

# The role of gender diversity in shaping green collaborations and firm financial success

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## Abstract

**Purpose** – This study aims to explore the relationship between gender diversity (GD) in leadership, green collaborations (GC) and firm financial success within FTSE 350 nonfinancial companies in the UK, shedding light on how GD moderates the impact of GC on firm financial success.

**Design/methodology/approach** – Quantitative methods are used to analyze data from 2,280 firm-year observations, offering insights into the correlation between GD, GC and firm financial success metrics such as returns on assets (ROA), returns on equity (ROE) and earnings per share (EPS).

**Findings** – The empirical analysis conducted in this study uncovers a compelling correlation between GD on the board and the financial success of firms involved in GC. The findings illuminate a positive association, indicating that companies boasting higher levels of GD among their leadership tend to outperform their counterparts with less diverse leadership teams regarding financial success (ROA, ROE and EPS). This suggests that including women in leadership roles can introduce fresh perspectives, innovative ideas and strategic priorities that prioritize sustainability and environmental stewardship by facilitating GC. Moreover, the study underscores the critical role of GD as a practical, valuable resource and a catalyst for driving financial success within sustainable business practices.

**Practical implications** – These findings reinforce the strategic importance of cultivating GD as a pivotal resource for organizations aiming to excel in sustainability-driven initiatives, such as GC. By assembling diverse leadership teams, firms can benefit from broader perspectives, innovative thinking and a more profound commitment to environmental stewardship, ultimately enhancing their financial performance. Consequently, corporate leaders, policymakers and investors are encouraged to recognize GD as a moral obligation and a key driver of sustainable success and a competitive advantage in today's marketplace.

**Social implications** – Embracing GD and actively participating in GC carry profound social implications that extend beyond firm financial success metrics. By promoting GD, organizations signal a commitment to inclusivity, equality and diversity in corporate leadership, thereby fostering a more inclusive and equitable work environment. Furthermore, the engagement in GC underscores a dedication to social and environmental responsibility, aligning with the expectations of diverse stakeholders, including employees, customers, communities and regulatory bodies. Such initiatives contribute to broader societal goals by addressing pressing environmental challenges and promoting sustainable business practices that prioritize the well-being of both present and future generations. This highlights the pivotal role of GD as a crucial resource in driving positive social change and advancing sustainable business practices.

**Originality/value** – The study contributes to both academic research and practical understanding by empirically examining the relationship between GD in leadership and firm financial success within GC; it addresses a critical void in existing literature, offering insights valuable to scholars, practitioners, policymakers and investors. Moreover, the study implications extend beyond traditional GD studies by

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emphasizing its strategic importance in driving sustainable business practices and enhancing firm value. This underscores the need to recognize GD as a crucial resource for financial success in pursuing sustainability goals through GC.

**Keywords** Gender diversity, Green collaborations, Firm success, Sustainability, Stakeholders

**Paper type** Research paper

## 1. Introduction

In the contemporary business landscape, the imperative for corporations to align their operations with sustainable and environmentally responsible practices has gained unprecedented momentum. Firms increasingly recognize the need to integrate green initiatives as a response to societal expectations and as a strategic imperative for long-term viability (Esterhuyse and du Toit, 2025). Central to this transition is the emergence of green collaborations (GC) endeavors that address environmental challenges while fostering innovation and sustainable growth. Stakeholders today scrutinize corporations for financial success, environmental footprint and ethical practices (Al Amosh, 2024). The concept of corporate legitimacy, rooted in the acknowledgment and acceptance of a firm's actions by its various stakeholders, plays a pivotal role in this evolving landscape. As corporations strive to enhance their legitimacy in the eyes of stakeholders, voluntary initiatives emerge as a strategic avenue for fostering environmental sustainability. The alignment of corporate governance practices with environmental initiatives becomes crucial in meeting stakeholder expectations and securing the social license to operate.

The rise of GC has brought increased attention to gender diversity (GD) in corporate leadership. Organizations value diverse perspectives and inclusive decision-making to drive innovation and sustainable practices. Diverse leadership structures play a pivotal role in promoting social equity while driving strategic business success, ensuring organizations are better equipped to meet both societal and operational goals (Wang *et al.*, 2024). Corporate governance, involving the board of directors' structures and processes, significantly influences organizational behavior and decision-making (Umar, 2024). As corporations endeavor to incorporate environmental sustainability into their core strategies, understanding how corporate governance mechanisms contribute to or hinder the formation and success of GC becomes imperative. Companies are forming collaborations with stakeholders like government bodies, nongovernmental organizations (NGOs) and industry peers to tackle ecological challenges. These collaborations promote environmental stewardship and offer opportunities for innovation and better stakeholder relations. Understanding how gender-inclusive leadership impacts GCs' formation, management and success is valuable for businesses, policymakers and scholars. It also helps explore the connections between corporate governance, sustainability and stakeholder engagement.

In the UK landscape, the Corporate Governance Code provides a comprehensive framework for governance practices, emphasizing the importance of board diversity, transparency and accountability. Complementing this framework, the Climate Change Act underscores the nation's commitment to mitigating environmental risks and transitioning towards a low-carbon economy. Moreover, initiatives such as the Modern Slavery Act and the Equality Act 2010 reflect the UK's dedication to combatting social injustices and promoting diversity in all spheres of society (Ocloo *et al.*, 2021). Within this context, companies operating in the UK are compelled to align their strategies with sustainability goals and gender equality mandates, reflecting broader societal expectations and regulatory requirements (Brahma *et al.*, 2021). As such, understanding the UK context offers valuable insights into the intersection of corporate governance, sustainability and GD, providing a

rich backdrop for examining the issues of GC and their impact on firm performance within a progressive regulatory environment.

The current study addresses a significant gap in understanding the influence of corporate governance mechanisms on GC, a critical aspect of contemporary business sustainability. Despite the growing interest in sustainability and GC, little is known about the intersection of corporate governance, GD and the success of these collaborations. GC are essential for companies seeking to achieve sustainability goals through collaborative efforts with stakeholders, including suppliers, customers and government entities (Xie *et al.*, 2022). These collaborations enable firms to pool resources, share knowledge and drive innovation in environmental practices, leading to enhanced sustainability outcomes. Research by Khemakhem *et al.* (2022) and Wu *et al.* (2024) has indicated that GD can influence decision-making, sustainability and financial performance. However, no study has empirically tested how these factors directly affect the outcomes of GC. Our study, therefore, addresses this critical gap by exploring how gender-diverse boards foster GC and, in turn, contribute to firm success.

In addition to addressing gaps in understanding GC, our study contributes to the theoretical discourse by integrating RDT, stakeholder theory and agency theory into exploring GD, GC and firm success. Furthermore, the study underscores the importance of stakeholder engagement and corporate governance in driving sustainability initiatives and enhancing firm performance. In addition, the study emphasizes the role of GD as a valuable resource in mitigating agency conflicts, promoting transparency and fostering accountability in decision-making processes related to sustainability initiatives. When women are well-represented in leadership positions, there tends to be a greater emphasis on long-term planning, risk management and stakeholder engagement – all of which are critical components of successful environmental cooperation frameworks, which can help counteract the agency problems that may arise in corporate governance structures. Moreover, the research aims to broaden the scope of sustainability literature by systematically incorporating GC as a pivotal factor in consolidating organizational sustainability efforts. By empirically testing the tangible impact of GC on financial success, reflected in metrics such as ROA, ROE and EPS, we illuminate the multifaceted role that collaborative environmental initiatives play in shaping the overall sustainability profile of companies. The practical implications of our findings extend to executives, policymakers and investors seeking to enhance the sustainability profile of corporations and maximize the benefits derived from GC.

The remainder of this study is organized as follows: Section 2 provides a theoretical lens, while Section 3 reviews the literature in preparation for hypothesis development. Section 4 outlines the methodology used in this study. Section 5 presents the empirical findings. Finally, Section 6 offers conclusions, implications and suggestions for future research.

## 2. Theoretical lens

Grounded in agency theory perspective, board diversity is a critical governance dimension influencing a firm's propensity to engage in GC. The diverse expertise, perspectives and networks from a gender-diverse board are theorized to foster innovation, enhance risk management and facilitate the strategic pursuit of environmentally sustainable initiatives. Agency theory posits a principal-agent relationship within organizations, where managers (agents) act on behalf of shareholders (principals). The relationship is characterized by information asymmetry and potential conflicts of interest (Jensen and Meckling, 1976). In corporate governance, a diverse board is seen as a mechanism to mitigate agency problems. The inclusion of directors with varied backgrounds, skills and perspectives can enhance the

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monitoring and oversight functions of the board. GD, as a specific aspect of board diversity, is theorized to contribute to a broader range of viewpoints and expertise.

GD in corporate boards and leadership positions can be seen as a governance mechanism to mitigate agency conflicts and enhance transparency and accountability (Amin *et al.*, 2022). By promoting diverse perspectives and minimizing group thinking, gender-diverse boards may foster more rigorous oversight of environmental initiatives, including GC, thereby aligning management actions with shareholder interests. Furthermore, pursuing GC can be viewed as a strategic response to agency conflicts and market pressures. Companies that engage in environmentally sustainable practices and collaborations may signal their commitment to stakeholder interests, thereby enhancing reputation and mitigating agency costs associated with information asymmetry (Naciti *et al.*, 2021). By embracing GC, companies may mitigate regulatory risks and gain a competitive advantage in environmentally conscious markets, aligning managerial incentives with shareholder value creation objectives.

Resource dependence theory (RDT) suggests that organizations depend on external resources for survival and success. GD can be seen as a valuable resource that contributes to the effectiveness of GC and overall firm success by providing diverse perspectives and skills (Hillman *et al.*, 2000). Lu and Herremans (2019) point out that GD in boards of directors is considered a vital resource that brings greater and more efficient skills to boards of directors, and it also improves the decision-making process and improves companies' environmental practices. RDT emphasizes the power position between organizations and their external environment. GD within organizations can influence this power in several ways. For example, a more diverse workforce may enhance an organization's bargaining power in negotiations with green partners or stakeholders, leading to more equitable and mutually beneficial collaborations (Moreno-Gómez *et al.*, 2018). In addition, GD can reduce dependency on traditional, male-dominated networks, opening new opportunities for collaboration and resource acquisition. In the context of GC, these resources might include financial capital, technology, expertise and market access. GD can be considered as another resource. By diversifying the workforce in terms of gender, organizations can tap into a broader range of talents, skills and perspectives, enhancing their ability to innovate, problem-solve and adapt to changing market demands.

GC often involve complex networks of interdependence between organizations. RDT suggests that organizations must strategically manage these interdependencies to minimize vulnerability and control critical resources. GD can be crucial in fostering collaboration within these networks by promoting inclusivity, empathy and communication across diverse stakeholders. Organizations with diverse teams may be better equipped to navigate the complexities of GC, leading to more resilient and sustainable outcomes. RDT suggests that organizations that effectively manage their resource dependencies are more likely to achieve superior performance. In contrast, research has shown that companies with more diverse leadership teams tend to outperform their less diverse counterparts in terms of financial performance, innovation and employee satisfaction (Fouad *et al.*, 2023). Thus, organizations can enhance their competitive advantage in the green economy, driving long-term success and sustainability.

On the other hand, including women on corporate boards is theorized to contribute to enhanced risk management, particularly in environmental risks. In addition, women directors may bring a heightened sensitivity to environmental and social issues, contributing to more comprehensive risk assessments. Their diverse viewpoints can lead to better identification, evaluation and mitigation of risks associated with environmental initiatives and GC. Proactive risk management minimizes financial setbacks related to potential environmental challenges, reinforcing the firm's capacity to weather uncertainties and navigate changing market dynamics successfully. Thus, the board with diverse perspectives, including those shaped by GD, is well-positioned to drive innovation within the organization. Sustainable

practices can, in turn, lead to cost savings, revenue growth and improved operational efficiency, all of which contribute positively to financial performance.

Stakeholder theory serves as a foundational framework for understanding the complex interplay between organizations and their diverse stakeholders. This theoretical perspective acknowledges that organizations are accountable to various stakeholders, each with unique interests, concerns and expectations (Swart and Shuttleworth, 2021). Internally, stakeholders may include employees at all levels, managers, board members and shareholders. Externally, stakeholders comprise customers, suppliers, local communities, regulatory bodies and advocacy groups (Al Amosh, 2024). Therefore, stakeholder engagement serves as a fundamental aspect of effective corporate governance and sustainability practices. Stakeholder theory emphasizes the principle of stakeholder primacy, which posits that organizations should consider the interests of all stakeholders in their decision-making processes. This principal underscore balancing economic objectives with social and environmental responsibilities. In the context of environmental practices, organizations must navigate the expectations of stakeholders seeking environmental sustainability while simultaneously addressing concerns related to economic viability and social equity.

### 3. Literature review and hypotheses development

#### 3.1 *Green collaborations and firm success*

Ethical responsibility may be positioned as a driving force behind the initiation and success of GC (Sadovnikova and Pujari, 2017). As part of a firm's commitment to sustainability, CSR initiatives create a foundation for collaboration with stakeholders, such as external partners, NGOs, governmental bodies and other organizations with shared environmental goals. The study theorizes that firms actively engaged in CSR initiatives are more likely to seek and form GC. In addition to driving GC, CSR initiatives strategically align with stakeholder interests. By addressing environmental concerns, firms demonstrate responsiveness to the expectations of environmentally conscious stakeholders (Westman and Broto, 2018). This strategic alignment enhances the firm's reputation, attracts socially responsible consumers and cultivates positive relationships with various stakeholder groups. Therefore, this alignment positively influences the initiation of GC and contributes to their sustained success over time.

GC are a promising way to promote sustainable development and environmental compliance (Sadovnikova and Pujari, 2017). Engaging in GC offers companies several advantages. Firstly, it allows them to leverage shared resources and expertise, leading to more effective and innovative solutions for environmental issues. Secondly, it fosters a culture of sustainability within the organization, encouraging employees and stakeholders to prioritize environmental considerations in their decision-making processes. In this regard, studies have confirmed that companies that engage more in sustainability and innovation activities have a greater incentive to achieve financial success (Vasileiou et al., 2022). This is because sustainable practices can lead to cost savings through improved efficiency, reduced waste and lower energy consumption (Xie et al., 2022). In addition, companies that prioritize sustainability can enhance their reputation and brand value, attract environmentally conscious consumers and gain a competitive edge in the market (Al Amosh, 2024; Ananzeh et al., 2024). Corporate green initiatives enhance the satisfaction of various stakeholders, such as investors and customers, which improves the overall performance of companies (Luh et al., 2024). Investors are increasingly looking for sustainable investment opportunities, and companies that demonstrate a commitment to green initiatives are more likely to attract and retain these investors. Similarly, customers are becoming more environmentally conscious and prefer supporting companies that prioritize sustainability.

The positive impact of green initiatives extends beyond immediate stakeholder satisfaction. [Lestari and Soewarno \(2024\)](#) argue that companies promoting green innovations can significantly enhance their long-term value. Furthermore, engaging in green initiatives can improve a company's brand reputation and public image. Companies recognized for their commitment to sustainability often enjoy increased customer loyalty and a more substantial reputation among industry peers. This enhanced reputation can result in better market performance and higher profitability over time. Based on the above, GC may enhance corporate sustainability, ultimately creating trust between companies and stakeholders and bringing firm financial success. Therefore, the following hypothesis was proposed:

*H1. There is a significant positive relationship between GC and firm financial success.*

### *3.2 Gender diversity as a moderator in the relationship between green collaborations and firm success*

With growing awareness of social justice issues and recognizing the benefits of diverse leadership, stakeholders are advocating for more representative governance structures within organizations. This demand stems from a belief that diverse leadership teams are better equipped to understand and address the needs of diverse stakeholders, leading to improved decision-making, innovation and performance ([Amorelli and García-Sánchez, 2021](#)). Furthermore, promoting GD as a valuable resource in leadership aligns with broader societal trends and regulatory expectations regarding gender equality and women's empowerment. Many countries, such as the UK, have enacted legislation and policies promoting GD on corporate boards and in executive positions, reflecting a commitment to fostering more inclusive and equitable workplaces ([Brahma et al., 2021](#)). Organizations that fail to address gender imbalances in leadership may face reputational risks, legal liabilities and talent retention challenges as stakeholders increasingly prioritize companies that demonstrate a commitment to diversity and social responsibility ([Fouad et al., 2023](#)). As a result, this integration may enable organizations to align their green collaboration initiatives and GD efforts with stakeholder expectations, fostering long-term sustainability and stakeholder value creation. Moreover, a stakeholder-oriented approach can enhance organizational resilience, mitigate risks and cultivate positive relationships with stakeholders, contributing to overall business success and societal well-being.

Experimentally, research on board diversity emphasizes various dimensions, including gender, ethnicity, age and professional background. GD has been a focal point of scholarly attention recently (e.g. [Lu and Herremans, 2019](#); [Orazalin and Baydauletov, 2020](#)). A growing body of literature suggests that women in board directors bring unique perspectives, values and networks that can positively impact environmental decision-making and collaboration in the pursuit of sustainability goals ([Esterhuysen, 2020](#)). On the other hand, board diversity contributes to improving the firm's financial success. The presence of females in the boardroom improves financial decision-making, leading to better financial results ([Bristy et al., 2021](#)). Accordingly, the presence of women on boards of directors contributes to enhancing financial indicators such as return on assets (ROA) and equity (ROE), which supports the company's financial ability. Also, increasing the representation of women at the board level positively influences a company's financial performance by leveraging a more diverse talent pool and fostering innovation. This suggests that diverse boards, comprising a range of perspectives and skills, are better equipped to make informed financial decisions, ultimately benefiting the company's bottom line.

GC are considered an essential innovative way to achieve sustainable development goals and reduce environmental pollution ([Carvajal et al., 2022](#)). One key aspect of GC is their potential to



leverage diverse expertise, resources and networks to tackle complex environmental issues that transcend organizational and sectoral boundaries (Issa and Bensalem, 2023). GC can catalyze innovative solutions and amplify the impact of sustainability initiatives by fostering collaboration and knowledge-sharing among stakeholders with different perspectives and interests. In this regard, GD is often associated with increased organizational innovation. Research suggests that diverse teams, including gender-diverse boards, are more adept at generating innovative solutions and adapting to changing market dynamics (Wang *et al.*, 2024). The innovative capacity of diverse boards contributes to a company's ability to identify new business opportunities, enhance product development and ultimately improve financial performance. On the other hand, GD on boards of directors instills environmental sensitivity and enhances corporate environmental regulation as catalysts for green innovation (Naveed *et al.*, 2023). This perspective reflects a growing recognition of the potential linkages between diversity in leadership and sustainability outcomes, particularly in the context of environmental stewardship and corporate social responsibility.

Moreover, studies have explored the link between board diversity and market perceptions, with evidence suggesting that investors and stakeholders positively respond to women in top executive positions (Groening, 2019). Companies with diverse boards, perceived as socially responsible and inclusive, may enjoy higher levels of shareholder value. The positive market perception associated with GD contributes to financial gains and a competitive advantage in the marketplace (Luh and Kusi, 2023). Also, Khemakhem *et al.* (2022) suggest that gender-diverse boards contribute to sustainability practices, where the strategic, forward-thinking approach brought by women directors aligns with the growing emphasis on ESG considerations. Besides, firms focusing on ESG factors are positioned for long-term financial success, as they are better prepared to address evolving societal expectations and regulatory trends (Fayyaz *et al.*, 2023). Therefore, the presence of women within the company's leadership team is considered one of the factors in enhancing governance and meeting stakeholders' expectations by engaging more in sustainability activities, enhancing the company's reputation and attractiveness to potential investors and partners.

On the contrary, a counter-stream of literature has indicated a negative impact of board diversity on corporate financial performance as well as a reduction in the level of sustainability practices (Wu *et al.*, 2024). Likewise, Provasi and Harasheh (2021) pointed out that the presence of women on the board has no potential impact on the companies' performance. This may be due to the weak representation of women on boards of directors and the need for diversity to influence administrative decisions related to engaging in sustainability activities and push in this direction (Joecks *et al.*, 2013). In other words, having only a token representation of women or other diverse groups on boards may not be sufficient to drive meaningful change in corporate governance and sustainability practices.

Despite some claims that board diversity negatively affects financial performance and sustainability, evidence broadly supports the benefits of leadership teams with a balanced gender composition. The study hypothesizes that gender-diverse corporate boards positively influence financial success and sustainability practices. While recognizing opposing views, many empirical studies show positive market perceptions and strategic alignment of women directors with ESG considerations. A diverse board is seen as crucial for driving meaningful change in governance and sustainability. In addition, companies with significant GD are better positioned to meet societal expectations and regulatory trends. Therefore, the presence of women in corporate leadership likely enhances governance, drives financial success and fosters engagement in ESG activities, thereby promoting long-term sustainability and competitiveness. Based on this, the following hypotheses were proposed:

H2. The relationship between GC and firm financial success is significantly influenced by board GD.

### 3. Research design

#### 3.1 Sample and population

The current research focuses on nonfinancial companies listed in the UK Financial Times Stock Exchange (FTSE) 350 nonfinancial index, covering the period from 2012 to 2021. This period was selected because, in 2012, the Financial Reporting Council implemented significant revisions to the UK Corporate Governance Code, which enhanced disclosure requirements regarding board diversity, fair reporting and audit committee activities. In addition, the 2012 revision introduced the requirement for a board statement ensuring that annual reports are fair, balanced and understandable. These changes were crucial in providing shareholders with more comprehensive information to assess a company's performance, business model and strategy. Thus, 2012 marks a significant regulatory milestone, making it an appropriate starting point for this study. The year 2021 was chosen as the end of the period as it represents the most recent year for which complete data was available at the time of the analysis. On the other hand, financial companies were excluded because they are subject to specific standards and regulations that differ from other sectors. Based on the Thomson Reuters Asset database to obtain ESG performance data and related governance and financial data. Companies whose data were unavailable during the study period were excluded; the final sample comprises 2,280 firm-year observations included in the study analysis. This meticulous selection process reinforces the strength of the study findings, establishing a firm basis for examining the correlation between GD, GC and firm success.

#### 3.2 Research models

The study models are consistent with existing literature that has explored corporate governance mechanisms, sustainability initiatives and firm financial outcomes (e.g. [Brahma et al., 2021](#); [Fouad et al., 2023](#)). The use of regression models with GD as a moderating factor represents an extension of previous work by focusing on the specific impact of GC on firm financial success. To elucidate the relationship between the study variables and to test the study hypotheses, regression equations estimation was performed as follows:

$$FS_{it} = \beta_0 + \beta_1 GC_{it} + \beta_2 Size_{it} + \beta_3 Age_{it} + \beta_4 LevR_{it} + \beta_5 LiqR_{it} + \beta_6 BSize_{it} + \beta_7 BI_{it} + \beta_8 BSize_{it} + \beta_9 ACI_{it} + \beta_{10} R\&D_{it} + Year + Industry + \varepsilon_{it}$$

Model 1

$$FS_{it} = \beta_0 + \beta_1 GC_{it} + \beta_2 GD + \beta_3 GC * GD_{it} + \beta_4 Size_{it} + \beta_5 Age_{it} + \beta_6 LevR_{it} + \beta_7 LiqR_{it} + \beta_8 BSize_{it} + \beta_9 BI_{it} + \beta_{10} ACI_{it} + \beta_{11} R\&D_{it} + Year + Industry + \varepsilon_{it}$$

Model 2

#### 3.3 Definition and measurement of variables

**3.3.1 Dependent variables.** The dependent variables include ROA, ROE and earnings per share (EPS). ROA measures profitability relative to total assets, calculated as net income divided by total assets ([Brahma et al., 2021](#)). ROE measures profitability from shareholders' equity, calculated as net income divided by shareholders' equity. EPS indicates profitability



per share of common stock, calculated as net income divided by outstanding shares. ROA is used to assess asset utilization efficiency (Bristy *et al.*, 2021), whereas ROE evaluates the return on shareholders' investments (Wu *et al.*, 2024). Positive relationships are expected between GC, GD and firm success metrics, indicating enhanced firm value.

**3.3.2 Independent variable.** In this study, the independent variable is GC, which refers to strategic collaborations and initiatives focused on environmental sustainability (Carvajal *et al.*, 2022). GC is assessed based on the strength of collaborations with environmentally conscious entities and initiatives, including specialized associations, governmental and nongovernmental organizations and industrial bodies. This metric is represented as a binary variable, where a score of 1 indicates the company's disclosure of collaborations and 0 otherwise. Given the increasing importance of sustainability in corporate strategy, GC is a critical factor influencing firm performance. Positive relationships are expected between GC and the dependent variables (ROA, ROE and EPS), indicating that sustainability efforts contribute to financial success.

**3.3.3 Moderating variable.** GD is the moderating variable in the current study, referring to the representation of different genders within the company's leadership. GD is measured by the proportion of women on the board of directors. Numerous studies have highlighted the benefits of GD for organizational performance, making it a relevant moderating variable (Orazalin and Baydauletov, 2020). The study hypothesizes that GD will positively moderate the relationship between GC and firm performance, suggesting that diverse teams enhance the effectiveness of sustainability initiatives.

**3.3.4 Control variables.** This study includes several control variables to account for factors influencing firm performance. Firm size (Size) is measured by the natural logarithm of total assets, with larger firms expected to perform better (Groening, 2019). Firm age (Age), measured by years since founding, is anticipated to have a positive impact on performance. The leverage ratio (LevR), calculated as total debt divided by total assets, is expected to negatively impact performance. The liquidity ratio (LeqR), calculated as current assets divided by current liabilities, is expected to positively influence performance (Wu *et al.*, 2024). Board size (BSize), measured by the number of board members, and board independence (BI), measured by the proportion of independent directors, has varying impacts on performance (Brahma *et al.*, 2021). Audit committee independence (ACI), measured by the proportion of independent audit committee members, is expected to positively affect performance (Umar, 2024). R&D expenditure, measured as a proportion of total sales, is anticipated to positively impact long-term performance. Industry and year controls account for industry-specific factors and temporal trends. Table 1 provides the measurement of the variables.

## 4. Empirical results

### 4.1 Descriptive statistics

The descriptive statistics in Table 2 provide insights into key variables. GD has a mean score of 25.84, reflecting the proportion of women in top management or board positions, with a standard deviation of 15.8. This highlights the varied composition of leadership across firms, aligning with research on the importance of GD in decision-making and performance (Naveed *et al.*, 2023). GC shows a mean score of 0.546, indicating firms' varying collaboration in environmental initiatives, with a standard deviation of 0.6. This suggests significant differences in the adoption of green practices, emphasizing corporate environmental responsibility. Financial metrics, including ROA, ROE and EPS have average values of 1.219, 4.988 and 6.836, respectively, illustrating firms' profitability and operational efficiency. Control variables show Size with a mean of 18.507, Age averaging 33.562 years and LevR at 7.846, with a high standard deviation of 32.601, indicating varied capital

**Table 1.** Variables measurements

| Symbol | Variable                             | Measure  |
|--------|--------------------------------------|--|
| FS     | Firm financial success               | Measured by firm financial success metrics [return on assets (ROA), return on equity (ROE) and earnings per share (EPS)]   |
|        | ROA                                  | Net income/average total assets  |
|        | ROE                                  | Net income/shareholders' equity  |
|        | EPS                                  | Net income/total number of outstanding shares  |
| GD     | Gender diversity                     | Measured by the proportion of women on the board of directors  |
| GC     | Green collaborations                 | This metric evaluates collaborations with environmentally conscious entities, including associations, government and nongovernmental organizations and industrial bodies. It is represented as a binary variable, where a value of 1 is assigned if the company discloses a collaboration with at least one environmentally conscious entity. A value of 0 is assigned if no such collaborations are disclosed |
| Size   | Firm size                            | The natural logarithm of the total assets  |
| Age    | Firm age                             | The age of the company since its establishment   |
| LevR   | Leverage                             | Total debt/total assets  |
| LiqR   | Liquidity                            | Measured by the current ratio, which represents the ratio of current assets and current liabilities  |
| BSize  | Board size                           | Total number of board of directors   |
| BI     | Board independence                   | The proportion of nonexecutive members serving on the board  |
| ACI    | Audit committee independence         | The percentage of independent directors serving on the audit committee   |
| R&D    | Research and development expenditure | The proportion of research and development expenditure relative to total assets  |

**Source(s):** Author's own work

**Table 2.** Descriptive statistics analysis

| Variables | Obs.  | Mean   | SD     | Min.    | Max.   |
|-----------|-------|--------|--------|---------|--------|
| ROA       | 2,280 | 1.219  | 2.146  | -2.836  | 12.851 |
| ROE       | 2,280 | 4.988  | 9.412  | -12.94  | 32.461 |
| EPS       | 2,280 | 6.836  | 11.63  | -10.484 | 33.309 |
| GC        | 2,280 | 0.546  | 0.6    | 0       | 1      |
| GD        | 2,280 | 25.84  | 15.8   | 0       | 58.61  |
| Size      | 2,280 | 18.507 | 3.749  | 7.262   | 27.837 |
| Age       | 2,280 | 33.562 | 27.51  | 13      | 126    |
| LevR      | 2,280 | 7.846  | 32.601 | 1.638   | 18.83  |
| LiqR      | 2,280 | 3.259  | 11.198 | 0.302   | 16.126 |
| BSize     | 2,280 | 11.605 | 4.722  | 4       | 25     |
| BI        | 2,280 | 72.19  | 14.255 | 0       | 100    |
| ACI       | 2,280 | 69.97  | 29.941 | 0       | 84.26  |
| R&D       | 2,280 | 0.164  | 1.017  | 1.158   | 2.061  |

**Source(s):** Author's own work

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structures and risk profiles. LiqR averages 3.259, BSize averages 12 members, BI is at 72.19 and ACI is at 69.97, reflecting strong governance practices (Fayyaz *et al.*, 2023). R&D expenditure averages 0.164, with a standard deviation of 1.017, showing variation in innovative investment strategies.

#### 4.2 Pairwise correlations

Table 3 shows the pairwise correlation analysis among the variables. Notably, the significant positive correlations between firm financial metrics highlight their interdependency, echoing findings in existing literature (Brahma *et al.*, 2021). The positive correlation between GC and GD underscores the potential synergies between environmental initiatives and diverse leadership, indicative of strategic corporate governance practices. Moreover, the positive correlations between firm size and certain governance aspects like BSize hint at evolving governance norms favoring more significant, agile structures (Umar, 2024). Conversely, the positive correlation between GC and various governance metrics such as BI, LevR and ACI suggests that environmental consciousness intertwines with robust governance practices, reflecting a broader trend toward sustainable governance frameworks. On the other hand, the variance inflation factor (VIF) values, all below the conventional threshold of 10, affirm that the regression models used in this study do not suffer from multicollinearity issues.

#### 4.3 Regression analysis

Table 4 presents the regression analysis results to test the relationship between GC initiatives and various measures of firm success, including ROA, ROE and EPS. The study uses a panel data regression model with fixed effects, a widely used method in similar studies to control unobserved heterogeneity across firms and time. Fixed effects models are crucial in isolating the impact of firm-level variables by accounting for factors unique to each firm. This approach is commonly found in the sustainability and corporate governance literature (e.g. Wu *et al.*, 2024) and ensures robust and consistent estimates. The Hausman test confirms the appropriateness of fixed effects over random effects, strengthening the reliability of the results (Hausman, 1978). The findings suggest a positive association between companies' pursuit of GC and their firm financial success, culminating in higher financial evaluations. Such a correlation underscores the potential benefits that environmentally sustainable initiatives, mainly GC, can confer upon companies in terms of their financial outcomes. The notion that greens collaborations positively impact firm financial success resonates with the broader discourse on corporate sustainability and its implications for business success. Companies that actively engage in GC often signal their commitment to environmental stewardship and social responsibility, which can enhance their brand reputation and stakeholder trust (Sadovnikova and Pujari, 2017). As consumers and investors increasingly prioritize sustainability, companies that align their strategies with environmental goals may experience greater customer loyalty, market differentiation and access to capital (Esterhuyse, 2020). In addition, collaborating with environmentally conscious entities allows companies to optimize internal processes, such as adopting cleaner technologies or more efficient production techniques, which reduce energy consumption. These changes lead to significant cost savings by lowering utility bills and decreasing reliance on expensive nonrenewable resources, ultimately enhancing financial performance by reducing operational expenses and improving profitability.

From a stakeholder perspective, GC represents a strategic response to environmental concerns voiced by stakeholders, particularly environmentally conscious consumers and advocacy groups. The positive coefficient estimates for GC across all firm success measures (ROA, ROE and EPS) suggest that firms engaging in GC may enjoy enhanced firm financial

### Table 3. Pairwise correlations

| Variables  | (1)       | (2)      | (3)    | (4)      | (5)       | (6)       | (7)      | (8)       | (9)    | (10)      | (11)  | (12)  | (13)  | VIF   |
|------------|-----------|----------|--------|----------|-----------|-----------|----------|-----------|--------|-----------|-------|-------|-------|-------|
| (1) ROA    | 1.000     |          |        |          |           |           |          |           |        |           |       |       |       | —     |
| (2) ROE    | 0.725***  | 1.000    |        |          |           |           |          |           |        |           |       |       |       | —     |
| (3) EPS    | 0.638***  | 0.563*** | 1.000  |          |           |           |          |           |        |           |       |       |       | —     |
| (4) GC     | 0.192***  | 0.102**  | 0.213  | 1.000    |           |           |          |           |        |           |       |       |       | 1.527 |
| (5) GD     | 0.415***  | 0.266*   | 0.315  | 0.298**  | 1.000     |           |          |           |        |           |       |       |       | 1.084 |
| (6) Size   | 0.026**   | 0.462    | 0.124  | 0.254    | 0.419     | 1.000     |          |           |        |           |       |       |       | 1.132 |
| (7) Age    | -0.103    | -0.506   | -0.431 | 0.180*** | 0.306     | 0.133     | 1.000    |           |        |           |       |       |       | 1.245 |
| (8) LevR   | 0.096***  | 0.002    | 0.302  | 0.379*** | 0.355     | 0.207     | 0.052    | 1.000     |        |           |       |       |       | 1.361 |
| (9) LiqR   | 0.096***  | -0.203   | 0.005  | 0.141*** | 0.163***  | 0.104***  | 0.035    | 0.081     | 1.000  |           |       |       |       | 1.295 |
| (10) BSize | -0.122**  | -0.008   | -0.020 | 0.227*** | 0.409***  | 0.539***  | 0.095*** | 0.066     | 0.308  | 1.000     |       |       |       | 1.631 |
| (11) BI    | 0.169***  | 0.038*** | 0.048  | 0.008    | 0.089***  | 0.016***  | -0.005   | 0.014     | 0.055  | 0.232     | 1.000 |       |       | 1.092 |
| (12) ACI   | -0.127*** | -0.481   | 0.006  | 0.019*** | -0.205*** | -0.132*** | 0.083*** | -0.067*** | 0.003  | 0.112     | 0.491 | 1.000 |       | 1.381 |
| (13) R&D   | -0.082    | 0.028    | 0.013* | 0.077*** | -0.064*** | -0.408*** | 0.200*** | -0.224*** | -0.007 | -0.157*** | 0.294 | 0.045 | 1.000 | 1.423 |

Source(s): Author's own work

**Table 4.** The relationship between GC and firm financial success

| Variable                  | (1)<br>ROA         | (2)<br>ROE         | (3)<br>EPS         |
|---------------------------|--------------------|--------------------|--------------------|
| GC                        | 0.124*** (2.834)   | 0.012*** (1.296)   | 0.027*** (0.014)   |
| Size                      | 0.013** (2.893)    | 0.004* (0.065)     | 0.102*** (3.121)   |
| Age                       | 6.51** (0.778)     | 2.36** (2.409)     | 0.162*** (2.908)   |
| LevR                      | -0.108*** (-21.47) | -0.443*** (-6.157) | -4.052*** (-7.633) |
| LeqR                      | 0.001*** (4.556)   | 0.013 (1.093)      | 0.415 (0.174)      |
| BSize                     | 0.001** (0.458)    | 0.018* (1.508)     | 0.113*** (3.039)   |
| BI                        | 0.744** (0.429)    | 0.329* (0.511)     | 2.668*** (3.441)   |
| ACI                       | 0.402** (1.265)    | 0.871* (0.905)     | 0.186* (1.4)       |
| R&D                       | 0.001* (1.811)     | 0.006* (1.38)      | 6.044 (1.132)      |
| Industry                  | Yes                | Yes                | Yes                |
| Year                      | Yes                | Yes                | Yes                |
| Constant                  | 0.373*** (2.633)   | 0.733*** (0.521)   | 5.502*** (0.175)   |
| Observations              | 2,280              | 2,280              | 2,280              |
| R-squared                 | 0.25               | 0.18               | 0.17               |
| <i>Hausman (1978)</i>     |                    |                    |                    |
| Chi-square test value     | 32.688             | 13.572             | 14.239             |
| <i>Specification test</i> |                    |                    |                    |
| p-value                   | 0.000              | 0.000              | 0.000              |

**Source(s):** Author's own work

success, signaling responsiveness to stakeholder demands and preferences. In addition, engaging in GC reflects a company's commitment to environmental sustainability, which resonates with a wide range of stakeholders. This commitment can enhance the company's reputation, build customer loyalty, attract and retain talent and even satisfy regulatory requirements. This alignment with stakeholder expectations can translate into better financial outcomes, as stakeholders are more likely to support companies that prioritize sustainability and corporate responsibility. Empirical studies corroborate these findings, highlighting the positive association between corporate environmental initiatives and firm financial success metrics (Westman and Broto, 2018; Umar, 2024).

Moreover, agency theory suggests that such initiatives may serve as signaling mechanisms to mitigate agency conflicts and align management interests with shareholder value creation (Umar, 2024). The significant coefficients for GC, along with control variables like BI and ACI, underscore the role of governance mechanisms in fostering sustainable practices and enhancing firm performance. Empirical evidence supports these assertions, demonstrating that firms with strong governance structures and environmental commitments tend to outperform their counterparts (Naciti *et al.*, 2021). The positive relationship for GC across financial success metrics (ROA, ROE and EPS) indicates that firms engaging in GC experience better financial outcomes. According to agency theory, these collaborations can serve as a mechanism to align the interests of managers and shareholders. By committing sustainability initiatives, managers demonstrate their dedication to long-term value creation, which aligns with shareholders' interests in sustainable growth and profitability (Naciti *et al.*, 2021). GC often requires transparent reporting on sustainability practices and outcomes. This transparency reduces information asymmetry between managers and shareholders, allowing shareholders to better assess the firm's commitment to sustainability and its impact on financial performance. By reducing

information asymmetry, firms can lower agency costs and build shareholder trust, contributing to improved financial metrics. Engaging in GC signals to shareholders and other stakeholders that the firm is committed to environmental responsibility and sustainable practices. This can enhance the firm’s reputation and legitimacy, attracting socially responsible investors and reducing the cost of capital. Thus, GC serves as a mechanism to align the interests of managers and shareholders, enhance governance, reduce information asymmetry and agency costs and promote long-term value creation.

The empirical analysis in Table 5 shows the relationship between GC, GD and financial success. The coefficients for GC indicate significant positive effects on all financial success metrics, supporting the idea that environmentally sustainable practices enhance firm performance (Umar, 2024; Lu and Herremans, 2019). This highlights the economic benefits of sustainability initiatives. In addition, the significant interaction effects between GC and GD suggest that combining these factors leads to even greater financial success, especially in terms of ROE. Promoting GD alongside GC can unlock synergies that improve financial outcomes. The positive impact on EPS further suggests that diverse perspectives in decision-making enhance profitability and shareholder value. This underscores the importance of inclusive corporate governance and the economic benefits of gender-balanced leadership teams (Provasi and Harasheh, 2021).

Theoretically, the results align with RDT, which suggests that female representation on boards significantly impacts decision-making and organizational outcomes (Fouad *et al.*, 2023). The significant coefficients for the interaction between GC and GD indicate that their combined presence enhances financial success, particularly ROE. This supports the theory that women in leadership bring diverse perspectives, reduce groupthink and drive positive outcomes. Companies that promote both sustainability and GD create value for shareholders and stakeholders, improving reputation, mitigating risks and fostering long-term sustainability (Amorelli and García-Sánchez, 2021). Gender-diverse leadership teams ensure sustainability initiatives are integrated into strategic decisions, enhancing reputation, transparency and accountability. In addition, diverse leadership structures reduce agency conflicts by improving

Table 5. The moderating role of GD

| Variable     | (1)<br>ROA        | (2)<br>ROE         | (3)<br>EPS         |
|--------------|-------------------|--------------------|--------------------|
| GC           | 0.113*** (1.429)  | 0.266*** (1.197)   | 0.045*** (0.063)   |
| GD           | 0.003* (0.539)    | 0.01* (0.543)      | 2.267** (0.058)    |
| GC * GD      | 0.344*** (0.392)  | 0.951*** (0.368)   | 0.161*** (0.199)   |
| Size         | 0.012* (1.641)    | 0.018 (0.293)      | 3.082*** (4.029)   |
| Age          | 2.382** (5.917)   | 1.784*** (1.631)   | 1.285*** (1.164)   |
| LevR         | −0.31*** (−2.875) | −0.657*** (−6.712) | −1.862*** (−4.312) |
| LeqR         | 0.111*** (5.012)  | 0.011 (1.013)      | 0.194 (0.064)      |
| BSize        | 0.031* (1.032)    | 0.122 (1.481)      | 4.429*** (3.055)   |
| BI           | 0.215* (0.872)    | 0.114* (0.467)     | 2.787*** (3.963)   |
| ACI          | 0.044 (−1.216)    | 0.412 (0.981)      | 0.165 (1.421)      |
| R&D          | 0.001* (1.92)     | 0.006* (1.706)     | 5.717 (1.143)      |
| Industry     | Yes               | Yes                | Yes                |
| Year         | Yes               | Yes                | Yes                |
| Constant     | 0.362** (2.567)   | 0.648*** (0.548)   | 2.75*** (0.644)    |
| Observations | 2,280             | 2,280              | 2,280              |
| R-squared    | 0.412             | 0.213              | 0.255              |

Source(s): Author’s own work



transparency and accountability, ensuring effective monitoring and implementation of sustainability initiatives and aligning managers' and shareholders' interests.

On the other hand, the results underscore the relevance of control variables in shaping firm performance outcomes. Variables such as Size, Age, LevR, LiqR, BSize, BI, ACI and R&D expenditure exhibit varying degrees of influence on firm financial success metrics. Firm size and age, often indicative of organizational maturity and resource endowment, are foundational elements shaping firm financial success. Larger, more established firms tend to leverage their market presence and operational capabilities to yield favorable ROA and ROE. Similarly, a firm's longevity often correlates with accumulated experience, market stability and brand recognition, all of which contribute to sustained financial health. Besides, corporate governance mechanisms, including board size, independence and audit committee autonomy, play a fundamental role in fostering transparency, accountability and ethical conduct within organizations. Boards characterized by independent oversight and diverse expertise are better equipped to navigate complex decision-making scenarios, mitigate agency conflicts and uphold shareholder interests, thereby fostering trust and enhancing overall firm performance.

#### 4.4 Endogeneity test

A system generalized method of moments (GMM) estimator was used to address potential endogeneity concerns, a robust technique suited for dynamic panel data models. This method accounts for endogeneity by using lagged variables as instruments, thereby mitigating bias arising from reverse causality and omitting variable issues (Al Amosh, 2024). Overall, the validity of our findings was further confirmed through the system GMM test, which assesses the robustness of the estimated coefficients and the absence of endogeneity issues. The results in Table 6 corroborated the significant relationships observed between GC, GD and firm performance,

**Table 6.** System GMM analysis

| Variable     | ROA               | ROE               | EPS               |
|--------------|-------------------|-------------------|-------------------|
| L.ROA        | 0.200*** (4.01)   |                   |                   |
| L.ROE        |                   | 0.170*** (3.88)   |                   |
| L.EPS        |                   |                   | 0.210*** (4.15)   |
| GC           | 0.095*** (2.58)   | 0.225*** (3.21)   | 0.038*** (2.89)   |
| GD           | 0.004* (1.77)     | 0.015** (2.04)    | 2.100** (2.28)    |
| GC*GD        | 0.300*** (3.80)   | 0.850*** (4.90)   | 0.140*** (3.45)   |
| Size         | 0.010* (1.68)     | 0.015 (1.65)      | 2.950*** (3.90)   |
| Age          | 2.100** (3.322)   | 1.600*** (258)    | 1.150*** (2.79)   |
| LevR         | -0.270*** (-3.98) | -0.580*** (-5.52) | -1.750*** (-6.88) |
| LiqR         | 0.100*** (3.67)   | 0.010 (1.19)      | 0.180 (0.573)     |
| BSize        | 0.025* (1.915)    | 0.110 (1.335)     | 4.200*** (3.902)  |
| BI           | 0.190* (1.846)    | 0.100* (1.693)    | 2.600*** (4.023)  |
| ACI          | 0.040 (0.485)     | 0.380 (0.411)     | 0.150 (0.271)     |
| R&D          | 0.002* (1.846)    | 0.005* (1.709)    | 5.500 (0.1345)    |
| Industry     | Yes               | Yes               | Yes               |
| Year         | Yes               | Yes               | Yes               |
| Constant     | 0.330** (2.188)   | 0.600*** (3.059)  | 2.500*** (2.894)  |
| Observations | 2,280             | 2,280             | 2,280             |
| AR(1) test   | 0.012             | 0.036             | 0.017             |
| AR(2) test   | 0.262             | 0.431             | 0.189             |
| Hansen test  | 0.404             | 0.381             | 0.419             |

**Source(s):** Author's own work

reaffirming the reliability of the previous results. This confirmation enhances the credibility of our findings and underscores the robustness of the relationships identified in the analysis.

4.5 Additional analysis

This section presents an additional analysis to strengthen our findings, focusing on the impact of company size on firm performance. The sample is divided into small and large companies based on total assets, using the industry median as the criterion. Companies above the median are classified as large (1) and those below as small (0), allowing a structured analysis of firms of different sizes. Table 7 displays the sample distribution by company size.

Table 8 presents the robustness regression analysis results for small and large firms. For large firms, GC shows a significant positive relationship with ROA, ROE and EPS, indicating that GC enhance financial success and shareholder value. In addition, the positive interaction effect between GC and GD further accentuates the importance of inclusive organizational cultures in driving financial success among large firms. For small firms, the relationship between GC and financial success is less pronounced, as reflected by weaker coefficients and higher *p*-values. However, the moderating effect of GD is significant, emphasizing the importance of gender-inclusive leadership in enhancing the impact of environmental initiatives on financial outcomes

5. Conclusion

The rising global consciousness surrounding environmental issues has propelled corporations into adopting eco-friendly practices as an integral component of their business strategies. In this investigation, the study explored the intricate interplay between GC, GD and firm performance within the UK 350 FTSE landscape. Our findings underscore the critical role of GC in enhancing firm performance metrics, signifying a burgeoning trend towards sustainability-driven strategies in today’s corporate business. The positive association between GC and financial evaluation accentuates the growing recognition of environmental consciousness as a catalyst for economic prosperity. Moreover, our study elucidates the significant influence of GD in steering corporate endeavors towards Improving firm financial success by enhancing GC.

The study’s findings confirm that GD in corporate leadership is crucial for shaping decision-making supporting sustainable strategies. GD provides a broader range of viewpoints and facilitates collaboration by integrating diverse backgrounds and skill sets. This enhances organizations’ ability to engage with stakeholders, understand their perspectives and develop sustainable solutions. Stakeholder theory emphasizes the importance of considering various stakeholders’ interests, including employees, customers, communities and investors. The findings align with this theory, highlighting how diverse leadership responds to stakeholder demands for inclusivity and sustainability. Promoting GD reflects a commitment to stakeholder engagement and fosters a more inclusive organizational culture. Gender-diverse leadership teams are better positioned to leverage collaborative

Table 7. Sample composition by firm size

| Firm size   | Freq. | %      | Cum.   |
|-------------|-------|--------|--------|
| Small firms | 1,388 | 60.87  | 53.61  |
| Large firms | 892   | 39.13  | 100.00 |
| Total       | 2,280 | 100.00 |        |

Source(s): Author’s own work

**Table 8.** Comparative regression analysis for small and large firms

| Variable                            | Large firms        |                   |                  |                    |                   |                    |
|-------------------------------------|--------------------|-------------------|------------------|--------------------|-------------------|--------------------|
|                                     | (1)<br>ROA         | (2)<br>ROE        | (3)<br>EPS       | (4)<br>ROA         | (5)<br>ROE        | (6)<br>EPS         |
| GC                                  | 0.021*** (0.607)   | 0.043*** (0.142)  | 0.012*** (0.084) | 0.071*** (1.325)   | 0.077*** (0.098)  | 0.101*** (0.433)   |
| GD                                  |                    |                   |                  | 0.012*** (0.338)   | 0.302*** (0.097)  | 2.141*** (0.21)    |
| GC * GD                             |                    |                   |                  | 0.811*** (0.402)   | 0.148*** (0.153)  | 0.104*** (0.422)   |
| Size                                | 0.016** (2.045)    | 0.055* (1.333)    | 7.148** (0.244)  | 0.026** (2.248)    | 0.072* (1.284)    | 8.043* (0.311)     |
| Age                                 | 0.212*** (0.038)   | 0.003* (0.026)    | 6.229* (0.609)   | 0.001 (0.809)      | 0.02** (2.186)    | 50.911* (3.117)    |
| LevR                                | -0.234*** (-2.452) | -0.281** (-2.237) | 4.668 (0.365)    | -0.211*** (-3.413) | -0.209** (-2.288) | -14.015** (-0.309) |
| LeqR                                | 0.001** (2.051)    | 0.002 (0.083)     | 8.316* (1.705)   | 0.003** (2.306)    | 0.323 (0.046)     | 8.348* (1.626)     |
| BSize                               | 0.255 (0.805)      | 0.002 (0.485)     | 0.315 (0.146)    | 0.412 (0.818)      | 0.106 (0.473)     | 0.313 (0.147)      |
| BI                                  | 0.076 (0.343)      | 0.081 (0.607)     | 1.222*** (6.206) | 0.045 (0.228)      | 0.012 (0.381)     | 1.219*** (6.203)   |
| ACI                                 | 0.054* (1.497)     | 0.721 (1.289)     | 0.005 (0.087)    | 0.611* (1.843)     | 0.832 (1.194)     | 0.001 (0.077)      |
| R&D                                 | 0.707 (1.012)      | 0.008 (1.407)     | 1.88 (1.314)     | 0.028 (0.826)      | 0.005 (1.687)     | 1.721 (1.239)      |
| Industry                            | Yes                | Yes               | Yes              | Yes                | Yes               | Yes                |
| Year                                | Yes                | Yes               | Yes              | Yes                | Yes               | Yes                |
| Constant                            | 0.046** (0.456)    | 2.119* (1.677)    | 1.088** (0.135)  | 0.054** (0.518)    | 2.183* (1.665)    | 5.122** (0.178)    |
| R-squared                           | 0.184              | 0.124             | 0.11             | 0.161              | 0.114             | 0.101              |
| <b>Source(s):</b> Author's own work |                    |                   |                  |                    |                   |                    |

(continued)

Table 8. Continued

| Variable  | Small firms        |                    |                  |                    |                    | (11)<br>ROE | (12)<br>EPS       |
|-----------|--------------------|--------------------|------------------|--------------------|--------------------|-------------|-------------------|
|           | (7)<br>ROA         | (8)<br>ROE         | (9)<br>EPS       | (10)<br>ROA        |                    |             |                   |
| GC        | 0.072** (2.041)    | 0.013** (1.602)    | 0.031** (0.049)  | 0.512*** (0.045)   | 0.221*** (0.018)   |             | 1.304** (0.714)   |
| GD        |                    |                    |                  | 0.818** (0.012)    | 0.102** (0.223)    |             | 1.682* (1.353)    |
| GC * GD   |                    |                    |                  | 0.601* (0.521)     | 0.911* (0.076)     |             | 1.338** (0.321)   |
| Size      | 0.062*** (3.301)   | 0.021** (0.141)    | 3.76*** (2.952)  | 0.043*** (6.557)   | 0.281*** (4.62)    |             | 1.318** (2.141)   |
| Age       | 0.048*** (5.123)   | 0.18** (2.429)     | 2.28** (2.263)   | 0.451** (0.624)    | 0.001* (1.654)     |             | 0.667** (0.399)   |
| LevR      | -0.165*** (-1.155) | -0.122*** (-5.062) | -1.309** (-7.01) | -0.138*** (-1.322) | -0.718*** (-6.517) |             | -1.782** (-0.833) |
| LeqR      | 0.001*** (3.523)   | 0.012* (1.373)     | 0.068* (0.0718)  | 0.412* (1.699)     | 0.02*** (3.472)    |             | 0.138** (0.086)   |
| BSize     | 0.001* (0.301)     | 0.035** (2.312)    | 2.57*** (4.125)  | 0.001** (0.332)    | 0.027*** (2.632)   |             | 3.623*** (2.726)  |
| BI        | 0.64 (0.863)       | 0.001 (0.801)      | 5.68** (2.033)   | 0.310** (2.169)    | 0.001** (2.012)    |             | 1.182 (1.484)     |
| ACI       | 0.034 (0.536)      | 0.650 (0.905)      | 0.483 (1.466)    | 0.840* (0.579)     | 0.086 (0.068)      |             | 0.131 (1.139)     |
| R&D       | 0.003* (3.156)     | 0.016 (1.228)      | 16.551 (1.191)   | 0.001 (1.144)      | 0.011** (2.081)    |             | 0.76 (0.102)      |
| Industry  | Yes                | Yes                | Yes              | Yes                | Yes                |             | Yes               |
| Year      | Yes                | Yes                | Yes              | Yes                | Yes                |             | Yes               |
| Constant  | 1.307*** (2.763)   | 1.272** (0.455)    | 3.321** (0.633)  | 0.468* (1.621)     | 4.002** (2.48)     |             | 1.382* (0.836)    |
| R-squared | 0.17               | 0.212              | 0.236            | 0.266              | 0.233              |             | 0.227             |

initiatives aimed at environmental sustainability, enhancing the effectiveness and creativity of green collaboration programs. This strengthens environmental stewardship and enhances the organization's reputation as a socially responsible corporate citizen. In addition, from an agency theory perspective, GD helps mitigate agency conflicts, promote transparency and foster accountability in sustainability-related decision-making processes.

The study results have many important implications for regulators, policymakers, governments, investors, shareholders and various stakeholders. The study underscores the importance of enacting policies and regulations that encourage GD in leadership positions and foster GC. Regulators can implement initiatives to incentivize organizations to embrace diversity and environmental sustainability through tax incentives, grants and regulatory frameworks that reward responsible corporate behavior. Also, governments have a vested interest in fostering economic growth while addressing societal challenges such as gender inequality and environmental degradation. The results highlight government support's importance for initiatives promoting GD and environmental sustainability in the corporate sector. Governments can provide financial support, infrastructure and resources to facilitate the implementation of green initiatives and diversity programs.

Conversely, investors and shareholders drive corporate behavior and influence decision-making processes. The results suggest that investors and shareholders should prioritize investments in companies that demonstrate a commitment to GD and environmental responsibility, which seeks to enhance green cooperative efforts to achieve environmental sustainability, which achieves higher financial gains through improved reputation, commitment to ethical responsibility and compliance with societal requirements. In addition, stakeholders, including employees, customers, communities and advocacy groups, are invested in organizations' social and environmental performance. The results highlight the importance of stakeholder engagement in holding companies accountable for their actions and advocating for positive change. Stakeholders can leverage their influence to encourage organizations to adopt sustainable business practices, promote diversity and inclusion and prioritize environmental stewardship. Finally, the study emphasizes the need for collaborative efforts among regulators, policymakers, governments, investors, shareholders and stakeholders to drive meaningful change. By working together, these parties can create an enabling environment that encourages responsible corporate behavior, fosters innovation, creates value and promotes long-term sustainability.

As in academic research, the current study has several limitations, providing future research opportunities. One of the study's primary limitations is the sample size and its representativeness, where financial companies were excluded from the sample. Hence, future researchers could investigate this to provide a more comprehensive perspective on the importance of GD in driving GC to enhance firm financial success. Besides, future research could explore sector-specific differences in the relationship between GD, GC and firm financial success. Different industries may face unique challenges and opportunities related to GD and sustainability, necessitating tailored approaches and interventions. Also, the study targeted the UK context; a more comprehensive cross-country study could provide insight into this relationship. Moreover, comparative studies across different countries and regions could shed light on the cultural, institutional and contextual factors influencing the relationship between GD, GC and firm financial success. Thus, researchers can identify best practices and policy implications for promoting sustainability and gender equality globally. In conclusion, studying regulatory changes' impact on GD, GC and firm success offers valuable insights into policy effectiveness in promoting sustainability and inclusivity.

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