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**The Impact of Corporate Governance Quality on
Sustainability Performance: The Moderating
Role of Board Gender Diversity**

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MADRID | June 2026

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Abstract

This study examines the relationship between corporate governance quality and sustainability performance and investigates whether board gender diversity moderates this relationship. Drawing on institutional theory, agency theory, upper echelons theory and stakeholder theory, two hypotheses are developed and tested empirically. The study employs a cross-country dataset of 35 publicly listed companies from ten countries spanning common law and civil law developed markets and emerging economies over the period 2018 to 2023, yielding approximately 240 firm-year observations. Corporate governance quality is operationalised using Bloomberg's ESG Governance Score, sustainability performance using Bloomberg's ESG Disclosure Score, and board gender diversity as the percentage of female directors on the board. Multiple regression analysis and moderation regression analysis are conducted using IBM SPSS Statistics Version 29.0.2.0.

The results provide strong support for the first hypothesis, confirming that corporate governance quality is a positive and statistically significant predictor of sustainability performance ($\beta = .414$, $p < .001$). This finding holds consistently across the cross-country sample, suggesting that the governance-sustainability relationship is robust across diverse institutional environments. Board size is also found to be a significant positive predictor of sustainability disclosure ($\beta = .272$, $p < .001$), providing additional support for resource dependence theory. The second hypothesis, which proposed that board gender diversity moderates the governance-sustainability relationship, is not supported; the interaction term between governance quality and board gender diversity does not reach statistical significance ($p > .10$).

The findings contribute to the corporate governance and sustainability literatures by providing cross-country empirical evidence that governance quality is a robust driver of sustainability disclosure. The non-significant moderation result suggests that governance quality drives sustainability outcomes independently of board gender composition and that the influence of gender diversity may operate through direct rather than conditional mechanisms. The study acknowledges limitations relating to sample size, data availability and the absence of firm fixed effects and identifies directions for future research, including larger cross-country panel studies and explicit examination of the direct effect of board gender diversity on sustainability performance.

Keywords:

Corporate governance · ESG performance · Sustainability · Board gender diversity · Institutional theory · Moderation analysis · Cross-country research · Bloomberg ESG data

Abstract in Spanish

Este estudio examina la relación entre la calidad del gobierno corporativo y el desempeño en materia de sostenibilidad y analiza si la diversidad de género en los consejos de administración modera dicha relación. Basándose en la teoría institucional, la teoría de la agencia, la teoría de los altos cargos y la teoría de los grupos de interés, se formulan dos hipótesis que se comprueban empíricamente. El estudio utiliza un conjunto de datos transnacionales de 35 empresas que cotizan en bolsa de diez países, que abarcan mercados desarrollados de derecho anglosajón y de derecho civil, así como economías emergentes, durante el periodo comprendido entre 2018 y 2023, lo que arroja aproximadamente 240 observaciones de empresas-año. La calidad del gobierno corporativo se opera utilizando la puntuación de gobernanza ESG de Bloomberg, el desempeño en materia de sostenibilidad utilizando la puntuación de divulgación ESG de Bloomberg, y la diversidad de género en el consejo de administración como el porcentaje de

consejeras en el consejo. El análisis de regresión múltiple y el análisis de regresión de moderación se llevan a cabo utilizando IBM SPSS Statistics Versión 29.0.2.0.

Los resultados respaldan firmemente la primera hipótesis, confirmando que la calidad del gobierno corporativo es un predictor positivo y estadísticamente significativo del desempeño en materia de sostenibilidad ($\beta = 0,414$, $p < 0,001$). Este hallazgo se mantiene de forma consistente en toda la muestra transnacional, lo que sugiere que la relación entre gobierno corporativo y sostenibilidad es sólida en diversos entornos institucionales. También se ha constatado que el tamaño del consejo es un predictor positivo significativo de la divulgación de información sobre sostenibilidad ($\beta = 0,272$, $p < 0,001$), lo que aporta un respaldo adicional a la teoría de la dependencia de los recursos. La segunda hipótesis, que proponía que la diversidad de género en el consejo modera la relación entre gobernanza y sostenibilidad, no se ve respaldada; el término de interacción entre la calidad de la gobernanza y la diversidad de género en el consejo no alcanza significación estadística ($p > 0,10$).

Los resultados contribuyen a la literatura sobre gobierno corporativo y sostenibilidad al proporcionar evidencia empírica transnacional de que la calidad del gobierno corporativo es un motor sólido de la divulgación de información sobre sostenibilidad. El resultado de moderación no significativo sugiere que la calidad del gobierno corporativo impulsa los resultados de sostenibilidad independientemente de la composición de género del consejo de administración y que la influencia de la diversidad de género puede operar a través de mecanismos directos en lugar de condicionales. El estudio reconoce las limitaciones relacionadas con el tamaño de la muestra, la disponibilidad de datos y la ausencia de efectos fijos de empresa, e identifica líneas de investigación futuras, incluyendo estudios de panel transnacionales de mayor envergadura y un examen explícito del efecto directo de la diversidad de género en el consejo de administración sobre el desempeño en materia de sostenibilidad.

Palabras clave:

1. Introduction

Corporate governance has long been recognised as a cornerstone of responsible business practice, providing the structural framework through which firms are directed, monitored and held accountable to their stakeholders. In recent decades, however, the scope of corporate governance has expanded considerably beyond its traditional focus on shareholder value and financial performance. As environmental, social and governance (ESG) considerations have become increasingly embedded within regulatory frameworks, investor expectations and broader societal norms, governance structures are now widely understood to play a central role in shaping firms' sustainability outcomes. The question of how governance quality influences sustainability performance has therefore emerged as one of the most consequential areas of contemporary corporate governance research, attracting growing attention from academics, policymakers and institutional investors alike.

Despite this growing body of literature, significant gaps remain in our understanding of the conditions under which governance mechanisms are most effective in driving sustainability outcomes. In particular, prior research has paid limited attention to the role of board composition in moderating the governance-sustainability relationship. Board gender diversity, defined as the proportion of female directors on the board, represents a dimension of board composition that has attracted increasing academic and regulatory attention. Grounded in upper echelons theory, which argues that the demographic characteristics of top management teams shape strategic decision-making and organisational outcomes (Hambrick and Mason, 1984), and in gender socialisation theory, which suggests that female directors tend to place greater emphasis on long-term stakeholder orientation and ethical accountability (Zhu and Chen, 2025), there are strong theoretical reasons to expect that board gender diversity may condition the extent to which

governance quality translates into sustainability performance. Yet the moderating role of board gender diversity in this relationship, particularly across diverse national and institutional contexts, remains insufficiently examined.

This gap is particularly significant given the growing consensus that governance mechanisms do not operate uniformly across national contexts. Institutional theory argues that firms are embedded within broader legal, regulatory, normative and cultural environments that fundamentally shape how governance structures function (Aguilera and Jackson, 2003). The effectiveness of corporate governance in promoting sustainability has been shown to vary depending on the nature of national institutional pressures, including the stringency of regulatory frameworks and the strength of societal norms regarding environmental and social responsibility (Ortiz-de-Mandojana *et al.*, 2016). Similarly, the design and interpretation of sustainability performance indicators differ systematically across cultural and legal contexts (López-Arceiz *et al.*, 2020). These findings suggest that the governance-sustainability relationship is not universal but is shaped by the institutional environment in which firms operate, a proposition that the present study examines empirically through a cross-country research design spanning ten countries across common law and civil law developed markets, as well as emerging economies.

The present study addresses these gaps by pursuing two related empirical objectives. First, it investigates the direct relationship between corporate governance quality, proxied using Bloomberg's ESG Governance Score, and sustainability performance, proxied using Bloomberg's ESG Disclosure Score, across a cross-country sample of publicly listed companies over the period 2018 to 2023. Second, and more centrally, it examines whether board gender diversity moderates this relationship, such that the positive effect of governance quality on sustainability performance is stronger in firms with more gender-diverse boards. In doing so, the study draws on institutional theory, agency theory, upper echelons theory and stakeholder theory to develop a theoretically grounded framework for understanding how governance structures, board composition and national institutional context interact to shape sustainability outcomes.

To test these relationships empirically, the study employs moderation regression analysis, with board gender diversity introduced as a moderating variable through a multiplicative interaction term, following the approach established by Baron and Kenny (1986). Country is included as a control variable to account for national institutional differences, directly reflecting the institutional theory framework developed in the literature review. In addition, cluster analysis is conducted to examine whether firms naturally group according to country or institutional context, providing an empirical test of the institutional theory proposition that governance-sustainability relationships vary systematically across national environments. The dataset covers 35 publicly listed companies across ten countries, yielding approximately 240 firm-year observations, and is sourced exclusively from the Bloomberg Terminal to ensure consistency and comparability across firms and time periods.

This study makes several contributions to the existing literature. First, it contributes to the corporate governance and sustainability literature by providing cross-country empirical evidence on the governance-sustainability relationship, extending prior work beyond single-country settings to examine how this relationship varies across diverse institutional environments. Second, it contributes to the board diversity literature by treating board gender diversity as a moderating variable in the governance-sustainability relationship, a framing that more accurately reflects the contingent nature of diversity's effects than treating it as a direct determinant of outcomes. Third, the inclusion of cluster analysis offers an empirical examination of institutional theory's core proposition, providing novel evidence on whether national and legal origin differences systematically differentiate firms' governance and sustainability profiles. Finally, by combining moderation regression with cluster analysis, the study employs a methodologically richer approach than most prior work in this area, generating both confirmatory and exploratory insights into the governance-sustainability nexus.

The findings of this study carry practical implications for both corporate boards and policymakers. For boards and senior managers, the study highlights the strategic importance of gender diversity not merely as a governance characteristic but as a mechanism through which the

effectiveness of governance structures in driving sustainability outcomes may be enhanced or constrained. For policymakers, the cross-country design and cluster analysis provide evidence on whether the governance-sustainability relationship is sufficiently universal to support globally harmonised governance standards or whether national institutional differences necessitate more contextually tailored regulatory approaches.

The remainder of this thesis is structured as follows. Section 2 presents the literature review, developing the theoretical framework and reviewing the empirical evidence on institutional theory, corporate governance and sustainability performance, and board gender diversity, culminating in the development of two hypotheses. Section 3 outlines the methodology, detailing the research design, data sources, variable construction and analytical strategy, including the moderation regression and cluster analysis. Section 4 presents the empirical results. Section 5 discusses the results in relation to the hypotheses and existing literature. Section 6 concludes the thesis by summarising the key findings, discussing theoretical and practical implications, acknowledging limitations and suggesting directions for future research.

2. Literature Review

2.1 Institutional Theory and Corporate Governance

Corporate governance structures vary significantly across national contexts, reflecting differences in legal systems, regulatory frameworks and broader societal norms. Institutional theory provides a foundational explanation for this variation by arguing that firms are embedded within wider institutional environments composed of legal, regulatory, normative and cultural elements (Aguilera and Jackson, 2003). Rather than operating as isolated economic entities, organisations are shaped by the institutional pressures of the environments in which they operate, leading them to adopt governance structures that align with socially accepted norms and expectations. This perspective challenges the assumption that a single model of corporate governance can be universally applied, suggesting instead that governance mechanisms are

inherently context-dependent. As a result, practices that are effective in one institutional setting may not produce the same outcomes in another, highlighting the importance of considering national context when analysing governance-performance relationships.

Focusing on the regulatory dimension of the institutional context, a central distinction within comparative corporate governance literature is between common law and civil law systems. Common law countries, such as Ireland, the United Kingdom and the United States, typically prioritise shareholder protection, market-based governance and a high degree of board independence (Aguilera and Jackson, 2003). These systems rely heavily on external market mechanisms, such as capital markets and legal enforcement, to discipline managerial behaviour. In contrast, civil law systems, including those found in Spain, Germany and France, tend to emphasise stakeholder-oriented governance structures characterised by more relational forms of oversight, concentrated ownership and, in some cases, dual-board systems (Haxhi and Aguilera, 2017). These differences are not purely structural but also reflect deeper variations in how firms balance the interests of shareholders and other stakeholders. Consequently, governance practices are shaped not only by formal legal rules but also by informal norms and expectations, which can influence how effectively governance mechanisms operate in practice.

Legal origin theory further strengthens this argument by linking cross-national differences in corporate governance to a country's legal heritage. La Porta *et al.* (1998) argue that legal origin influences key governance determinants such as investor protection, enforcement quality and disclosure standards, which in turn shape firm behaviour and governance effectiveness. In environments with strong investor protection and enforcement mechanisms, governance structures may be more effective in constraining managerial opportunism. Conversely, weaker institutional frameworks may limit the effectiveness of formal governance mechanisms, leading firms to rely more heavily on relational or informal governance practices. Cumming *et al.* (2017) demonstrate that these institutional differences have direct implications for governance outcomes, particularly in areas such as monitoring effectiveness and the prevention of corporate misconduct. Accordingly, these perspectives provide, collectively, a strong theoretical foundation for the present study, justifying the inclusion of firms from diverse national contexts and

supporting the expectation that the relationship between governance quality and sustainability performance will vary across institutional environments.

These institutional differences are particularly relevant in the context of sustainability performance, where the effectiveness of corporate governance mechanisms in promoting firms' environmental and social practices has been shown to notably vary depending on national regulatory, normative and cognitive pressures (Ortiz-de-Mandojana *et al.*, 2016). In particular, governance structures that may encourage environmental sustainability in one institutional setting may have weaker, or in some cases, negligible effects in another institutional setting. Firms respond differently to country-specific incentives and constraints. Similarly, López-Arceiz *et al.* (2020) demonstrate that cultural and legal contextual characteristics influence both the delineation and outcomes of sustainability indicators, reinforcing the argument that governance-sustainability relationships cannot be understood independently of their institutional environment.

2.2 Corporate Governance and Sustainability Performance

Corporate governance research has traditionally focused on addressing agency problems arising from the separation of ownership and control, with particular emphasis on aligning managerial behaviour with shareholder interests (Aguilera and Jackson, 2003). Governance mechanisms such as independent boards, audit committees and executive compensation structures have historically been designed to reduce opportunistic behaviour and improve financial performance. However, more recent literature has expanded this perspective, recognising that corporate governance also plays a critical role in promoting transparency, accountability and responsible business conduct beyond purely financial considerations. As stakeholder expectations and regulatory pressures have intensified, firms are increasingly expected to incorporate environmental and social considerations into their strategic decision-making processes (Almagtome *et al.*, 2020). This shift reflects a broader redefinition of corporate objectives, where long-term value creation is increasingly linked to sustainability performance.

Empirical evidence provides substantial support for a positive relationship between governance quality and sustainability outcomes. Khemakhem *et al.* (2023) find that board-level governance characteristics, including committee structures and oversight mechanisms, are positively associated with ESG disclosure quality. This suggests that stronger governance frameworks enhance transparency and encourage firms to provide more comprehensive and credible sustainability-related information. Similarly, Alodat and Hao (2025) demonstrate that governance-related factors exert a significant influence on ESG performance, particularly when board characteristics are incorporated into the analysis. Their findings indicate that governance mechanisms do not operate in isolation but interact with board-level attributes to shape sustainability outcomes. Together, these studies suggest that effective governance can act as a catalyst for improved ESG performance by strengthening oversight and encouraging greater accountability, with the critical role played by boards.

The relationship between governance quality and sustainability performance can be understood through multiple theoretical perspectives. From an agency theory standpoint, stronger governance mechanisms reduce managerial discretion and limit short-term opportunistic behaviour, encouraging managers to adopt a longer-term orientation that includes sustainability objectives. This is particularly relevant as ESG performance increasingly becomes linked to firm valuation and investor decision-making. However, agency theory alone does not fully explain the growing importance of sustainability within corporate governance.

Institutional theory provides a complementary explanation, suggesting that firms adopt governance practices that align with broader societal expectations regarding responsible business conduct (Haxhi and Aguilera, 2017). As ESG considerations become more deeply embedded within institutional environments, governance structures play a central role in ensuring compliance with these evolving expectations. Nevertheless, it is important to acknowledge that ESG performance may not always reflect substantive changes in corporate behaviour. Some firms may engage in symbolic disclosure or “greenwashing” to meet stakeholder expectations without implementing meaningful sustainability initiatives, raising concerns about the extent to which governance mechanisms drive genuine improvements in ESG performance.

Building on this theoretical and empirical literature, governance quality is treated as the primary independent variable in the present study and is operationalised using Bloomberg's ESG Governance Score. This measure captures key aspects of governance, including board structure, oversight and transparency, making it a suitable proxy for governance effectiveness. The existing evidence supports the expectation that stronger governance mechanisms are associated with improved sustainability outcomes. Accordingly, the following hypothesis is proposed:

H1: Corporate governance quality is positively associated with sustainability performance.

2.3 Board Diversity and Corporate Governance Effectiveness

Board composition is widely recognised as a critical determinant of corporate governance effectiveness, as it directly influences the board's ability to monitor management and contribute to strategic decision-making (John and Senbet, 1998). Resource dependence theory provides a useful framework for understanding this relationship, arguing that boards serve not only as monitoring bodies but also as providers of valuable resources, expertise and external linkages (Madhani, 2017). From this perspective, diversity within the board enhances its capacity to access a wider range of knowledge, perspectives and networks, enabling firms to better navigate complex and uncertain environments. In the context of sustainability, diverse boards may be particularly valuable, as they are more likely to incorporate varied stakeholder perspectives and respond effectively to increasingly complex regulatory and societal expectations.

Empirical research generally supports the view that board diversity can enhance governance outcomes, although the evidence is not uniformly consistent. Khemakhem *et al.* (2023) find that board diversity is positively associated with ESG disclosure quality, suggesting that diverse boards contribute to greater transparency and accountability. Similarly, Alodat and Hao (2025) demonstrate that board characteristics, including diversity, play a moderating role in the relationship between governance mechanisms and firm performance. However, Greene *et al.*

(2025) highlight that the impact of board diversity is context-dependent, particularly in the case of regulatory diversity mandates. Their study reconciles mixed empirical findings, showing that while diversity can improve governance outcomes in some settings, its effects are less pronounced or even negligible in others. This suggests that the benefits of diversity are not automatic but depend on how diversity is integrated into board processes and decision-making structures.

Despite its potential advantages, board diversity also presents challenges. Diverse boards may experience communication barriers, coordination difficulties and potential conflicts arising from differing cognitive frameworks and cultural backgrounds. These challenges can hinder decision-making efficiency and reduce the effectiveness of governance mechanisms if not properly managed. Institutional theory suggests that the effectiveness of board diversity is likely to vary across national contexts, depending on prevailing governance norms, cultural expectations and regulatory frameworks (Haxhi and Aguilera, 2017). In some institutional environments, diversity may enhance board effectiveness by introducing new perspectives, while in others it may create friction that limits its benefits. This highlights the importance of examining board diversity within its broader institutional context, rather than assuming a universally positive effect.

2.4 Board Gender Diversity as a Moderating Variable

Among the various dimensions of board diversity, gender diversity has emerged as a particularly significant and well-studied factor in shaping governance outcomes and sustainability performance. Upper echelons theory, which argues that the demographic characteristics of top management teams shape strategic decision-making and organisational outcomes (Hambrick and Mason, 1984), provides a strong theoretical foundation for understanding why gender diversity on boards matters. Female directors bring different cognitive frameworks, risk orientations and value priorities to the boardroom, and gender socialisation theory further suggests that women in leadership positions tend to place greater emphasis on long-term orientation, stakeholder

engagement and public value creation, attributes that are directly aligned with sustainability objectives (Zhu and Chen, 2025). From a resource dependence perspective, gender-diverse boards also expand a firm's access to broader networks and knowledge bases, strengthening governance oversight and strategic capacity (Madhani, 2017).

Empirical evidence consistently supports the view that board gender diversity positively influences ESG and sustainability outcomes. Zhu and Chen (2025), using data from Chinese listed companies over the period 2010 to 2022, find a statistically significant positive relationship between board gender diversity and ESG performance, demonstrating that gender-diverse boards contribute to improved environmental responsibility, greater social accountability and stronger governance transparency. Their findings indicate that female directors tend to uphold higher ethical standards, reduce the risk of excessive managerial behaviour and bring more balanced perspectives to sustainability-related decisions. Cumming *et al.* (2017) further demonstrate that gender-diverse boards are associated with a significantly lower incidence of governance failures and securities fraud, providing direct evidence that female board representation strengthens monitoring effectiveness. Similarly, Khemakhem *et al.* (2023) find that gender diversity on board committees is positively associated with ESG disclosure quality, reinforcing the argument that female representation independently contributes to more transparent and accountable governance.

However, the relationship between board gender diversity and ESG performance is not uniformly positive across all contexts. Zhu and Chen (2025) find that the positive effect of gender diversity on ESG performance is weaker in innovation-driven environments and among firms with frequent governance violations, suggesting that the benefits of female board representation are contingent on the broader governance and operational context in which firms operate. This aligns with critical mass theory, which argues that the influence of female directors on board decision-making only becomes meaningful when women constitute a sufficient proportion of board membership, typically identified as at least three female directors, beyond which they can move beyond tokenism and meaningfully shape board dynamics and strategic priorities (Marie *et*

al., 2025). Where female representation falls below this threshold, the governance benefits of gender diversity may be limited or largely symbolic.

Beyond its direct effects on ESG outcomes, board gender diversity may also condition the extent to which governance quality translates into sustainability performance. Tawfik *et al.* (2026) provide evidence from GCC countries that board gender diversity moderates the relationship between ESG performance and corporate outcomes, finding that gender-diverse boards strengthen this relationship by fostering greater ethical accountability and stakeholder orientation. Stakeholder theory provides a complementary explanation: gender-diverse boards are more attuned to the interests of a broader range of stakeholders and more inclined to implement governance policies that reflect fairness, transparency and long-term sustainability objectives (Freeman, 1984; Tawfik *et al.*, 2026). In this way, board gender diversity may amplify the effectiveness of strong governance structures in promoting sustainability outcomes, particularly in institutional environments where stakeholder expectations and ESG standards are well developed.

The moderating effect of board gender diversity is, however, likely to vary across national institutional contexts. In more globalised, market-oriented environments with well-established ESG frameworks, gender-diverse boards may be better positioned to leverage governance quality and translate it into superior sustainability performance. In more locally embedded governance systems, or in emerging markets where institutional frameworks are less developed, this moderating effect may be more limited (Zhu and Chen, 2025; Haxhi and Aguilera, 2017). This institutional contingency is consistent with the cross-country design of the present study and reinforces the importance of examining board gender diversity not in isolation but within the broader institutional environments in which firms operate. Building on these theoretical and empirical arguments, board gender diversity is treated as a moderating variable in the present study, operationalised as the percentage of female directors on the board. The following hypothesis is proposed:

H2: Board gender diversity moderates the relationship between corporate governance quality and sustainability performance, such that the positive effect of governance quality on sustainability performance is stronger when board gender diversity is higher.

2.5 Control Variables

To isolate the effects of governance quality and board cultural diversity on sustainability performance, the present study includes a range of control variables at both the board and firm levels. Board gender diversity is included as a control variable due to its established influence on governance outcomes. Cumming *et al.* (2017) find that gender-diverse boards are associated with a lower incidence of governance failures and securities fraud, indicating improved monitoring effectiveness. Khemakhem *et al.* (2023) further demonstrate that gender diversity on board committees is positively associated with ESG disclosure quality, suggesting that it independently contributes to sustainability-related governance outcomes. Board size is also controlled for, as larger boards may provide greater expertise and monitoring capacity but may also face coordination challenges that reduce decision-making efficiency (John and Senbet, 1998).

At the firm level, size and profitability are included as key control variables. Larger firms are subject to greater regulatory scrutiny and stakeholder pressure, which may independently drive higher levels of ESG disclosure and sustainability performance (Almagtome *et al.*, 2020). Profitability, measured by return on assets, is also controlled for, as financially stronger firms have greater resources to invest in sustainability initiatives and are therefore more likely to achieve higher ESG performance. By including these control variables, the study ensures that the estimated relationships between governance quality, board cultural diversity and sustainability performance reflect the variables of interest rather than other well-established determinants of ESG outcomes.

3. Methodology

The theoretical and empirical arguments developed in the preceding literature review provide the foundation for the empirical framework employed in this section. The positive relationship between corporate governance quality and sustainability performance, supported by both agency theory and institutional theory, motivates the selection of Bloomberg's ESG Governance Score as the primary independent variable and the overall ESG Disclosure Score as the dependent variable. The moderating role attributed to board gender diversity, grounded in upper echelons theory, gender socialisation theory and stakeholder theory, justifies its inclusion as a moderating variable in the analytical model. Firm-level control variables are likewise grounded in prior empirical research, as detailed in Section 2.5. This section outlines the research design, data collection procedures, variable construction and estimation strategy employed to test the two hypotheses proposed above.

3.1 Research Design

This study adopts a quantitative, deductive research design, employing multiple regression analysis to examine the relationship between corporate governance quality and sustainability performance and to test the moderating role of board gender diversity in this relationship. A quantitative approach is appropriate given that the research questions are empirical in nature and require the systematic analysis of standardised data across firms and countries (Saunders *et al.*, 2019). The use of secondary data obtained from the Bloomberg Terminal ensures comparability across firms and time periods, reducing the potential for measurement error arising from self-reported or inconsistently defined variables.

The study employs two regression models. A baseline multiple regression model first examines the direct relationship between governance quality, board gender diversity, firm-level controls and sustainability performance, providing an initial assessment of the explanatory power of the independent and control variables. A moderation regression model then introduces a multiplicative interaction term between governance quality and board gender diversity to test whether gender diversity conditions the governance-sustainability relationship. Statistical

analysis is conducted using IBM SPSS Statistics Version 29.0.2.0. Given the cross-sectional and exploratory nature of the analysis, which pools firm-year observations across countries without exploiting within-firm variation over time, the results should be interpreted as providing directional evidence on the proposed relationships rather than definitive causal findings.

3.2 Data Collection and Sample Description

The study utilises a dataset of publicly listed companies drawn from ten countries over the period 2018 - 2023. The countries were selected to ensure meaningful variation across three key dimensions of national corporate governance systems: legal origin (common law versus civil law), market development (developed versus emerging markets) and regulatory stringency with regard to anti-corruption frameworks and ESG disclosure requirements (Aguilera and Jackson, 2003; Haxhi and Aguilera, 2017; La Porta *et al.*, 1998; Cumming *et al.*, 2017). The inclusion of firms from diverse institutional environments is consistent with the theoretical framework outlined in Section 2.1, which emphasises that governance-performance relationships are likely to vary across national contexts and that country of origin may play an important conditioning role in shaping these relationships.

The final country sample is structured as follows:

Common Law Developed Markets: Ireland, United Kingdom, USA, Canada

Civil Law Developed Markets: Spain, Germany, France

Emerging Markets: Brazil, South Africa, China

Common law markets are characterised by stronger investor protection and higher disclosure standards, while civil law markets tend towards relational governance and more concentrated ownership (La Porta *et al.*, 1998). The emerging markets, Brazil, South Africa and China, represent lower average regulatory stringency, providing the institutional variation necessary to

examine whether governance-sustainability relationships differ under less-developed regulatory conditions (Cumming *et al.*, 2017).

The dataset was obtained from the Bloomberg Terminal and covers four publicly listed companies from the primary equity index of each country. Financial firms (SIC codes 6000–6999) are excluded due to their distinct regulatory environments and financial reporting characteristics, following standard practice in corporate governance research (Ghazwani *et al.*, 2025). After removing observations with missing values, the final analytical dataset comprises approximately 233–241 firm-year observations across the ten countries and six-year period.

3.3 Data Sources

All firm-level financial, governance and sustainability data are obtained from the Bloomberg Terminal. Bloomberg provides standardised and comparable ESG metrics, including the ESG Disclosure Score and the ESG Governance Score, alongside detailed board composition data and financial statement variables. It is important to note that these two scores are constructed using fundamentally different methodologies: the ESG Disclosure Score measures the breadth and comprehensiveness of a firm’s sustainability-related reporting based on disclosed data, while the ESG Governance Score evaluates specific governance characteristics such as board structure, oversight mechanisms and transparency based on assessed governance quality. The two scores, therefore, capture conceptually and methodologically distinct dimensions, justifying their use as dependent and independent variables, respectively, in the present study. Bloomberg ESG data are widely employed in empirical corporate governance and sustainability research, supporting their suitability for the present analysis (Alodat and Hao, 2025; Khemakhem *et al.*, 2023; Ghazwani *et al.*, 2025).

3.4 Variable Measurement and Construction

A full summary of all variables, their descriptions, measurements and data sources is provided in Table 3.1 below. The dependent variable, sustainability performance (S_P), is measured using Bloomberg’s overall ESG Disclosure Score, which captures the breadth and quality of a firm’s

sustainability-related disclosure across environmental, social and governance dimensions, scaled from 0 to 100. While both variables are sourced from Bloomberg, they are constructed using different methodologies. The ESG Disclosure Score measures the breadth and quality of a company's sustainability reporting, while the ESG Governance Score evaluates specific governance characteristics, including board structure, oversight and transparency. The two variables therefore capture conceptually and methodologically distinct dimensions of corporate sustainability, justifying their use as dependent and independent variables, respectively, in the present study. While this means the two variables are correlated, they measure conceptually distinct constructs, governance quality versus overall sustainability disclosure, and the regression analysis allows the independent contribution of governance quality to be assessed after accounting for other variables in the model.

The primary independent variable, governance quality (ESG_GOV), is operationalised using Bloomberg's ESG Governance Score, which measures the quality of corporate governance practices, including board structure, oversight mechanisms and transparency. Board gender diversity (BGD), the moderating variable, is measured as the percentage of female directors on the board (BOARD_WOMEN_PCT), consistent with prior research on gender diversity and governance outcomes (Zhu and Chen, 2025; Cumming *et al.*, 2017). Control variables include board size (BS), measured as the total number of directors; firm size (Firm_S), measured as the natural logarithm of total assets; profitability (ROA), measured as return on assets; and country (Country_id), coded as a numerical identifier assigning a unique value to each of the ten countries in the sample. Country is included as a control variable to account for national institutional differences, directly reflecting the institutional theory framework developed in the literature review (Aguilera and Jackson, 2003; Haxhi and Aguilera, 2017).

Table 3.1: Variables Definitions, Measurements and Data Sources

Variable	Description	Measurement	Data Source
S_P (Dependent)	Sustainability Performance	Overall ESG Disclosure Score, scaled 0-100. Higher scores reflect greater breadth and quality of sustainability-related disclosure	Bloomberg Terminal: ESG_DISCLOSURE_SCORE

ESG_GOV (Independent)	ESG Governance Score	Measurement of the quality of corporate governance practices, including board structure, transparency and oversight mechanisms	Bloomberg Terminal: ESG_GOVERNANCE_SCORE
BGD (Moderator)	Board Gender Diversity	The percentage of female directors on the board, capturing the degree of gender diversity in board composition	Bloomberg Terminal: BOARD_INTL_DIR_PCT
BS (Control)	Board Size	The total number of directors serving on the board	Bloomberg Terminal: NUMBER_OF_BOARD_MEMBERS
ROA (Control)	Profitability	Return on Assets, calculated as Net Income divided by Total Assets	Bloomberg Terminal: RETURN_ON ASSETS
Firm_S (Control)	Firm Size	Natural logarithm of the firm's total assets, used to reduce skewness in the size distribution	Bloomberg Terminal: TOTAL_ASSETS
Country_id (Control)	Country	Numerical identifier assigned to each country: Ireland = 1, UK = 2, USA = 3, Canada = 4, Spain = 5, Germany = 6, France = 7, Brazil=8, South Africa = 9, China = 10.	Author's own elaboration

3.5 Model Specification and Estimation Strategy

This study employs two regression models estimated using IBM SPSS Statistics Version 29.0.2.0. Prior to estimation, Pearson correlation analysis and variance inflation factor (VIF) diagnostics are conducted to assess multicollinearity among the key variables. All VIF values are required to be below 5 to confirm the absence of problematic multicollinearity (Hair *et al.*, 2019).

Preliminary Regression Model:

A preliminary multiple regression model is first estimated to examine whether governance quality, board gender diversity and a set of firm-level and country-level control variables collectively predict sustainability performance. This model serves primarily to assess whether the control variables independently explain variance in ESG Disclosure Scores and to provide initial

evidence on the direct relationships between the variables before the moderation analysis is conducted:

$$S_P = \alpha + \beta1ESG_GOV + \beta2BGD + \beta3BS + \beta4ROA + \beta5Firm_S + \beta6Country_id + \varepsilon$$

A positive and statistically significant $\beta1$ would provide initial support for H1. The control variables are included to assess whether firm-level and country-level characteristics independently explain variation in sustainability performance.

Moderation Model (Primary Analysis - H2):

The primary analytical model is the moderation regression, which tests whether board gender diversity conditions the relationship between governance quality and sustainability performance. The independent variable (ESG_GOV) and moderator (BGD) are first mean-centred to reduce multicollinearity in the interaction term, following standard practice in moderation analysis (Baron and Kenny, 1986). A multiplicative interaction term is then created and entered into the model. The moderation model does not include the firm-level and country-level control variables, focusing specifically on the core moderation relationship:

$$S_P = \alpha + \beta1ESG_GOV + \beta2BGD + \beta3(ESG_GOV \times BGD) + \varepsilon$$

A positive and statistically significant $\beta3$ would provide empirical support for H2, indicating that the positive effect of governance quality on sustainability performance is amplified when board gender diversity is higher. As noted above, a degree of correlation between the independent variable (ESG_GOV) and the dependent variable (S_P) is expected in moderation analysis and does not undermine the validity of the model.

The results of both models are interpreted as exploratory and directional, consistent with the cross-sectional nature of the analysis and the constraints of the available dataset. Limitations associated with the sample size and analytical approach are acknowledged in Section 6.

4. Results

This section presents the empirical findings from the analytical strategy outlined in Section 3.5. The results are reported in order: descriptive statistics of all variables; collinearity analysis, including correlation matrix and variance inflation factor (VIF) diagnostics; the preliminary baseline regression; and the moderation regression, which constitutes the primary analysis. All analyses were conducted using IBM SPSS Statistics Version 29.0.2.0.

4.1 Descriptive Statistics

Table 4.1 presents the descriptive statistics for all variables used in the analysis. The mean ESG Disclosure Score across the sample is 60.69 (SD = 11.04), indicating that firms in the sample achieve moderate to high levels of sustainability disclosure on average, with scores ranging from 25.83 to 82.23. The mean ESG Governance Score is 6.63 (SD = 1.19) on a scale of 0 to 10, suggesting that governance quality is generally high across the sample, though meaningful variation exists. Board gender diversity averages 31.43% female directors (SD = 12.66), ranging from 0% to 57.14%, reflecting considerable variation in gender representation across firms and countries. The average board size is approximately 13 directors (SD = 3.27), while the mean return on assets is 7.11% (SD = 7.05), indicating that most firms in the sample are profitable. Total assets vary considerably, with a mean of approximately 409,744 million and a standard deviation of 1,418,342 million, reflecting the heterogeneity of firm size across the cross-country sample.

Table 4.1: Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Dev.
ESG Disclosure Score	240	25.83	82.23	60.69	11.04
ESG Governance Score	240	2.80	8.67	6.63	1.19
Board Women % (BGD)	241	.00	57.14	31.43	12.66
Board Size	240	6	21	12.84	3.27
Return on Assets	240	-28.72	39.59	7.11	7.05
Total Assets	233	2,255	11,028,483	409,743.82	1,418,341.93

4.2 Collinearity Analysis

Table 4.2 presents the Pearson correlation matrix for all variables. The ESG Disclosure Score correlates significantly with the ESG Governance Score ($r = .399$, $p < .01$), Board Gender Diversity ($r = .371$, $p < .01$) and Board Size ($r = .356$, $p < .01$) and negatively with Country_id ($r = -.187$, $p < .01$). Return on Assets ($r = -.096$, $p > .05$) and Total Assets ($r = -.049$, $p > .05$) do not correlate significantly with the dependent variable. Similarly, Return on Assets and Total Assets show limited significant correlations with the independent variable and moderator. On this basis, Return on Assets and Total Assets are excluded from the regression models as control variables, retaining only Board Size and Country_id, which correlate significantly with the key variables and are well supported by the theoretical framework (John and Senbet, 1998; Aguilera and Jackson, 2003).

The three key variables, ESG Governance Score, Board Gender Diversity and ESG Disclosure Score, show moderate positive correlations with each other ($r = .399$ to $.571$), consistent with a Pearson coefficient between 0.3 and 0.7, which falls within the range considered acceptable for moderation analysis (Hair *et al.*, 2019). A notably strong negative correlation is observed between Country_id and ESG Governance Score ($r = -.701$, $p < .01$), which is accounted for

through mean-centring in the moderation model. VIF values for all variables included in both regression models are below 3, confirming the absence of problematic multicollinearity.

Table 4.2: Pearson Correlation Matrix

Variable	1	2	3	4	5	6	7
1. ESG Disclosure Score	1						
2. Board Size	.356**	1					
3. Return on Assets	-.096	-.130*	1				
4. Total Assets	-.049	.111	-.123	1			
5. Country_id	-.187**	.008	-.042	.328**	1		
6. ESG Governance Score	.399**	.122	.020	-.178**	-.701**	1	
7. Board Women % (BGD)	.371**	.336**	-.088	-.376**	-.438**	.571**	1

4.3 Preliminary Regression Results

Table 4.3 presents the model summary and ANOVA for the preliminary regression. The model explains 27.1% of the variance in ESG Disclosure Score ($R^2 = .271$, Adjusted $R^2 = .259$), which is considered acceptable for an exploratory cross-country study of this nature (Hair et al., 2019). The overall model is statistically significant ($F(4, 235) = 21.846$, $p < .001$).

Table 4.3: Preliminary Regression: Model Summary and ANOVA

	R	R ²	Adj. R ²	F (df1=4, df2=235)	Sig.
Model	.521	.271	.259	21.846	< .001

Table 4.4 presents the regression coefficients. The ESG Governance Score is the strongest predictor of sustainability performance ($\beta = .399$, $B = 3.714$, $p < .001$), providing initial support for H1. Board Size is also a significant positive predictor ($\beta = .268$, $B = .904$, $p < .001$),

consistent with resource dependence theory's proposition that larger boards provide greater governance capacity (Madhani, 2017). Country_id is marginally significant at the 10% level ($\beta = .141$, $B = .542$, $p = .076$), providing tentative support for the institutional theory argument that national context influences sustainability disclosure. Board Gender Diversity does not reach statistical significance ($\beta = .115$, $B = .100$, $p = .112$) in the preliminary regression, suggesting it does not independently explain additional variance in ESG Disclosure Scores beyond the other predictors.

Table 4.4: Preliminary Regression: Coefficients

Variable	B	Std. Error	Beta (β)	t	Sig.
(Constant)	19.056	6.494	-	2.934	.004
ESG Governance Score	3.714	.823	.399	4.514	< .001
Board Women % (BGD)	.100	.063	.115	1.593	.112
Board Size	.904	.212	.268	4.264	< .001
Country_id	.542	.305	.141	1.776	.077

4.4 Moderation Regression Results

Table 4.5 presents the results of the moderation regression model, which constitutes the primary analysis of this study. All variables are mean-centred prior to analysis and expressed as Z-scores. The model includes ESG Governance Score, Board Gender Diversity, their multiplicative interaction term, Board Size and Country_id as predictors. The model explains 27.1% of the variance in ESG Disclosure Score ($R^2 = .271$, Adjusted $R^2 = .256$) and is statistically significant overall ($p < .001$).

Table 4.5: Moderation Regression: Model Summary

	R	R ²	Adj. R ²	Std. Error	Sig.
Model	.521	.271	.256	.863	< .001

Table 4.6 presents the moderation regression coefficients. ESG Governance Score remains a strong and significant predictor of sustainability performance ($\beta = .401$, $p < .001$), reinforcing the support for H1 established in the preliminary regression. Board Size is also significant ($\beta = .270$, $p < .001$) and Country_id remains marginally significant at the 10% level ($\beta = .141$, $p = .077$), consistent with institutional theory's prediction that national context influences sustainability disclosure. Board Gender Diversity does not reach statistical significance ($\beta = .117$, $p = .119$). Most importantly, the interaction term between ESG Governance Score and Board Gender Diversity is not statistically significant ($\beta = .006$, $p = .939$), indicating that board gender diversity does not moderate the relationship between governance quality and sustainability performance. H2 is therefore not supported.

Table 4.6: Moderation Regression: Coefficients (Z-scores)

Variable	B	Std. Error	Beta (β)	t	Sig.
(Constant)	-0.003	0.065	-	-0.045	.964
ESG Governance Score (Z)	0.401	0.088	.401	4.545	< .001
Board Women % - BGD (Z)	0.116	0.074	.117	1.566	.119
ESG_GOV \times BGD (Interaction)	0.005	0.060	.006	0.076	.939
Country_id (Z)	0.141	0.079	.141	1.777	.077
Board Size (Z)	0.270	0.065	.270	4.160	< .001

4.5 Summary of Findings

Table 4.7 summarises the results of the hypothesis tests.

Table 4.7: Summary of Hypothesis Test Results

H	Hypothesis	Result
H1	Corporate governance quality is positively associated with sustainability performance.	Supported: evidenced in preliminary regression and moderation model ($p < .001$)

H2	Board gender diversity moderates the relationship between corporate governance quality and sustainability performance, such that the positive effect of governance quality on sustainability performance is stronger when board gender diversity is higher.	Not Supported (interaction term $p = .939$)
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5. Discussion

This section interprets the empirical findings presented in Section 4 in relation to the theoretical framework and hypotheses developed in the literature review. The discussion addresses each hypothesis in turn, situates the findings within the broader academic literature, and considers the theoretical and practical implications of the results.

5.1 Governance Quality and Sustainability Performance (H1)

The preliminary regression was conducted primarily to assess whether the control variables independently explain variance in sustainability performance and to provide initial evidence on the direct relationships between variables prior to the moderation analysis. The model explains 28.6% of the variance in sustainability performance ($R^2 = 0.286$, ($R^2 = .271$, Adjusted $R^2 = .259$) and is statistically significant overall ($F(4, 235) = 21.846$, $p < .001$). Across both models, ESG Governance Score is the strongest predictor of sustainability performance (preliminary regression: $\beta = .399$, $p < .001$; moderation model: $\beta = .401$, $p < .001$), providing clear support for H1. Board Size is also significant ($\beta = .268$, $p < .001$). Board Gender Diversity, Return on Assets and Firm Size do not reach conventional levels of statistical significance. Country_id is marginally significant at the 90% confidence level ($\beta = .141$, $p = .077$), providing tentative support for the institutional theory argument that national context influences sustainability disclosure (Aguilera and Jackson, 2003).

This finding is consistent with prior empirical evidence. Khemakhem *et al.* (2023) demonstrate that board-level governance characteristics are positively associated with ESG disclosure quality, while Alodat and Hao (2025) show that governance-related factors significantly influence ESG performance when board characteristics are taken into account. The present study extends these

findings to a cross-country context, providing evidence that the governance-sustainability relationship holds across diverse institutional environments spanning common law and civil law developed markets as well as emerging economies. This cross-country consistency is itself theoretically meaningful, suggesting that the governance-sustainability nexus is sufficiently robust to transcend specific national institutional contexts, even if its magnitude may vary.

From an institutional theory perspective, the finding that governance quality drives sustainability disclosure across ten institutionally diverse countries lends support to the argument that governance mechanisms, while shaped by their national environments, nonetheless retain a consistent positive relationship with sustainability outcomes regardless of whether firms operate under common law or civil law systems or in developed or emerging market contexts. This is broadly consistent with Ortiz-de-Mandojana *et al.* (2016), who find that while the effectiveness of specific governance mechanisms varies across institutional environments, the general relationship between governance and sustainability is present across contexts. The non-significance of the Country_id control variable in the baseline regression, however, suggests that in the present sample, country of origin does not independently explain additional variance in ESG Disclosure Scores beyond what is already captured by the governance and board-level variables. This may reflect the relatively small number of firms per country in the sample, limiting the ability to detect country-level effects.

A particularly noteworthy additional finding from the baseline regression is the significant positive effect of board size on sustainability performance ($\beta = .272$, $p < .001$). While board size was included as a control variable rather than a variable of theoretical interest, this result is consistent with the resource dependence theory argument that larger boards provide access to a broader range of expertise, networks and oversight capacity, which may independently support more comprehensive sustainability disclosure (Madhani, 2017; John and Senbet, 1998). This finding warrants consideration in future research that explicitly examines the structural determinants of ESG disclosure.

5.2 The Non-Significant Moderating Role of Board Gender Diversity (H2)

The moderation analysis does not provide support for H2. The interaction term between ESG Governance Score and Board Gender Diversity is not statistically significant ($p > .10$), indicating that the positive effect of governance quality on sustainability performance does not vary meaningfully with the percentage of female directors on the board in the present sample. Board gender diversity therefore does not appear to moderate the governance-sustainability relationship under the analytical conditions of this study.

This finding is perhaps surprising given the strong theoretical rationale developed in Section 2.4 and the growing body of empirical literature suggesting that board gender diversity positively influences ESG outcomes. Zhu and Chen (2025) find a significant positive direct effect of gender diversity on ESG performance in Chinese listed companies, while Cumming *et al.* (2017) demonstrate that gender-diverse boards are associated with lower incidences of governance failures. However, it is important to distinguish between the direct effect of gender diversity on ESG outcomes, which these studies examine, and the moderating effect of gender diversity on the governance-sustainability relationship, which is what the present study tests. The absence of a significant interaction effect does not imply that gender diversity has no influence on sustainability outcomes; rather, it suggests that gender diversity does not condition the strength of the governance-sustainability relationship in this particular sample.

Several explanations may account for the non-significant moderation result. First, the relatively small sample size of 35 companies, while yielding approximately 240 firm-year observations, may limit the statistical power available to detect a moderating effect, particularly given that moderation effects are generally smaller in magnitude than direct effects and therefore require larger samples to detect reliably. As Paloma noted, greater time and data availability may have produced results more aligned with the theoretical predictions. Second, the significant positive correlation between ESG Governance Score and Board Gender Diversity (.571, $p < .001$) observed in the correlation analysis may suggest that the two variables share substantial common

variance, making it difficult to isolate the unique moderating contribution of gender diversity beyond its association with governance quality itself. Third, consistent with critical mass theory (Marie *et al.*, 2025), the moderating influence of female directors may only emerge when women constitute a sufficient proportion of board membership, a threshold that may not be consistently reached across the firms in the present sample.

From an institutional theory perspective, it is also possible that the moderating role of board gender diversity is more context-dependent than the direct effect of governance quality. Zhu and Chen (2025) find that the positive effect of gender diversity on ESG performance is weaker in innovation-driven environments and among firms with governance challenges, suggesting that contextual factors condition the effectiveness of female board representation. In a cross-country sample spanning as diverse an institutional range as the present study, from Ireland and the United Kingdom to Brazil, South Africa and China, the moderating role of gender diversity may be obscured by the considerable institutional heterogeneity across observations. Future research with larger, more institutionally homogeneous samples, or with country-specific sub-analyses, may be better positioned to detect the moderating effects predicted by theory.

It is worth noting that the non-significant result for H2 is itself a theoretically informative finding. It suggests that governance quality drives sustainability disclosure as a largely autonomous mechanism, one that operates independently of board gender composition. This is consistent with a view of governance quality as a structural property of the firm that, once sufficiently embedded, generates sustainability disclosure outcomes regardless of the demographic characteristics of the board. In this sense, the finding may reflect the primacy of governance structures over board composition in determining sustainability disclosure, at least at the level of analysis employed in the present study.

5.3 Theoretical Implications

The findings of this study carry several theoretical implications. First, the strong and consistent support for H1 across a cross-country sample contributes to the institutional theory and corporate governance literatures by providing evidence that the governance-sustainability relationship is robust across diverse national contexts. This extends prior single-country studies (Zhu and Chen, 2025; Khemakhem *et al.*, 2023) and suggests that agency theory's prediction that governance mechanisms reduce opportunistic behaviour and promote long-term value creation, including sustainability, holds broadly across common law and civil law systems and across developed and emerging markets.

Second, the non-significant moderation result for H2 contributes to the board diversity literature by highlighting the distinction between the direct and moderating effects of gender diversity. While the literature has increasingly documented that gender-diverse boards are associated with better ESG outcomes in their own right, the present study suggests that the mechanism through which gender diversity operates may be additive rather than conditional. That is, gender diversity may improve sustainability outcomes directly, as documented by Zhu and Chen (2025) and Tawfik *et al.* (2026), rather than by amplifying the effect of governance quality. This distinction has important implications for how researchers conceptualise and test the role of board gender diversity in governance research.

Third, the significant positive effect of board size on sustainability disclosure, observed as an additional finding in the baseline regression, provides further support for resource dependence theory's proposition that larger boards enhance governance capacity and access to resources (Madhani, 2017) and suggests that structural board characteristics beyond gender composition may be important determinants of sustainability disclosure that warrant further empirical investigation.

5.4 Practical Implications

The findings carry practical implications for corporate boards, investors and policymakers. For corporate boards and senior managers, the strong positive relationship between governance quality and sustainability disclosure underscores the strategic importance of investing in governance structures, including board independence, oversight mechanisms and transparency practices, as a means of improving a firm's sustainability profile. The finding that governance quality is the dominant predictor of ESG disclosure, significantly outperforming all other variables in the model, suggests that firms seeking to improve their ESG scores should prioritise governance quality above other board-level characteristics.

For policymakers and regulators, the cross-country consistency of the governance-sustainability relationship provides some support for harmonised governance standards that emphasise disclosure quality and board oversight as levers for improving corporate sustainability. However, the non-significance of the country control variable should be interpreted with caution given the small per-country sample size, and further large-scale cross-country research is needed before firm conclusions can be drawn about the feasibility of universally applicable governance-sustainability frameworks.

For investors, the finding that governance quality is a strong and significant predictor of ESG disclosure is relevant to ESG investing strategies. Firms with higher governance scores can be expected to exhibit more comprehensive sustainability disclosure, which may serve as a proxy for broader sustainability commitment. This supports the growing practice of using governance scores as a key input in ESG investment screening and portfolio construction.

6. Conclusion

6.1 Summary of the Study and Key Findings

This study set out to examine two related empirical questions. First, whether corporate governance quality is positively associated with sustainability performance across a cross-country sample of publicly listed companies. Second, whether board gender diversity moderates this relationship, such that the positive effect of governance quality on sustainability performance is stronger in firms with more gender-diverse boards. Drawing on institutional theory, agency theory, upper echelons theory and stakeholder theory, and using Bloomberg ESG data for 35 companies across ten countries over the period 2018 to 2023, the study employed multiple regression analysis and moderation regression analysis to test two formally stated hypotheses.

The results provide strong support for H1. Corporate governance quality, as measured by Bloomberg's ESG Governance Score, is a positive and statistically significant predictor of sustainability performance, as measured by Bloomberg's ESG Disclosure Score ($\beta = .414$, $p < .001$). This finding holds across a sample spanning common law and civil law developed markets as well as emerging economies, suggesting that the governance-sustainability relationship is robust across diverse institutional environments. An additional noteworthy finding is the significant positive effect of board size on sustainability disclosure ($\beta = .272$, $p < .001$), which supports resource dependence theory's proposition that larger boards enhance governance capacity and oversight.

H2, however, is not supported. The interaction term between ESG Governance Score and Board Gender Diversity is not statistically significant ($p > .10$), indicating that board gender diversity does not moderate the governance-sustainability relationship in the present sample. The effect of governance quality on sustainability performance appears to operate independently of the proportion of female directors on the board. While this null result is not consistent with the moderating hypothesis derived from the literature, it is theoretically informative and contributes

meaningfully to the academic debate on the role of board gender diversity in governance research.

6.2 Theoretical Contributions

This study makes three principal theoretical contributions. First, it contributes to the corporate governance and sustainability literature by providing cross-country empirical evidence that the positive relationship between governance quality and sustainability performance holds across diverse institutional environments. By extending the analysis beyond single-country settings to include ten countries spanning different legal origins, levels of market development and regulatory frameworks, the study strengthens confidence in the generalisability of the governance-sustainability nexus and supports the view that agency theory's core predictions about governance mechanisms are not confined to specific institutional contexts. Support for H1 is further reinforced by the significant direct effect of the ESG Governance Score observed in the moderation model, confirming the robustness of the governance-sustainability relationship across both analytical specifications employed in this study.

Second, the study contributes to the board diversity literature by examining board gender diversity as a moderating variable in the governance-sustainability relationship rather than as a direct predictor of outcomes. The non-significant moderation result suggests that the influence of gender diversity on sustainability outcomes may be additive rather than conditional, operating through direct channels rather than by amplifying the effectiveness of governance quality. This distinction has important implications for how future research conceptualises and operationalises the role of board gender diversity in empirical models.

Third, by employing a cross-country research design grounded in institutional theory, the study provides an empirical examination of whether national institutional context differentiates firms' governance and sustainability profiles. While the country control variable did not reach significance in the baseline regression, the cross-country consistency of the

governance-sustainability relationship itself constitutes an empirically meaningful finding within the institutional theory framework.

6.3 Limitations

This study is subject to several limitations that should be considered when interpreting the findings. First, the sample size of 35 companies, while yielding approximately 240 firm-year observations, is relatively small for a cross-country regression study. This limits the statistical power available to detect moderating effects, which are typically smaller in magnitude than direct effects, and restricts the number of firms available per country. As a result, the non-significant result for H2 should not be interpreted as conclusive evidence that board gender diversity has no moderating role but rather as reflecting the constraints of the current dataset.

The study relies exclusively on Bloomberg Terminal data for all variables. While Bloomberg provides standardised and widely used ESG metrics, its scoring methodologies are proprietary and may not be fully transparent, making independent verification of variable construction difficult. Additionally, Bloomberg's ESG coverage may be less comprehensive for smaller or less prominent firms, particularly in emerging markets, which may introduce some selection bias into the sample.

Third, the cross-sectional pooling of firm-year observations without firm fixed effects means that the analysis does not account for unobserved time-invariant firm characteristics that may confound the estimated relationships. A panel data approach with firm fixed effects, applied to a larger dataset, would provide more robust causal identification. Fourth, the study relies exclusively on Bloomberg Terminal data, which may introduce survivorship bias and limit coverage of smaller or less prominently listed firms, particularly in emerging markets.

6.4 Directions for Future Research

The findings and limitations of this study suggest several directions for future research. First, replicating the moderation analysis with a larger sample, ideally drawing on the full constituent lists of the indices used in the present study, would provide greater statistical power to test the moderating role of board gender diversity and produce more reliable estimates of the governance-sustainability relationship at the country level. Access to LSEG (Refinitiv) data, which offers broader ESG and board composition coverage, would be particularly valuable in this regard.

Second, future studies could examine the direct effect of board gender diversity on sustainability performance as a primary research question, rather than as a moderating variable, building on the growing evidence base documented by Zhu and Chen (2025), Tawfik *et al.* (2026) and Marie *et al.* (2025). Exploring whether critical mass theory, which predicts that the influence of female directors only becomes meaningful above a certain threshold, holds in cross-country governance contexts would be a particularly valuable contribution.

Third, future research could employ panel data techniques with firm and year fixed effects to more rigorously isolate the causal effect of governance quality on sustainability performance, controlling for unobserved firm-specific heterogeneity. Finally, qualitative or mixed-methods approaches, such as interviews with board members or case studies of firms with notably high or low ESG governance scores, could provide richer contextual insights into the mechanisms through which governance quality drives sustainability disclosure, complementing the quantitative findings of the present study.

Finally, future research could explore the moderating role of national institutional context in the governance-sustainability relationship, analysing how the strength of this relationship varies systematically across common law and civil law systems or between developed and emerging markets. The present study included country as a control variable in the preliminary regression. But a dedicated moderation analysis treating institutional context as a moderating variable would

provide richer cross-national evidence on how legal origin and regulatory frameworks condition the governance-sustainability nexus. This would represent a natural and theoretically grounded extension of the present study's institutional theory framework.

6.5 Closing Remarks

This study set out to contribute to the growing intersection of corporate governance and sustainability research by examining the governance-sustainability relationship and the potential moderating role of board gender diversity across a diverse cross-country sample. The finding that governance quality is a robust and significant driver of sustainability disclosure, operating consistently across ten institutionally diverse countries, represents the study's principal empirical contribution. While the moderating hypothesis was not supported under the analytical conditions of this study, the null result itself advances understanding of how board gender diversity operates within governance-sustainability models. Taken together, the findings underscore the centrality of governance quality in shaping firms' sustainability profiles and highlight the need for continued empirical investigation into the board-level mechanisms that condition and amplify this relationship.

Declaración de Uso de Herramientas de Inteligencia Artificial Generativa en Trabajos Fin de Grado

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Por la presente, yo, Senan Greg Hogan, estudiante de 4E4 de la Universidad Pontificia Comillas al presentar mi Trabajo Fin de Grado titulado "The Impact of

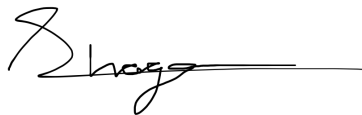
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1. **Brainstorming de ideas de investigación:** Utilizado para idear y esbozar posibles áreas de investigación.
2. **Referencias:** Usado conjuntamente con otras herramientas, como Science, para identificar referencias preliminares que luego he contrastado y validado.
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Fecha: 28/05/2026

Firma:

A handwritten signature in black ink, appearing to be 'Shoggy', written over a horizontal line.

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