported in Table 8 exhibit higher coefficient values than the main estimation outcomes in Table 7. This suggests that the impact of ESG performance on the correlation between CG and FV is more pronounced than the direct connection between CG and FV. Hence, companies in developing nations should contemplate integrating elevated levels of ESG performance to bolster CG structures and cultivate firms' long-term value.

The robustness results shown in R2 for all the panels in Table 7 using the AMG estimator are the same as those shown for all the panels using the primary estimator (R1). Thus, the findings for CG mechanisms in all the panels consistently reveal a positive and significant association with FV. This suggests that ESG performance positively moderates the influence of CG on FV, resulting in an increased coefficient compared to those in Table 7. In essence, the moderation estimation results yield larger coefficients due to the influence of the moderating factor, and the conclusions drawn align with those from the primary estimation analysis.

## 6.6. Additional robustness checks

To ensure the robustness of our study results to alternative measures and estimation methods, this study further employed Tobin's Q as an alternative measure for FV. Tobin's Q provides valuable insights into the market's perception of a company's value relative to the replacement cost of its assets. Additionally, this study employed an instrumental estimator known as the Two-Stage Least Squares (2SLS) method. The 2SLS method was chosen for its ability to address endogeneity concerns and provide consistent parameter estimates in the presence of instrumental variables (Sun et al., 2023; Zhou et al., 2024). These

**Table 8.** Moderating results.

Variables	Panel A		Panel B		Panel C	
	R1	R2	R1	R2	R1	R2
LNGEND	0.211***	0.3771***	0.1221**	0.2149**	0.1141***	0.0955
LNGEND*ESG	0.7785***	0.6725***	0.6435**	0.5345	0.8854***	0.6845***
LNFNAS	0.1321***	0.2103***	0.0651**	0.3655**	0.1811**	0.3761**
LNFNAS*ESG	0.0945**	0.8617***	0.5823**	0.5622*	0.5751**	0.3658**
LNBSIZ	0.2195***	0.0477**	0.0321**	0.3071***	0.0688**	0.0657**
LNBSIZ*ESG	0.8312***	0.6281***	0.7385	0.5842	0.8151**	0.6845*
LNBIND	0.0871**	0.207***	0.0688**	0.0811*	0.0901*	0.0736*
LNBIND*ESG	.05912**	0.4872**	0.5362*	0.3242*	0.7251***	0.5842**
LNCEOD	−0.0836**	−0.0497*	−0.0477	0.0321**	−0.0121*	−0.0412**
LNCEOD*ESG	−0.9481***	−0.7745***	−0.4146***	−0.3256***	−0.2745***	−0.6845***
LNBM	−0.0903**	−0.123**	−0.0645***	0.0191	−0.0134*	0.4187***
LNBM*ESG	0.6624**	0.7951*	0.4813**	0.4331*	0.5835***	0.5344**
LNMA	−0.091***	−0.0257	0.315***	0.0688**	−0.0811**	−0.4128***
LNMA*ESG	−0.6835**	−0.4172*	−0.6323**	−0.4305**	−0.5873***	−0.3635***
LNESG	0.1306**	0.0951***	0.1671**	0.0492**	0.1871**	0.2661*
LNROCE	0.2231***	0.4275*	0.3684	0.3211**	0.2142***	0.4426*
LNOC	0.1321*	0.6331	0.5242**	0.1274	0.24583*	0.3351***
LNLEV	−0.1693	0.4215*	−0.3254	−0.4278**	−0.2794**	−0.2635
Sargan Test/Wald chi <sup>2</sup>	571.76	998.43	1169.51	2952.62	1265.51	5721.41
AR <sup>2</sup> /Prob > chi <sup>2</sup>	0.624	0.0000	0.752	0.0000	0.795	0.0000
OBS	1651	1651	3055	3055	4706	4706

\*\*\*, \*\*, \*For 1, 5 and 10%, respectively.

robustness checks are performed to cross-check our findings and ensure the accuracy and reliability of our results for effective decision-making by policymakers, managers, and stakeholders alike. Table 9 presents the additional robustness.

Utilizing an alternative measure for the dependent variable and employing 2SLS estimations, the additional robustness results evidenced that CG attributes, including gender-diverse boards, the presence of foreign nationals, board independence, optimal board size, and regular board meetings, serve as positive drivers of firm market value (Tobin's Q). This suggests that firms with diverse and independent boards, along with effective governance practices such as regular board meetings, are perceived more favourably by the market, reflecting higher growth prospects, improved decision-making processes, and enhanced investor confidence. The positive findings can be attributed to the ability of such governance mechanisms to align the interests of stakeholders, promote transparency, and facilitate strategic decision-making, ultimately contributing to the creation of long-term shareholder value.

However, CEO duality and meeting attendance negatively impact firms' market value. This implies that companies where the CEO also serves as the board chair or where there is inconsistent board meeting attendance are viewed less favorably by the market, potentially signaling concerns regarding concentrated power, inadequate oversight, and ineffective governance practices. The findings can be attributed to the potential conflicts of interest, agency problems associated with CEO duality, and the importance of active and engaged board oversight in ensuring sound CG practices and value creation.

## 6.7. Discussion

The legitimacy theory emphasizes that companies prioritizing gender diversity demonstrate their responsiveness to societal expectations and values, aligning their actions with broader societal norms and standards. This legitimacy, in turn, can lead to increased trust and confidence from stakeholders, including investors, customers, and regulators, ultimately enhancing the value of a firm. Based on these foundations, we assumed a positive link between gender diversity and FV. Our findings affirm that gender-diverse boards are associated with an increased FV. Hence, our first assumption is accepted. Our results are consistent with the outcomes of Ntim and Soobaroyen (2013); (Orazalin et al., 2024), who discovered that gender diversity increases the value of a company. However, our results contradict the findings of Vo and Bui (2017), who found that the gender diversity does not influence FV. Policymakers should encourage gender diversity on corporate boards through regulations or incentives, recognizing its positive correlation with FV and its potential to enhance corporate performance and decision-making.

The stakeholder theory emphasizes that foreign nationals often bring diverse perspectives, skills, and expertise to the organization, enriching its human capital and enhancing innovation and problem-solving capabilities. This diversity fosters a more inclusive and dynamic work environment, which can lead to improved employee satisfaction, productivity, and, ultimately, FV. Therefore, we presumed that the presence of foreign board members increased the FV. Our results align with our assumption. Hence, we accept our second hypothesis. Our results are consistent with those of Kim et al. (2018), who found a

**Table 9.** Additional robustness checks.

Variables	Two-stage least squares (2SLS)		
	Panel A	Panel B	Panel C
LNGEND	0.0512***	0.0413***	0.0621**
LNFNAS	0.0387**	0.02531**	0.0318***
LNBSIZ	0.0615***	0.0312***	0.0265**
LNBIND	0.0413***	0.0412**	0.0516
LNCEO	−0.0736*	−0.2014	−0.0723***
LNBM	0.0428***	0.0421	0.0218*
LNMA	−0.0541***	−0.0301	−0.0321**
Control variables	Yes	Yes	Yes
Industry control	Yes	Yes	Yes
Year control	Yes	Yes	Yes
Sargan Test	73.1	92.2	123.6
F-statistics	46.328**	66.123*	85.23**
Obs	1651	3055	4706

\*\*\*, \*\*, \*For 1, 5 and 10%, respectively.

positive link between the presence of foreign nationals and firm profitability. However, our findings contradict those of Harjoto et al. (2019), who argued that a board's composition of foreigners unfavourably impacts firm continuity. Policymakers should enact policies that encourage the presence and integration of foreign nationals to maximize the positive impact on FV and overall economic prosperity.

A larger board can signal to external stakeholders, such as investors, regulators, and the broader community, that the organization values diverse input and is accountable to a wide range of interests. This enhanced legitimacy can lead to greater stakeholder support, reduced risk perception, and improved access to resources, all of which enhance FV. Based on these insights, we hypothesized a favourable link between board size and FV. Our findings align with this presumption. Therefore, we accept our third hypothesis. Our results are consistent with those of Puni and Anlesinya (2020), who found a favourable correlation between board size and business performance and contradict those of Agyemang Badu and Appiah (2017), who found an adverse association between boards of directors and company performance. Policymakers should encourage firms to maintain larger board sizes as it positively influences FV, potentially through enhanced monitoring and diverse perspectives, thereby promoting CG reforms prioritising board expansion.

In line with the legitimacy theory, a board with a majority of independent directors signals to stakeholders that the company is adhering to best practices and aligning its decision-making processes with societal expectations, which can positively influence its reputation and enhance its social license to operate. Consequently, firms with independent boards are perceived as less risky and trustworthy, increasing investor confidence and higher firm valuation. We assumed a favourable link between board independence and FV in line with this foundation. Our results reveal that independent directors increase firms' value. Therefore, we accept our fourth hypothesis. Our findings align with those of Sasidharan (Thenmozhi & Sasidharan, 2020), who found that a larger percentage of non-executive directors led to a rise in firm financial performance. Contrary to our findings, (Alatawi et al., 2023) found a negative link between the presence of independent directors and firm profitability. Policymakers should prioritize regulations or incentives that promote and maintain board independence within firms to enhance overall FV and CG effectiveness.

From a stakeholder perspective, CEO duality, where the CEO also serves as the board's chairperson, can positively impact FV by streamlining decision-making processes and promoting cohesive leadership. With the CEO holding both positions, there is potential for quicker and more decisive actions, leading to increased operational efficiency and strategic alignment, ultimately enhancing firm performance and value. Therefore, we assume that having CEOs as chairperson would positively impact FV. Our results contradict our assumption. Hence, our fifth hypothesis is rejected. Our findings are consistent with those of Qadorah and Fadzil (2018), whose CEO duality led to a decrease in FV. Contrary to our findings Mishra and Kapil (2018), found that CEO duality increases firm performance. Policy makers should consider implementing regulations or guidelines that encourage separating the roles of CEO and board chair to enhance FV and CG practices.

Legitimacy theory posits that board meetings are crucial in demonstrating the organization's commitment to upholding ethical standards, CG best practices, and stakeholder interests. Board meetings provide a forum for addressing legitimacy concerns, such as environmental and social issues, through discussions on corporate social responsibility initiatives, stakeholder engagement strategies, and ethical decision-making practices, further reinforcing the firm's legitimacy and long-term sustainability and value. Based on this, we assume a positive link between board meetings and FV. Our results align with our assumption; hence, our sixth hypothesis is supported. Our results are consistent with those of Cheng et al. (2023), who found that the frequency of board meetings and firm profitability are positively linked. However, our results contradict those of Bhat et al. (2018), who discovered a negative link between a number of yearly board conferences and business performance. Policymakers should encourage companies to hold regular and effective board meetings as they positively influence FV, thereby promoting CG practices that enhance overall economic stability and investor confidence.

In accordance with the stakeholder theory, active participation in meetings signals the firm's commitment to engaging with stakeholders and addressing their concerns, which can enhance stakeholder confidence in the firm's decision-making processes and long-term viability. Also, from a legitimacy perspective, meeting attendance allows the firm to communicate its values, priorities, and sustainability initiatives to

stakeholders, aligning its actions with societal expectations and norms and ultimately enhancing its reputation, long-term competitiveness and value. Consequently, we presumed that meeting attendance is positively associated with FV, but our results reveal a negative association. Hence, our seventh assumption is rejected. Our findings are similar to those of Buchdadi et al. (2019), who found a negative link between meeting attendance and firm performance. Our results also contradict the findings of Min and Chizema (2018), who discovered a favourable link between meeting attendance frequency and company valuation. Policymakers should consider measures to encourage firms to prioritize productive use of time in meetings, by implementing guidelines for efficient meeting structures or incentivizing alternatives to excessive meetings to enhance FV.

Companies enhance stakeholder trust, engagement, and organizational legitimacy by prioritizing ESG considerations. This leads to improved financial performance, reduced risks, and enhanced reputation, ultimately driving long-term value creation for the firm. The legitimacy theory emphasizes that integrating ESG principles into CG practices strengthens stakeholder relationships, boosts legitimacy, and contributes to sustainable business success. Hypothesis 8 is mostly accepted and partially rejected because interaction effects of ESG performance on CG and FV can be seen in gender diversity, foreign nationals' presence, board size, board independence, and board meetings. However, CEO duality and meeting attendance of directors appear to have an inverse effect. Our findings support the hypothesis that better ESG performance strengthens the connection between CG and FV (Kim et al., 2018). These findings underscore the critical need for policymakers to mandate comprehensive ESG disclosure requirements and enforce stringent CG standards to maximize FV and foster sustainable growth, thereby safeguarding investor interests and promoting economic resilience.

## 7. Summary and conclusion

The study examines the impact of CG on FV, considering the potential role of ESG performance in this relationship, utilizing panel data from manufacturing companies in developing economies. The study employed the CCEMG and the AMG estimations for the empirical analysis. The findings indicate that regarding board diversity attributes, both gender diversity and the presence of foreign nationals exhibit positive associations with FV. Regarding board structural attributes, independent boards and board size also influenced FV positively. However, CEO duality shows a negative association with FV. Regarding the process attributes, holding regular board meetings enhances FV, while low meeting attendance negatively affects FV. Moreover, the study also evidenced that ESG performance exerts a substantial positive impact on the link between CG and FV.

Based on the study's findings, it is recommended that firms must prioritize the implementation of robust governance mechanisms, including the promotion of gender diversity, the inclusion of foreign nationals on boards, and the establishment of independent board structures. Additionally, optimizing board size and ensuring regular board meetings can improve governance effectiveness. Furthermore, given the significant positive impact of ESG performance on the relationship between CG and FV, organizations should prioritize sustainability initiatives and integrate ESG considerations into their governance frameworks.

The study significantly contributes to the literature on CG and FV by examining its nuances in developing countries. Moreover, the study highlights the crucial role of ESG performance in moderating this relationship, emphasizing the importance of integrating sustainability into governance frameworks. The study adopts a stakeholder and legitimacy theoretical perspective, offering a comprehensive analysis of governance-performance dynamics within societal contexts. The study's findings provide actionable recommendations for firms to enhance governance practices and performance. The study offers valuable insights for policymakers, investors, and corporate leaders to improve CG and ESG practices, thereby driving sustainable value creation and benefiting academia and real-world business practices.

### 7.1. Policy implication

Regarding policy implications, policymakers and business owners should prioritize the implementation of regulations and recommendations that bolster sound CG practices. This includes establishing



independent boards, enforcing transparent financial reporting, and strengthening internal control systems. Furthermore, authorities should actively encourage sustainable business practices. They can achieve this by facilitating platforms for exchanging information and sustainability initiatives to prioritize ESG performance. Policymakers can play a pivotal role in nurturing an environment that acknowledges and actively fosters good governance and ESG performance. Such actions will, in turn, contribute to the long-term sustainability and competitiveness of companies operating in developing countries.

## 7.2. Limitations and Future research

In terms of limitations, the study's scope was restricted to developing countries, specifically Sub-Saharan African (SSA) nations. Future research studies could extend this analysis by conducting a comparative study across diverse economies, encompassing developing and developed. This broader comparative approach would facilitate more nuanced insights for effective policy decision-making and wider applicability of findings. Additionally, the measurement of ESG performance was based on sustainability dimensions aligned with SDGs and GRI frameworks. Future studies should aim to develop a comprehensive ESG index that transcends specific frameworks and is applicable across diverse economic contexts. Such an index would enhance comparability and facilitate a more standardized evaluation of ESG performance across different economies, thus advancing our understanding of its impact on firm value.

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## Author contributions

**Ayishetu Bukari:** conceptualization & design; analysis & interpretation; drafting of the paper; and revising it critically for intellectual content. **Andrew Osei Agyemang:** conceptualization & design; analysis & interpretation; methodology; drafting of the paper; and revising it critically for intellectual content. **Bernard Bawuah:** conceptualization & design; drafting of the paper; and revising it critically for intellectual content. All authors agree to be accountable for all aspects of the work.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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## Data availability statement

The data that support the findings of this study are available from the corresponding author, [A.O.A], upon reasonable request.

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