



UNIVERSITÀ
DI PAVIA

Dipartimento di Scienze Economiche e Aziendali Corso

di Laurea **Magistrale in International Business and**

Entrepreneurship

Do Gender-Diverse Boards Enhance Sustainable and Financial Performance? Evidence from ESG Ratings in the Banking Sector

Relatore:

Chiar.mo Prof. Mario Maggi

**Tesi di Laurea
di Sherly Astuti**

Matr. n. 530629

Anno Accademico 2026-2027

Abstract

Board gender diversity has received increasing attention as an important aspect of corporate governance, yet empirical evidence regarding its effects on sustainability and financial performance remains mixed, particularly across different institutional environments. This study examines the relationships between board gender diversity, environmental, social and governance (ESG) performance, and financial performance in the international banking sector. It further investigates whether ESG performance mediates the relationship between board gender diversity and financial performance, and whether this relationship varies across national institutional contexts.

Using a cross-sectional sample of 100 publicly listed banks from 29 countries for the 2025 financial year, the study measures board gender diversity primarily as the proportion of female directors, financial performance using return on assets (ROA), and sustainability performance using MSCI ESG ratings. The analysis employs regression models with institutional and regional controls, moderation analysis, and bias-corrected bootstrap mediation tests. The findings show no significant unconditional relationships between board gender diversity and ESG performance, board gender diversity and financial performance, or ESG performance and financial performance. Consequently, ESG performance does not mediate the diversity–financial performance relationship. However, limited but consistent evidence indicates that institutional context moderates this relationship, with board gender diversity becoming more positively associated with profitability in stronger institutional environments. Overall, the findings suggest that the financial implications of board gender diversity are context-dependent rather than universal, highlighting the importance of institutional conditions in cross-country corporate governance research.

Keywords: Board Gender Diversity; ESG Performance; Financial Performance; Institutional Context; Banking Sector; Corporate Governance

Abstract

La diversità di genere nei consigli di amministrazione ha assunto negli ultimi anni un ruolo sempre più rilevante nel dibattito sulla corporate governance. Tuttavia, le evidenze empiriche relative ai suoi effetti sulla sostenibilità e sulla performance finanziaria rimangono contrastanti, soprattutto quando si considerano contesti istituzionali differenti. Il presente studio analizza la relazione tra diversità di genere nei consigli di amministrazione, performance ambientale, sociale e di governance (ESG) e performance finanziaria nel settore bancario internazionale. Inoltre, esamina il possibile ruolo di mediazione della performance ESG nella relazione tra diversità di genere e performance finanziaria, nonché l'eventuale effetto moderatore del contesto istituzionale nazionale.

L'analisi si basa su un campione cross-sectional di 100 banche quotate appartenenti a 29 Paesi, con riferimento all'esercizio 2025. La diversità di genere è misurata principalmente attraverso la quota di donne presenti nel consiglio di amministrazione, mentre la performance finanziaria è valutata mediante il Return on Assets (ROA) e la performance di sostenibilità attraverso i rating ESG di MSCI. L'analisi empirica utilizza modelli di regressione con controlli istituzionali e regionali, analisi di moderazione e test di mediazione mediante bootstrap bias-corrected.

I risultati non evidenziano relazioni statisticamente significative, in termini incondizionati, tra diversità di genere e performance ESG, tra diversità di genere e performance finanziaria, né tra performance ESG e performance finanziaria. Di conseguenza, non emerge un effetto di mediazione significativo della performance ESG. Si riscontrano, tuttavia, evidenze limitate ma coerenti di un effetto moderatore del contesto istituzionale: la relazione tra diversità di genere e redditività tende a diventare più positiva nei Paesi caratterizzati da istituzioni più solide. Nel complesso, i risultati suggeriscono che le implicazioni finanziarie della diversità di genere nei consigli di amministrazione dipendano dal contesto istituzionale, piuttosto che

configurarsi come un effetto universale, sottolineando così l'importanza delle caratteristiche istituzionali negli studi comparativi internazionali sulla corporate governance.

Parole chiave: diversità di genere nei consigli di amministrazione; performance ESG; performance finanziaria; contesto istituzionale; settore bancario; corporate governance.

Table of Contents

<i>Abstract.....</i>	<i>I</i>
<i>Abstract.....</i>	<i>III</i>
<i>Chapter 1. Introduction.....</i>	<i>1</i>
1.1 Background.....	1
1.2 Research Motivations.....	8
1.3 Research Aim	11
1.4 Research Questions	12
1.5 Research Methodology	13
1.6 Expected Contributions.....	14
1.7 Scope and Delimitations	16
1.8 Definition of Key Terms	17
1.9 Thesis Structure	18
<i>Chapter 2. Literature Review.....</i>	<i>20</i>
2.1 Corporate Governance: Concept, Development, and Role in Banking Firms	20
2.1.1 Evolution of Corporate Governance Systems.....	21
2.1.2 Corporate Governance in Financial and Banking Institutions.....	22
2.1.3 Role of Board of Directors in Corporate Governance	23
2.1.4 Governance Mechanisms and Firm Performance.....	24
2.1.5 Governance Challenges in the Banking Sector	25
2.2 Board Gender Diversity: Concept, Development, and Importance	26
2.2.1 Evolution of Gender Diversity in Corporate Boards	27
2.2.2 Women Representation in Corporate Leadership	28

2.2.3 Barriers to Female Participation in Boards.....	29
2.2.4 Benefits of Gender-Diverse Boards	30
2.2.5 Criticism and Limitations of Board Gender Diversity Policies	31
2.2.6 Gender Diversity Policies and Global Trends	31
2.2.7 Critical Mass and the Threshold of Female Representation	32
2.2.8 Measuring Board Gender Diversity	34
2.3 Theoretical Foundations of Board Gender Diversity and Firm Performance	35
2.3.1 Agency Theory and Board Monitoring Role	35
2.3.2 Stakeholder Theory and Social Responsibility.....	36
2.3.3 Resource Dependence Theory and Board Resources.....	38
2.3.4 Upper Echelons Theory and Leadership Diversity.....	39
2.4 ESG Performance: Concept, Development, and Measurement	40
2.4.1 History and Evolution of ESG	40
2.4.2 Environmental, Social, and Governance Components	41
2.4.3 ESG Ratings and Measurement Systems.....	42
2.4.4 Importance of ESG in Modern Financial Markets	43
2.5 Financial Performance in Banking: Concept, Determinants, and Measurement	43
2.5.1 Measuring Financial Performance in Banking Firms	44
2.5.2 Bank Size as a Determinant of Performance	44
2.5.3 Capital Structure and Leverage	45
2.5.4 Asset Quality and Non-Performing Loans.....	46
2.6 Board Gender Diversity and ESG Performance	47
2.6.1 Relationship Between Gender Diversity and ESG	47
2.7 Board Gender Diversity and Financial Performance.....	48
2.7.1 Board Gender Diversity and Financial Performance	49
2.7.2 Gender Diversity and Firm Profitability	49
2.7.3 Gender Diversity and Return on Assets (ROA)	50

2.7.4 Gender Diversity and Risk Management in Banks.....	51
2.7.5 Gender Diversity and Decision-Making Efficiency.....	51
2.7.6 Empirical Studies on Diversity and Financial Performance	52
2.7.7 Inconsistent Evidence in Previous Research.....	53
2.8 ESG Performance and Financial Performance	53
2.8.1 ESG and Corporate Financial Outcomes	54
2.8.2 ESG and Firm Value in Banking Sector	55
2.8.3 ESG and Risk Reduction Mechanisms.....	55
2.8.4 ESG and Investor Confidence.....	56
2.8.5 Empirical Evidence on ESG–Financial Performance Link.....	57
2.8.6 Limitations of Existing Studies	57
2.9 Country Differences and Institutional Environment	58
2.9.1 Institutional Theory and Governance Differences.....	58
2.9.2 Legal Systems and Corporate Governance Quality.....	59
2.9.3 Cultural Dimensions and Gender Diversity Acceptance	60
2.9.4 Developed vs Emerging Market Differences	60
2.9.5 Country-Level ESG Regulation Differences.....	61
2.9.6 Moderating Role of Country in Governance–Performance Relationship.....	62
2.10 Banking Sector Governance and ESG Integration	62
2.10.1 Governance Structure in Banking Firms.....	63
2.10.2 Board Composition in Banking Industry.....	64
2.10.3 Risk Governance in Banks	64
2.10.4 ESG Implementation in Financial Institutions.....	65
2.10.5 Challenges of Gender Diversity in Banking Boards	66
2.10.6 Sustainability and Financial Stability in Banks	66
2.11 Research Gap and Conceptual Framework	67
<i>Chapter 3. Conceptual Framework and Research Hypotheses</i>	<i>71</i>

3.1 Board Gender Diversity and ESG Performance	71
3.2 Board Gender Diversity and Financial Performance.....	73
3.3 ESG Performance and Financial Performance	74
3.4 Country Differences as a Moderator in Governance–Performance Relationship.....	76
3.5 Conceptual Framework and Summary of Hypotheses.....	77
<i>Chapter 4. Research Methodology.....</i>	<i>80</i>
4.1 Data Collection Method	80
4.1.1 Sample Size and Composition.....	80
4.1.2 Research Period	82
4.1.3 Population.....	83
4.1.4 Data Collection Methods and Sources	84
4.1.5 Key Variables	86
4.2 Research Design	88
4.3 Statistical Analysis Methods.....	90
4.4 Descriptive Statistics and Data Summary	92
4.5 Presentation of Results	93
4.6 Robustness Checks	94
4.7 Reliability and Validity	95
4.8 Limitations, Endogeneity and Ethical Considerations.....	96
<i>Chapter 5. The Empirical Findings & Discussion</i>	<i>99</i>
5.1 Sample Construction and Realised Variable Set.....	100
5.1.1 The final estimation sample	100
5.1.2 Verification and correction of the board composition data	100

5.1.3 Departures from the variable set specified in Chapter 4.....	102
5.1.4 Variable treatment.....	106
5.2 Descriptive Statistics	106
5.2.1 Distribution of the variables	106
5.2.2 The profile of board gender diversity	110
5.2.3 Distribution of the sample across countries and regions	111
5.3 Correlation Analysis and Diagnostic Testing	113
5.3.1 Bivariate correlations	113
5.3.2 Multicollinearity	117
5.3.3 Regression diagnostics.....	118
5.4 Board Gender Diversity and ESG Performance (H1).....	120
5.5 Board Gender Diversity and Financial Performance (H2)	123
5.6 The Critical Mass Specification	128
5.7 ESG Performance and Financial Performance (H3).....	132
5.8 The Moderating Role of Institutional Context (H4).....	135
5.9 The Mediating Role of ESG Performance (H5)	140
5.10 Robustness Checks	142
5.11 Discussion	144
5.11.1 The absence of a direct financial effect	144
5.11.2 The absence of a sustainability channel	146
5.11.3 The conditional character of the relationship	147
5.11.4 The critical mass argument in a changed empirical setting	148
5.11.5 Bank size and the shape of the profitability relationship	149
5.11.6 Measurement error and the fragility of governance findings	149
5.11.7 What the findings do and do not license	150

5.13 Summary of Hypothesis Testing.....	151
<i>Chapter 6. Conclusion, Limitation and Future Research.....</i>	<i>154</i>
6.1 Summary of the Study and its Findings	154
6.2 Answers to the Research Questions.....	157
6.3 Theoretical Implications	158
6.4 Practical and Policy Implications.....	161
6.5 Limitations	162
6.6 Directions for Future Research.....	165
6.7 Concluding Remarks.....	168
<i>REFERENCE.....</i>	<i>170</i>

Chapter 1. Introduction

This chapter begins with the background of the study by discussing the growing importance of gender diversity, corporate governance, ESG performance, and sustainable finance within the global banking industry. The chapter explains the motivations behind conducting the research and highlights the importance of examining the relationship between gender diverse boards and both sustainable and financial performance in banking firms. Furthermore, this chapter outlines the research aims, methodology, expected findings, and the structure of the thesis. Through these discussions, the chapter establishes the foundation of the study and identifies the research gap that this thesis seeks to address.

1.1 Background

In recent decades, the global business environment has experienced significant transformation due to increasing awareness of sustainability, ethical governance, and social responsibility. Traditionally, corporate success was primarily measured through financial indicators such as profitability (Alshehadeh et al., 2022; Kandpal et al., 2024), market share (Dzreke & Dzreke, 2025), and shareholder returns (Aguilera & Ruiz Castillo, 2025). However, globalization, climate change concerns, corporate scandals, and financial crises have changed the expectations placed upon corporations (K. Akinsola, 2025; Garefalakis et al., 2026; Wright & Nyberg, 2024). Companies are now expected not only to generate profits but also to demonstrate accountability, transparency, and responsibility toward society and the environment. Consequently, Environmental, Social, and Governance (ESG) considerations have become increasingly important in evaluating corporate performance and long-term organizational sustainability (S. Chen et al., 2023).

The emergence of ESG as a major evaluation framework reflects the growing recognition that sustainable business practices contribute to long-term organizational success

(Lin, 2024). Environmental factors examine how firms manage issues such as carbon emissions, climate change risks, waste management, and resource utilization (Yang et al., 2023). Social factors assess labor practices, diversity, employee welfare, customer relations, and broader societal impact (Nirmala et al., 2026). Governance factors focus on corporate leadership, board effectiveness, accountability, transparency, ethical conduct, and risk management practices (K. Akinsola, 2025). Investors, regulators, financial institutions, and stakeholders increasingly rely on ESG ratings to evaluate whether firms are capable of sustaining long-term value creation while effectively managing environmental and social risks (Landi et al., 2022; Lin, 2024).

At the same time, corporate governance has become one of the most critical aspects of modern business management (Kavadis & Thomsen, 2023). Corporate governance refers to the systems, processes, and structures through which corporations are directed, monitored, and controlled (Banda, 2023). Effective governance mechanisms are essential to ensure accountability (Emeka-Okoli et al., 2024), minimize agency conflicts (K. Akinsola, 2025), improve transparency (Sari, 2023), and protect stakeholder interests (Efunniyi et al., 2024). The board of directors plays a central role within corporate governance because it is responsible for supervising management, monitoring organizational performance, and guiding strategic decision-making processes (K. Akinsola, 2025; Dimingu & Mogaji, 2024; Thompson & Alleyne, 2023).

In recent years, increasing attention has been given to the composition and diversity of corporate boards. Scholars, policymakers, and investors have argued that board diversity may improve board effectiveness by introducing broader perspectives, diverse experiences, and more balanced decision-making processes. Diversity within boards can take many forms, including diversity in age, education, ethnicity, nationality, professional background, and gender (Hosny & Elgharbawy, 2022; Zaman et al., 2024). Among these dimensions, gender diversity has emerged as one of the most widely discussed issues in corporate governance

research and policy debates (Khatib et al., 2023; N. Pandey et al., 2023; Saleh et al., 2025; Shohaieb et al., 2022).

The discussion surrounding gender diversity reflects broader global concerns regarding gender equality and women's participation in leadership positions. Over time, women's involvement in education, professional careers, entrepreneurship, and executive leadership has increased substantially across many countries. However, despite these advancements, women continue to face institutional, structural, and sociocultural barriers that limit their access to senior leadership positions and board representation (Smith & Sinkford, 2022). According to Barkhuizen et al. (2022), traditional perceptions regarding leadership roles often continue to favor men, while women may face unequal access to professional networks, career advancement opportunities, and executive decision-making positions.

Several studies suggest that increasing female representation on corporate boards may contribute positively to organizational performance (A. Amin et al., 2022; Awwad et al., 2023; Campopiano et al., 2023; Chatterjee & Nag, 2022; Islam et al., 2022). Women directors are often associated with stronger ethical orientation, enhanced communication, improved stakeholder sensitivity, and more collaborative leadership styles (Campopiano et al., 2023). Female board members may also contribute additional perspectives and experiences that improve board discussions and reduce the likelihood of groupthink in strategic decision-making processes (Alajmi et al., 2025). As organizations increasingly operate in complex and uncertain business environments, diversity within boards may strengthen organizational adaptability, innovation, and sustainability orientation.

A recurring theme in this literature is that the influence of women directors may depend less on their presence than on their number. Kanter (1977) argued that groups in which a minority constitutes less than roughly fifteen per cent of members operate as skewed groups, in which minority members are treated as representatives of their category rather than as

individuals. Applied to corporate boards, Konrad, Kramer and Erkut (2008) found that a threshold of three women marks the point at which female directors cease to be perceived as tokens and begin to shape boardroom discussion substantively. Torchia, Calabro and Huse (2011) provided empirical support for this threshold, and Joecks, Pull and Vetter (2013) documented a U-shaped relationship in which performance declines before the critical mass is reached and improves only thereafter. This threshold logic is directly relevant to the inconsistency of prior findings, since studies that treat female representation as a purely linear variable may average across boards on either side of the threshold and thereby obscure the effect they seek to measure.

The relationship between gender diversity and ESG performance has therefore become an increasingly important area of discussion. Adeola & Ajasa-Adeoye (2025) stated that companies with gender-diverse boards are often believed to place greater emphasis on sustainability practices, social responsibility, and stakeholder engagement. Female directors may encourage stronger environmental and social initiatives because they are perceived to be more attentive to ethical concerns, long-term risks, and social impacts (Hyun et al., 2022). Consequently, firms with more diverse boards may achieve higher ESG ratings and stronger sustainability performance. This issue is particularly relevant within the banking sector. Banks play a fundamental role in the economy because they act as financial intermediaries, facilitate investments, allocate capital, and influence economic development (Fengju & Wubishet, 2024). The banking industry is highly regulated and heavily dependent on public trust, governance quality, and effective risk management systems. Weak governance practices within banking institutions may result in financial instability that affects not only individual firms but also national and global economies (Kusi et al., 2022). Therefore, strong governance structures are essential for maintaining confidence, stability, and sustainability within the financial system.

The importance of governance within banking firms became especially apparent following major financial crises, where inadequate oversight, poor governance practices, and excessive risk-taking contributed to severe economic consequences (Srivastava, 2023). Since then, regulators and stakeholders have increasingly emphasized the need for stronger governance frameworks, improved board oversight, and enhanced accountability mechanisms within financial institutions (Sari, 2023). As part of these governance reforms, diversity within corporate boards has become a significant area of interest.

In addition to governance pressures, banks are also facing increasing demands related to sustainability and responsible finance (Habib & Khan, 2025). Financial institutions are expected to support sustainable economic development through environmentally responsible lending, sustainable investment practices, and ESG integration within their operations (Junaedi, 2024). ESG ratings have therefore become increasingly important indicators of banking performance because they reflect not only financial strength but also governance quality and sustainability commitment.

Any attempt to identify the effect of board composition on bank performance must, however, contend with the fact that bank profitability is shaped by structural characteristics that operate independently of governance. Bank size affects profitability through economies of scale, funding cost advantages and implicit too-big-to-fail subsidies. Capital structure, typically captured by the ratio of equity to total assets, affects both the denominator of return on assets and the institution's capacity to absorb losses. Asset quality, most commonly proxied by the non-performing loan ratio, is a direct determinant of provisioning expense and therefore of reported earnings; Berger and DeYoung (1997) showed that problem loans and cost efficiency are jointly determined over time. Unless these three characteristics are held constant, an observed association between board gender diversity and profitability may simply reflect the tendency of larger, better-capitalised banks with cleaner loan books to appoint more women to

their boards. Controlling for size, leverage and asset quality is therefore not a technical refinement but a precondition for interpreting the governance coefficient at all.

It is worth emphasising that sustainability performance is treated in this study as an outcome of interest in its own right, and not solely as a channel through which governance reaches profitability. For banks, ESG ratings increasingly determine access to sustainable funding instruments, influence supervisory assessment, and shape the composition of the institutional investor base. A board characteristic that improves ESG performance is therefore consequential even if its effect on short-run accounting profitability proves to be small or statistically indistinguishable from zero. Accordingly, this study estimates the association between board gender diversity and each of the two outcomes separately, allowing the evidence on sustainability performance and the evidence on financial performance to be assessed on their own terms before any relationship between them is considered.

Theoretical perspectives provide several explanations regarding why gender-diverse boards may influence sustainable and financial performance. Stakeholder theory argues that diverse boards are more responsive to stakeholder interests and therefore more likely to adopt sustainable business practices (Haleem et al., 2022). Agency theory suggests that gender-diverse boards improve monitoring effectiveness and reduce managerial opportunism, leading to better governance outcomes (Yahaya, 2025). According to Andrews (2025), resource dependence theory further explains that women directors contribute additional expertise, knowledge, professional networks, and perspectives that enhance board effectiveness and organizational performance.

Despite these theoretical arguments, empirical findings regarding the relationship between board gender diversity, ESG performance, and financial performance remain inconsistent. Some studies report positive relationships between female board representation and corporate sustainability performance (Awwad et al., 2023; Buallay et al., 2022; Issa, Zaid,

& Hanaysha, 2022), while others find weak or insignificant effects (Githaiga & Kosgei, 2023; Wong, 2024). Similarly, evidence regarding the relationship between gender diversity and financial performance remains mixed across industries and institutional contexts. These inconsistencies suggest that the impact of board diversity may vary depending on regulatory environments, industry characteristics, organizational culture, and governance structures (Amin et al., 2025).

Furthermore, although numerous studies have examined board diversity within manufacturing and non-financial industries, relatively fewer studies focus specifically on banking firms. This represents an important research gap because the banking sector possesses unique governance structures, regulatory requirements, and sustainability responsibilities that may influence how board diversity affects organizational outcomes (Issa, Zaid, Hanaysha, et al., 2022). Therefore, there is a need for further empirical investigation into whether gender-diverse boards contribute to sustainable and financial performance specifically within banking institutions.

Global regulatory trends also continue to encourage greater female participation in corporate leadership positions. Many countries have introduced board diversity guidelines, disclosure requirements, and gender quota policies to improve inclusiveness within corporate governance structures (Garcia-Torea, 2023). Institutional investors and international organizations increasingly view gender diversity as an indicator of governance quality and organizational responsibility (Alshabibi, 2022). However, despite these efforts, questions remain regarding whether board diversity produces measurable organizational benefits or merely fulfills symbolic governance expectations.

This study, titled *“Do Gender-Diverse Boards Enhance Sustainable and Financial Performance? Evidence from ESG Ratings in the Banking Sector,”* seeks to contribute to this discussion by examining whether gender diversity within corporate boards influences ESG

performance and financial outcomes in banking institutions. The study focuses specifically on the relationship between female board representation, ESG ratings, and financial performance indicators in banking firms.

The significance of this research lies in its contribution to the literature on corporate governance, sustainable finance, and banking performance. Through focusing specifically on ESG ratings within the banking sector, this study aims to provide deeper insights into how inclusive board structures influence sustainability practices and financial outcomes. The findings are expected to contribute both theoretically and practically by providing evidence that may support policymakers, regulators, investors, and banking institutions in designing more effective governance and sustainability strategies.

1.2 Research Motivations

The motivation for conducting this study emerges from several important developments in global corporate governance practices, sustainability discussions, and gender diversity initiatives.

First, gender diversity within corporate leadership has become a major global concern in both academic and professional discussions (Alhassan & Al Doghan, 2022; Hamplová et al., 2022; Vieira et al., 2022). Governments, stock exchanges, institutional investors, and international organizations increasingly encourage firms to improve female representation on corporate boards. Diversity is now commonly viewed as an important component of good corporate governance because inclusive leadership structures are believed to strengthen decision-making quality, improve accountability, and promote long-term sustainability (Alajmi et al., 2025). Nevertheless, despite growing support for board diversity initiatives, empirical evidence regarding the actual benefits of gender diversity remains inconsistent. Some studies suggest that female board representation positively influences sustainability and financial

outcomes (Awwad et al., 2023; Buallay et al., 2022; Issa, Zaid, & Hanaysha, 2022), while others find limited or insignificant effects (Githaiga & Kosgei, 2023; Wong, 2024). This inconsistency motivates the need for further investigation into the effectiveness of gender-diverse boards.

Second, the growing importance of ESG performance within financial markets also motivates this research. ESG ratings are increasingly used by investors and stakeholders to evaluate the sustainability, governance quality, and long-term resilience of firms (Beckmann et al., 2014; Garefalakis et al., 2026; Kandpal et al., 2024). Companies with strong ESG performance are often viewed as more capable of managing environmental risks, maintaining stakeholder trust, and achieving sustainable growth (Kulova & Nikolova-Alexieva, 2023). Since corporate governance is considered one of the key determinants of ESG performance, understanding whether board gender diversity contributes to ESG outcomes is highly relevant in today's business environment.

Third, the banking sector represents one of the most influential industries within the global economy. Banks play a central role in financing economic activities, supporting investments, and influencing sustainable development through lending and investment decisions (Habib & Khan, 2025). Due to their systemic importance, banks are subject to strict governance regulations and sustainability expectations. Consequently, examining governance mechanisms that may improve sustainability and financial performance within banking institutions is particularly important.

Another motivation for this study is the limited number of studies focusing specifically on the relationship between board gender diversity and ESG performance within banking firms. Most previous studies have focused on non-financial industries or broad cross-sector analyses (Saleh et al., 2025). However, governance structures, regulatory frameworks, and operational risks within banking institutions differ significantly from other industries. Therefore, findings

from non-financial sectors may not fully explain the relationship between gender diversity and performance outcomes within banks.

A related motivation concerns the specification of empirical models in this literature. Studies of board diversity in banking frequently control for firm size alone, or omit controls altogether, even though the determinants of bank profitability are well established. Asset quality in particular is rarely included, despite the fact that the non-performing loan ratio is among the strongest predictors of bank earnings. The absence of an adequate control structure makes it difficult to distinguish a governance effect from a balance-sheet effect, and may contribute to the divergent findings reported across studies. This study therefore adopts a control specification drawn from the banking performance literature, comprising bank size, leverage and asset quality alongside board-level characteristics.

Additionally, this study is motivated by the need to provide evidence-based recommendations for policymakers and corporate leaders. As many countries continue to introduce governance reforms and board diversity initiatives, there is increasing demand for empirical evidence regarding whether gender diversity produces meaningful organizational benefits (Andrews, 2025; Hamplová et al., 2022). The findings of this study may therefore contribute to policy discussions concerning inclusive governance, sustainable finance, and corporate leadership development.

Finally, this research is motivated by the broader objective of promoting sustainable and inclusive economic development. Gender inclusiveness within corporate leadership is not only a governance issue but also part of wider societal efforts toward equality and fair representation. Understanding whether inclusive governance structures contribute positively to sustainability and financial performance may therefore help organizations and policymakers develop strategies that support both economic growth and social progress.

1.3 Research Aim

The main aim of this study is to examine whether gender-diverse boards contribute to sustainable and financial performance in banking firms. The study seeks to explore whether greater female representation on corporate boards influences ESG ratings and financial performance indicators within banking institutions.

More specifically, this study aims to investigate the relationship between board gender diversity and ESG performance by examining whether banking firms with more diverse boards achieve stronger ESG ratings compared to firms with lower levels of female representation. Since ESG ratings increasingly influence investor decisions and corporate reputation (Meng et al., 2023), understanding the governance factors that contribute to sustainability performance is highly important.

In addition, this study seeks to examine whether gender diversity on corporate boards is associated with improved financial performance in banking firms. Financial performance remains one of the primary indicators of organizational success, and it is important to determine whether inclusive board structures contribute positively to profitability, firm value, and financial stability (Asare et al., 2023). Through this analysis, the study aims to clarify whether gender diversity creates measurable economic benefits for organizations.

Furthermore, this research aims to provide evidence-based insights that may contribute to corporate governance policies and sustainable finance initiatives. Through examining the relationship between board diversity, ESG performance, and financial outcomes, the study seeks to support policymakers, regulators, investors, and corporate leaders in developing governance practices that encourage inclusiveness, accountability, and sustainability.

More precisely, the study pursues four objectives, each of which corresponds to one of the hypotheses developed in Chapter 3:

1. To examine whether board gender diversity is associated with the ESG performance of

- listed banking firms, after controlling for bank size, leverage and asset quality.
2. To examine whether board gender diversity is associated with the financial performance of listed banking firms, measured by return on assets, after controlling for the same set of bank characteristics.
 3. To examine whether ESG performance is associated with the financial performance of listed banking firms.
 4. To examine whether country-level institutional differences moderate the relationship between board gender diversity and financial performance.

The first two objectives constitute the baseline of the empirical analysis and are estimated as two parallel regression models. The third and fourth objectives extend that baseline and are estimated once the baseline results have been established.

1.4 Research Questions

Consistent with the objectives stated above, the study is guided by four research questions:

- RQ1. Does board gender diversity influence the ESG performance of listed banking firms?
- RQ2. Does board gender diversity influence the financial performance of listed banking firms?
- RQ3. Does ESG performance influence the financial performance of listed banking firms?
- RQ4. Do country-level institutional differences moderate the relationship between board gender diversity and financial performance?

Each research question is matched to one hypothesis in Chapter 3 and to one estimated model in Chapter 4, so that the analytical structure of the study can be traced from question to hypothesis to specification. Questions of how the findings might inform governance reform are addressed in the discussion of contributions rather than treated as empirical questions, since they cannot be answered by the estimation procedures adopted here.

1.5 Research Methodology

This study adopts a quantitative research approach to examine the relationship between board gender diversity, ESG performance, and financial performance in banking firms. A quantitative methodology is considered appropriate because the study seeks to analyze measurable relationships among governance, sustainability, and financial variables using empirical data.

The study relies primarily on secondary data collected from publicly available sources such as annual reports, sustainability reports, corporate governance disclosures, ESG databases, and financial databases. Banking firms included in the research sample will be selected based on data availability, consistency of ESG reporting, and relevance to the study objectives.

Board gender diversity is measured as the proportion of female directors on the board, which serves as the primary proxy throughout the analysis. A binary critical mass indicator, taking the value of one where three or more women serve on the board, is retained as an alternative specification and is estimated separately in the robustness checks rather than entered alongside the proportional measure, since the two proxies are highly correlated by construction. ESG performance will be measured using ESG ratings obtained from financial information providers. Financial performance is evaluated using Return on Assets (ROA), an accounting measure that is widely applied in banking research because it is comparatively stable across institutions with different capital structures. Market-based measures are not employed, since their availability is uneven across the jurisdictions represented in the sample. To analyze the relationships among the variables, the study will apply statistical and econometric techniques, including descriptive analysis, correlation analysis, and regression analysis. Regression models will be used to determine whether board gender diversity significantly influences ESG performance and financial outcomes while controlling for firm-specific characteristics. The

models control for bank size, measured as the natural logarithm of total assets; leverage, measured as the ratio of total equity to total assets; and asset quality, measured as the ratio of non-performing loans to gross loans. Board size and board independence are included as additional governance controls. The same control set is applied to both dependent variables so that the two sets of estimates remain directly comparable.

The analysis is conducted on cross-sectional data for the observation year 2025 which yields one observation for each institution in the sample. A single-year design is adopted because board composition, ESG and financial data could be assembled on a comparable basis across all jurisdictions only for the most recent reporting year. The consequence is that year fixed effects are not estimable and the explanatory variables cannot be lagged, so the findings are reported throughout as conditional associations rather than as causal effects. Cross-jurisdictional heterogeneity is instead absorbed by country and regional fixed effects. The observation year is stated explicitly here and applied consistently in Chapter 4.

The use of quantitative methods enables the study to provide objective and systematic analysis of governance and sustainability relationships within banking firms. Furthermore, the empirical findings generated through statistical analysis are expected to contribute to both academic literature and practical policymaking discussions related to corporate governance and sustainable finance.

1.6 Expected Contributions

This study will test whether board gender diversity is associated with ESG performance and with financial performance within banking firms. The direction and magnitude of these associations are treated as open empirical questions. Consistent with a deductive design, the study states its hypotheses in advance and subjects them to test, rather than anticipating a

particular outcome; the discussion below therefore sets out the contributions the study is positioned to make, whichever way the evidence falls.

However, the study also recognizes that the relationship between gender diversity and organizational performance may not always be straightforward. The effects of board diversity may depend on several contextual factors such as organizational culture, governance structure, regulatory environment, and the level of inclusion within board decision-making processes. Therefore, the study does not only seek to identify whether relationships exist but also aims to contribute to a deeper understanding of how and why gender diversity may influence sustainable and financial performance in banking firms.

The findings of this study are expected to contribute significantly to the existing literature on corporate governance and sustainable finance. While previous studies have produced mixed results regarding the effects of board gender diversity (Awwad et al., 2023; Buallay et al., 2022; Githaiga & Kosgei, 2023; Issa, Zaid, & Hanaysha, 2022; Wong, 2024), this research specifically focuses on banking firms and ESG ratings, thereby addressing an important gap in the literature. The study may therefore provide sector-specific evidence regarding the role of gender-diverse boards within highly regulated financial institutions.

From a practical perspective, the findings may provide valuable insights for policymakers, regulators, investors, and corporate leaders. If gender diversity is found to positively influence ESG performance and financial outcomes, the results may support ongoing governance reforms and diversity initiatives aimed at increasing female representation on corporate boards. Policymakers may use the findings to strengthen board diversity guidelines and sustainability-related governance frameworks. Similarly, banking institutions may consider the findings when designing board structures, leadership development programs, and governance strategies that promote inclusiveness and sustainability.

Furthermore, the findings may also contribute to sustainable finance discussions by demonstrating whether inclusive governance structures support long-term value creation and responsible corporate behavior. Investors and stakeholders increasingly consider ESG performance when evaluating firms, and evidence regarding the governance factors that contribute to sustainability outcomes may therefore have important implications for investment strategies and risk assessment.

Overall, the study is designed to establish whether board gender diversity operates as a substantive governance characteristic or remains a largely symbolic one within banking firms. A finding of no significant association would itself be informative, since it would speak directly to the debate on tokenism and to the adequacy of representation thresholds in current diversity regulation. From providing empirical evidence from the banking sector, the study aims to contribute both theoretically and practically to discussions regarding inclusive corporate governance and sustainable business performance.

1.7 Scope and Delimitations

The scope of this study is defined along four dimensions. First, the unit of analysis is the publicly listed banking firm; unlisted banks, non-bank financial institutions, insurers and asset managers fall outside the sample. Second, the observation period is the single financial year 2025, chosen because it is the most recent year for which board composition, ESG and financial data are available on a consistent basis across all jurisdictions in the sample. Third, the sample spans [jumlah] countries drawn from both developed and emerging markets, selected to provide variation in institutional environment while retaining comparability of disclosure. Fourth, the analysis relies exclusively on secondary data obtained from audited financial statements, governance disclosures and a single commercial ESG rating provider.

Several delimitations follow from these choices. Financial performance is captured by an accounting measure rather than a market-based one, so the findings speak to operating profitability rather than to valuation. ESG performance is captured by the composite score of a single provider; because rating methodologies differ across providers, the results are conditional on that choice and are not necessarily reproducible with an alternative rating source. Board gender diversity is measured through observable board composition and does not capture the depth of participation of individual directors in committee work or in boardroom deliberation. Finally, banks that were delisted, acquired or newly listed during the observation period are excluded, which introduces a degree of survivorship in the sample.

1.8 Definition of Key Terms

The following terms are used throughout the thesis with the meanings stated here. Board gender diversity refers to the representation of women on the board of directors, operationalised as the number of female directors divided by the total number of board members. Critical mass refers to the threshold at which minority representation on a board becomes substantive rather than symbolic, operationalised as a binary indicator taking the value of one where three or more women serve on the board. ESG performance refers to a firm's assessed standing on environmental, social and governance dimensions, operationalised as the MSCI ESG rating on its seven grades from CCC to AAA, coded 1 to 7, with higher values indicating stronger assessed performance relative to industry peers.

Financial performance refers to operating profitability, operationalised as return on assets: net income after tax divided by average total assets. Bank size refers to the scale of an institution's balance sheet, operationalised as the natural logarithm of total assets. Leverage refers to the extent to which a bank funds its assets with liabilities rather than equity, operationalised as total equity divided by total assets, such that lower values indicate higher

leverage. Asset quality refers to the credit condition of a bank's loan portfolio, operationalised as non-performing loans divided by gross loans.

1.9 Thesis Structure

This thesis is organized into six chapters, each of which discusses a specific aspect of the research in a systematic and structured manner. The organization of the thesis is designed to provide a clear understanding of the research problem, theoretical foundations, methodology, findings, and overall contributions of the study.

Chapter 1 introduces the overall background of the study by discussing the growing importance of ESG performance, corporate governance, and gender diversity within the banking sector. This chapter explains the research problem, research motivations, research aims, methodology, expected findings, and the structure of the thesis. It establishes the foundation of the research and identifies the research gap that the study seeks to address.

Chapter 2 presents the theoretical foundations and literature review related to corporate governance, board gender diversity, ESG performance, and financial performance. The chapter discusses major theories relevant to the study, including stakeholder theory, agency theory, and resource dependence theory. In addition, it reviews previous empirical studies concerning gender diversity and organizational outcomes in order to identify gaps, inconsistencies, and areas requiring further investigation.

Chapter 3 develops the conceptual framework and research hypotheses of the study. Based on the theoretical discussions and empirical literature reviewed in the previous chapter, this chapter explains the proposed relationships between board gender diversity, ESG performance, and financial performance. The chapter also develops the research hypotheses that will be empirically tested in the study.

Chapter 4 explains the research methodology adopted in the study. This chapter discusses the research design, data collection procedures, sampling techniques, variable measurements, and statistical analysis methods used to examine the relationships among the variables. It also explains the rationale for using quantitative methods and describes how the reliability and validity of the research are maintained.

Chapter 5 presents the empirical findings and discusses them in relation to prior literature and theory. The chapter reports the descriptive statistics and correlation matrix, presents the two baseline regression models in standard academic form, reports the extended models and the robustness checks, and states whether each hypothesis is supported. It then interprets the results, giving particular attention to any divergence between the sustainability and the financial performance streams and to the behaviour of the critical mass specification relative to the proportional measure.

Chapter 6 concludes the thesis. It summarises the contributions of the study, sets out the theoretical, managerial and policy implications of the findings for regulators, investors and banking institutions, acknowledges the limitations of the research design, and offers recommendations for further work on board diversity, ESG performance and governance in the banking sector.

Chapter 2. Literature Review

This chapter reviews the theoretical and empirical literature regarding corporate governance, board gender diversity, ESG performance, financial performance, and institutional differences in the banking sector. It discusses the development of ESG and gender diversity research, as well as how board composition influences sustainability and financial outcomes. The chapter also examines cross-country differences in governance practices and their impact on ESG-related performance.

2.1 Corporate Governance: Concept, Development, and Role in Banking Firms

Corporate governance is a fundamental concept in corporate finance and management literature that explains how corporations are structured, directed, and controlled (Abdullah & Tursoy, 2023). It provides the system through which firms establish accountability, transparency, and decision-making processes between different stakeholders, including shareholders, boards of directors, management, regulators, and society at large. Over time, corporate governance has evolved from a narrow focus on shareholder protection to a broader framework that incorporates sustainability, ethical responsibility, and stakeholder engagement (Akbar, 2024).

In the context of this study, corporate governance forms the institutional foundation through which board composition influences organizational outcomes. In particular, it provides the structural environment within which gender diversity on corporate boards may shape environmental, social, governance (ESG) outcomes and financial performance in banking institutions (Menicucci & Paolucci, 2022a). The board of directors, as the central governance mechanism, plays a critical role in determining strategic direction, risk oversight, and organizational accountability (Sari, 2023). Therefore, governance quality is closely linked to both sustainability performance and financial outcomes.

In banking firms, corporate governance is especially important due to the sector's systemic relevance (Wali et al., 2023). Banks are highly regulated institutions that manage public deposits, allocate financial resources, and support economic growth (Challoumis, 2024). As a result, governance failures in banking institutions can have severe consequences not only for individual firms but also for financial system stability and the broader economy. This makes governance structures in banking firms more complex, more regulated, and more sensitive to board composition compared to non-financial firms.

2.1.1 Evolution of Corporate Governance Systems

The development of corporate governance systems has been shaped by changes in economic structures, financial globalization, regulatory reforms, and corporate scandals (Hossain et al., 2024). In its early form, corporate governance primarily focused on maximizing shareholder wealth and ensuring managerial accountability through financial performance monitoring (Trivedi et al., 2024).

However, several major corporate failures and financial crises have significantly transformed governance thinking. High-profile scandals such as Enron and WorldCom revealed serious weaknesses in board oversight, internal controls, and executive accountability (O. K. Akinsola, 2025). Similarly, the 2008 Global Financial Crisis exposed systemic failures in risk governance, particularly within financial institutions, where excessive risk-taking and weak board supervision contributed to widespread instability (Kaszowska-Mojša, 2026).

In response, regulatory bodies and international organizations introduced more stringent governance frameworks. Institutions such as the OECD developed governance principles emphasizing transparency, accountability, fairness, and responsibility (Ahmed et al., 2025). These reforms strengthened board independence, improved disclosure requirements, and reinforced risk management systems. More recently, corporate governance has expanded

beyond financial oversight to include environmental and social responsibility. The emergence of ESG principles reflects a broader shift in expectations, where firms are required to consider not only profitability but also sustainability and social impact (Chopra et al., 2024).

Another important evolution in governance systems is the increasing emphasis on board diversity. Diversity, particularly gender diversity, is now widely recognized as a governance enhancement mechanism (Muhammad, 2025). It is argued that diverse boards reduce groupthink, improve problem-solving, and enhance the ability of firms to respond to complex environmental and social challenges.

2.1.2 Corporate Governance in Financial and Banking Institutions

Corporate governance in banking institutions is more complex and critical than in most other sectors due to the central role banks play in the economy. Banks serve as financial intermediaries, facilitate capital allocation, manage credit systems, and contribute to economic growth (Amali & Ejila, 2023). Because of this systemic importance, governance failures in banks can have widespread consequences that extend beyond individual firms.

Banks operate under strict regulatory frameworks due to their high leverage, exposure to risk, and reliance on public deposits (Yahaya, 2026d). These characteristics make effective governance essential for ensuring financial stability, transparency, and risk control. Unlike non-financial firms, banking institutions face greater scrutiny from regulators and stakeholders, requiring stronger governance structures (Erben Yavuz et al., 2024).

The importance of governance in banking became especially evident during the 2008 financial crisis, where weaknesses in board oversight, excessive risk-taking, and misaligned incentives led to severe financial instability (Duffy, 2025). As a result, banking governance reforms have focused heavily on strengthening board responsibilities, improving risk management systems, and enhancing transparency (Wali et al., 2023). In recent years, ESG

considerations have become increasingly integrated into banking governance. Financial institutions are now expected to support sustainable development through responsible lending practices, green financing initiatives, and ethical investment strategies. This has expanded the role of boards beyond financial monitoring to include sustainability oversight.

Within this context, board composition plays a central role in shaping governance effectiveness. A diverse board is expected to improve oversight quality, enhance risk awareness, and strengthen decision-making processes (Sari, 2023). Gender diversity, in particular, is increasingly seen as an important factor in improving both governance quality and sustainability orientation in banking firms (Galletta et al., 2022).

2.1.3 Role of Board of Directors in Corporate Governance

The board of directors represents the highest internal governance body within a corporation and is responsible for overseeing management, setting strategic direction, and ensuring accountability (O. K. Akinsola & Taofeek, 2025). The board acts as a bridge between shareholders and management, ensuring that organizational decisions align with stakeholder interests and long-term objectives (Trivedi et al., 2024).⁹

According to Githaiga et al. (2022) and Amin & Yahaya (2025), boards perform several key governance functions. First, they provide monitoring and oversight of managerial behavior, helping to reduce agency conflicts and ensure accountability. Second, they contribute to strategic decision-making by evaluating business strategies, approving investments, and guiding long-term planning. Third, they oversee risk management systems, which is particularly important in banking firms where financial risks are complex and significant. Fourth, boards ensure compliance with legal, ethical, and regulatory requirements. Beyond these formal responsibilities, boards also influence organizational culture and ethical standards.

They shape corporate values, sustainability priorities, and governance practices that affect how firms interact with stakeholders and society.

Board composition is a key determinant of board effectiveness. In particular, diversity within the boardroom is increasingly recognized as an important governance factor. Gender diversity contributes to broader perspectives, improved communication, and enhanced decision-making quality (Saleh et al., 2025). Female directors are often associated with stronger ethical sensitivity, higher attention to detail, and greater concern for stakeholder welfare (Najaf et al., 2025). These characteristics can improve board discussions and strengthen governance outcomes. In addition, gender-diverse boards are less likely to suffer from groupthink and more likely to consider a wider range of strategic alternatives.

2.1.4 Governance Mechanisms and Firm Performance

Corporate governance mechanisms refer to the structures and processes that ensure effective control, monitoring, and direction of corporate activities. These mechanisms include board structure, ownership concentration, audit systems, executive compensation schemes, regulatory frameworks, and disclosure practices (Sarhan & Al-Najjar, 2023). Among these mechanisms, board structure is one of the most influential determinants of firm performance (Asare et al., 2023). A well-structured governance system improves efficiency, reduces agency costs, and enhances strategic decision-making quality.

The relationship between governance mechanisms and firm performance can be explained through several theoretical perspectives. Agency theory suggests that governance mechanisms reduce conflicts between managers and shareholders, thereby improving efficiency and profitability (Almashhadani, 2023). Resource dependence theory argues that boards provide access to external resources, networks, and expertise that enhance firm performance (Akram & Abrar Ul Haq, 2022). Stakeholder theory emphasizes that firms with

strong governance systems are better able to manage stakeholder relationships, leading to long-term sustainability and legitimacy (Kalra, 2024).

Within this framework, board diversity is increasingly recognized as an important governance mechanism. Gender diversity enhances cognitive variety within boards, improves problem-solving capabilities, and strengthens oversight functions (Laique et al., 2023; Saleh et al., 2025). These improvements in governance quality may influence both sustainability related outcomes and financial performance, particularly in complex and regulated industries such as banking.

2.1.5 Governance Challenges in the Banking Sector

Banking institutions continue to face several structural and operational challenges. One major challenge is the complexity of risk management. Banks are exposed to multiple types of financial risks, including credit risk, liquidity risk, market risk, and operational risk (Siraj et al., 2024). Effective governance requires boards to understand and monitor these risks, but in practice, boards may face information asymmetry and technical limitations. Another challenge is balancing financial performance with sustainability objectives. Banks are under increasing pressure to generate profits while also supporting ESG goals such as environmental sustainability and social responsibility (Pyka et al., 2025). This creates a tension between short-term financial returns and long-term sustainable value creation.

A further challenge is limited diversity in board composition. In many banking institutions, women remain underrepresented in leadership positions (Al Mullahi, 2022). This limits the potential benefits of cognitive diversity and reduces the effectiveness of board decision-making processes. Cultural and institutional factors also play a significant role in shaping governance practices (Shaikh, 2024). In some countries, traditional norms and structural barriers restrict female participation in corporate leadership, which may reduce the

effectiveness of gender diversity initiatives. Lastly, increasing regulatory pressure adds another layer of complexity. Banks are required to comply with stricter ESG disclosure requirements, risk management standards, and governance regulations (Schimperna & Loizzo, 2022). This requires boards to continuously adapt and integrate new expectations into corporate decision-making processes.

2.2 Board Gender Diversity: Concept, Development, and Importance

Board gender diversity has become one of the most widely discussed topics in corporate governance literature in recent decades (Laique et al., 2023). It reflects the increasing recognition that diversity in leadership structures is not only a matter of equality and fairness, but also a key determinant of governance quality, organizational effectiveness, and sustainable performance. In the context of corporate boards, gender diversity refers to the inclusion and representation of women in decision-making positions at the highest level of corporate governance (Khatib et al., 2023).

Board gender diversity refers to the proportion and presence of women serving as members of corporate boards of directors. It represents the extent to which women are included in top-level governance structures where strategic decisions, risk management, and corporate policies are formulated (T. Ma & Liu, 2025). From a governance perspective, gender diversity is a dimension of board composition that reflects cognitive, experiential, and behavioral differences among board members. It goes beyond numerical representation and includes the influence of female directors on board discussions, decision-making quality, and organizational priorities.

The concept is strongly linked to several theoretical perspectives. From agency theory, gender diversity is expected to improve board monitoring by increasing independence and reducing managerial opportunism. From resource dependence theory, female directors

contribute additional human capital, social capital, and external networks that enhance board effectiveness (Mardini & Elleuch Lahyani, 2024). From stakeholder theory, women directors are often associated with greater sensitivity toward social and environmental issues, which aligns with ESG-oriented governance (Alahdal et al., 2026).

The growing interest in board gender diversity is closely linked to broader global movements toward inclusiveness, sustainable development, and responsible corporate behavior. In modern governance systems, firms are no longer evaluated solely based on financial performance, but also on how they manage environmental, social, and governance (ESG) issues (Moussa et al., 2024). Within this context, gender diversity has emerged as an important governance attribute that may influence board effectiveness, corporate ethics, risk-taking behavior, and sustainability orientation (Alhassan & Al Doghan, 2022).

In banking firms, board gender diversity is particularly relevant due to the sector's high exposure to risk, regulatory oversight, and stakeholder expectations. Diverse boards are believed to improve oversight quality and strengthen decision-making processes, which may lead to better ESG performance and more stable financial outcomes (Yahaya, 2025).

2.2.1 Evolution of Gender Diversity in Corporate Boards

The evolution of gender diversity in corporate boards reflects broader social, economic, and institutional changes across the world. Historically, corporate leadership structures were dominated almost exclusively by men due to cultural norms, educational inequalities, and limited access to professional opportunities for women (Adongo et al., 2023). Over time, several global developments have contributed to increasing female participation in corporate leadership. The rise of gender equality movements, changes in labor market participation, and improved access to education for women have significantly expanded the pool of qualified female professionals (Gugan et al., 2024).

In addition, corporate governance reforms and regulatory interventions have played a major role in promoting board gender diversity. Many countries introduced voluntary guidelines and mandatory quotas to increase female representation on corporate boards (Atinc et al., 2022). The evolution of gender diversity is also closely linked to the growing importance of ESG frameworks. As firms are increasingly evaluated based on sustainability and ethical performance, gender diversity has become a key indicator of governance quality. Investors and institutional stakeholders now consider board diversity as part of responsible investment strategies (Keisse & Jaafar, 2025).

Despite these developments, progress remains uneven across regions and industries. While developed countries have achieved relatively higher levels of female board representation, many emerging economies still exhibit low levels of gender diversity in corporate leadership, particularly in sectors such as banking and finance.

2.2.2 Women Representation in Corporate Leadership

Women's representation in corporate leadership has increased gradually over the past few decades, but it remains disproportionately low compared to men (Kumar, 2025). Although women make up a significant portion of the global workforce and university graduates, their presence in senior executive roles and board positions is still limited. In corporate boards, women are often underrepresented due to historical, structural, and institutional factors (Ingersoll et al., 2024). Even in firms that have adopted diversity policies, female representation is sometimes symbolic rather than substantive, meaning that women are present but may have limited influence in decision-making processes (Hamplová et al., 2022).

The concept of “tokenism” is often used in the literature to describe situations where a small number of women are included on boards without meaningful participation (Bhardwaj et al., 2024). However, research suggests that when female representation reaches a critical mass,

typically around three or more members, their influence on board dynamics becomes more significant (Lefley & Janeček, 2024). In banking firms, women's representation is particularly important due to the sector's complexity and risk sensitivity. Female directors may contribute to more cautious risk assessment, improved ethical standards, and stronger stakeholder orientation, which are important for both ESG outcomes and financial stability (Qawasmeh et al., 2026).

2.2.3 Barriers to Female Participation in Boards

Several barriers continue to limit female participation in corporate boards. One major barrier is the “glass ceiling” effect, which refers to invisible structural and cultural obstacles that prevent women from advancing to top leadership positions (Taparia & Lenka, 2022). These barriers are often embedded in organizational cultures, recruitment practices, and informal networks that favor male candidates.

Another barrier is limited access to professional networks and social capital (Allemand et al., 2022). Board appointments are often influenced by informal networks and relationships, where women may have less representation compared to men (Hamplová et al., 2022). This reduces their opportunities for board selection. Cultural and societal norms also play a significant role. In many societies, traditional gender roles still assign women primary responsibility for household and caregiving duties (Pinho & Gaunt, 2024). This reduces the time and flexibility required to pursue high-level corporate positions.

In addition, gender bias in leadership evaluation can affect board appointments (Schoonjans et al., 2024). Women may be perceived as less suitable for leadership roles in high-risk or financially complex industries such as banking, despite evidence of their competence and effectiveness (Luh, 2025). Structural barriers within corporate governance systems also persist (Hamplová et al., 2022). Lack of transparent recruitment processes, limited mentorship

opportunities, and insufficient diversity policies further restrict women's access to board positions.

2.2.4 Benefits of Gender-Diverse Boards

Gender-diverse boards provide several potential benefits that enhance corporate governance quality and organizational performance (Alhassan & Al Doghan, 2022). One key benefit is improved decision-making quality. Diversity in gender leads to diversity in perspectives, cognitive approaches, and problem-solving strategies (Nyamae, 2024). This reduces groupthink and enhances the board's ability to evaluate complex issues. Another important benefit is stronger monitoring and governance effectiveness. Research suggests that female directors tend to be more active in board meetings, ask more critical questions, and pay greater attention to detail. This improves oversight and reduces agency problems.

Gender diversity is also associated with improved ethical standards and corporate responsibility (Chang et al., 2024). Women directors are often linked to higher sensitivity toward environmental and social issues, which can lead to stronger ESG performance and better sustainability practices (Issa & Hanaysha, 2023). In addition, gender-diverse boards may improve risk management practices. Studies suggest that female directors tend to adopt more cautious and conservative risk strategies, which is particularly important in banking institutions where excessive risk-taking can lead to financial instability. Finally, gender diversity can enhance corporate reputation and investor confidence. Firms with more diverse boards are often perceived as more transparent, inclusive, and socially responsible, which may attract long-term investors.

2.2.5 Criticism and Limitations of Board Gender Diversity Policies

Despite the widely recognized benefits of gender diversity, several criticisms and limitations have been discussed in the literature. One criticism is that gender diversity may become symbolic rather than substantive (Siow, 2023). In some cases, firms appoint female directors to comply with regulations or social expectations without giving them meaningful influence in decision-making processes. Another limitation is the potential lack of relevant experience in some cases (Santucci et al., 2023). Critics argue that rapid implementation of diversity quotas may lead to the appointment of less experienced directors (Rixom et al., 2023). However, this argument is increasingly challenged by evidence showing that many female directors possess strong professional qualifications.

There is also debate about the direct impact of gender diversity on financial performance. Some studies find weak or mixed results, suggesting that the benefits of diversity may depend on institutional context, industry type, and board effectiveness (Hazaea et al., 2023). Additionally, cultural resistance in some countries may limit the effectiveness of gender diversity policies (Tildesley et al., 2022). In environments where traditional norms dominate, female directors may face challenges in influencing board decisions. Finally, the effectiveness of gender diversity depends on whether it is accompanied by broader governance reforms (Andrews, 2025). Without supportive governance structures, the impact of gender diversity may be limited.

2.2.6 Gender Diversity Policies and Global Trends

Globally, gender diversity in corporate boards has been promoted through a combination of voluntary initiatives, regulatory reforms, and institutional investor pressure. In Europe, countries such as Norway have implemented mandatory gender quotas for corporate boards (Ferrary, 2024; Martin, 2022). These policies have significantly increased female

representation in leadership positions. Institutional investors and ESG rating agencies also play an important role in encouraging gender diversity (Fisch, 2022).

In the banking sector, global regulatory bodies increasingly emphasize diversity as part of governance reforms (Yahaya, 2025). International organizations and central banks have recognized that diversity improves risk management and governance quality. ESG frameworks have further strengthened global gender diversity trends. Gender diversity is now widely included in ESG rating methodologies, making it an important factor for institutional investors and financial analysts (Wasiuzzaman & Subramaniam, 2023). Despite progress, global gender diversity remains uneven. Developed countries generally exhibit higher levels of female board representation, while emerging economies continue to face structural and cultural barriers (Singhania & Saini, 2023). Overall, global trends indicate a steady shift toward more inclusive governance structures, where gender diversity is increasingly recognized as an essential component of sustainable corporate governance.

2.2.7 Critical Mass and the Threshold of Female Representation

A distinct strand of the diversity literature argues that the consequences of female board representation depend not on presence alone but on relative numbers. The origin of this argument lies in Kanter (1977), whose study of proportions in organisations distinguished between skewed groups, in which a minority constitutes less than roughly fifteen per cent of members, tilted groups, and balanced groups. In skewed groups, minority members are perceived through the lens of their category rather than as individuals; they are subject to heightened visibility, to contrast effects that exaggerate difference, and to assimilation into stereotypical roles. Kanter's central claim was that these dynamics are a function of proportion rather than of the characteristics of the individuals concerned, and that they attenuate as the minority grows.

Applied to corporate boards, this reasoning implies that a single woman director, or even two, may have limited capacity to alter board process. Konrad, Kramer and Erkut (2008), drawing on interviews with women directors and chief executives, identified three as the threshold at which the presence of women ceases to be treated as exceptional and their contributions are evaluated on their merits rather than attributed to their gender. Below that threshold, women directors reported being positioned as representatives of a constituency; at or above it, they described being able to raise issues without being marginalised and to influence the agenda of board discussion.

Empirical work has broadly supported the threshold logic while refining it. Torchia, Calabro and Huse (2011), studying Norwegian firms, found that the effect of women directors on organisational innovation became statistically significant only when at least three women were present, and that smaller numbers produced no detectable effect. Joecks, Pull and Vetter (2013) reported a U-shaped relationship between female representation and firm performance in German firms: performance declined as the first women were appointed and improved only once representation reached approximately thirty per cent, a proportion consistent with three women on a typical board. Their interpretation is that token representation introduces the costs of demographic difference, such as reduced group cohesion and slower consensus formation, without delivering the informational benefits that only substantive representation can produce.

The critical mass argument has direct implications for the inconsistency of empirical findings documented throughout this chapter. Studies that model female representation as a continuous linear variable implicitly assume that each additional woman contributes equally, which the threshold literature disputes. Where samples contain a majority of boards below the threshold, a linear specification will average across the negative or null region and the positive region, potentially yielding an insignificant coefficient even where a threshold effect is present. This study therefore retains the proportional measure as its primary proxy for comparability

with prior work, while estimating a critical mass specification separately in order to test whether the association is better characterised as a threshold effect.

2.2.8 Measuring Board Gender Diversity

Three operationalisations of board gender diversity dominate the empirical literature, and the choice among them carries analytical consequences. The most common is the proportion of women on the board, calculated as the number of female directors divided by total board size. Its advantages are comparability across boards of different sizes, sensitivity to marginal changes in composition, and widespread use, which facilitates comparison with prior studies. Its principal limitation is the linearity assumption discussed in the preceding section.

The second is a binary critical mass indicator, taking the value of one where three or more women serve on the board and zero otherwise. This measure operationalises the threshold argument directly and is straightforward to interpret. It discards information about variation above and below the threshold, however, and its appropriateness depends on board size: three women on a board of six represents a materially different situation from three women on a board of eighteen. The third is the Blau index of heterogeneity, which captures the evenness of the gender distribution and reaches its maximum at parity. The Blau index is well suited to comparisons of overall board heterogeneity but is less directly interpretable in policy terms, since it does not distinguish between boards that are predominantly male and boards that are predominantly female.

Because the proportional measure and the critical mass indicator are highly correlated by construction, entering both in a single specification would introduce multicollinearity and render the individual coefficients uninterpretable. Accordingly, this study adopts the proportion of women directors as its primary measure and estimates the critical mass indicator as an

alternative specification within the robustness analysis, with the Blau index employed as a further check on the sensitivity of the results to the choice of proxy.

2.3 Theoretical Foundations of Board Gender Diversity and Firm Performance

The relationship between board gender diversity and firm outcomes is grounded in multiple complementary theoretical frameworks that originate from corporate governance, organizational behavior, sociology, and behavioral economics (Laique et al., 2023; S. Pandey & Kumar, 2020). Rather than being a standalone governance characteristic, gender diversity in corporate boards is increasingly conceptualized as a structural mechanism that influences how information is processed, how decisions are made, and how firms interact with external stakeholders (Kanadlı et al., 2022).

In modern governance literature, firm performance is no longer interpreted purely as financial outcomes such as profitability or return on assets (Farooq et al., 2022). Instead, performance is understood as multidimensional, including financial stability, risk management efficiency, ESG engagement, and long-term sustainability. Theoretical frameworks used in this study explain how gender diversity at the board level may shape these outcomes through different governance channels. The following sections elaborate four key theories that form the conceptual foundation of this research: agency theory, stakeholder theory, resource dependence theory, and upper echelons theory.

2.3.1 Agency Theory and Board Monitoring Role

Agency theory by Jensen and Meckling on 1976 remains one of the most dominant theoretical foundations in corporate governance research (Al-Faryan, 2024). It conceptualizes the firm as a contractual arrangement between principals (shareholders) and agents (managers), where separation of ownership and control creates inherent conflicts of interest (Tipu & Yousaf,

2022). Managers, as agents, may not always act in the best interest of shareholders due to self-interest, information asymmetry, and moral hazard.

This divergence leads to what is commonly referred to as the agency problem, which manifests in excessive risk-taking, inefficient resource allocation, empire-building behavior, and reduced shareholder value. To mitigate these issues, governance mechanisms are established to monitor managerial behavior and align interests. The board of directors represents the most important internal governance mechanism in this context. It functions as a monitoring body responsible for supervising managerial decisions, approving strategic actions, and ensuring accountability (Benichou, 2024).

Within agency theory, board gender diversity can be interpreted as an enhancement to monitoring effectiveness. Female directors are often associated in empirical literature with greater independence from management, higher attendance rates, and more active participation in board discussions (Maji & Saha, 2024). These characteristics improve the board's ability to detect managerial opportunism and reduce agency costs.

Furthermore, gender diversity introduces heterogeneity in cognitive processing, which reduces conformity pressure and strengthens critical evaluation of managerial proposals (Muhammad, 2025). This is particularly important in banking firms, where complex financial products, leverage structures, and risk-taking incentives can intensify agency conflicts. From an agency theory perspective, gender diversity is therefore not merely symbolic representation, but a governance mechanism that strengthens monitoring intensity, improves transparency, and enhances accountability structures within the firm (Yahaya, 2026b).

2.3.2 Stakeholder Theory and Social Responsibility

Stakeholder theory by Freeman on 1984 expands the analytical focus of corporate governance beyond shareholders to include all parties affected by corporate activities (Awa et

al., 2024). These stakeholders include employees, customers, suppliers, regulators, communities, and the environment. According to this perspective, firms exist within a network of social relationships and are responsible not only for profit generation but also for broader societal value creation (Al Mahameed & Abras, 2025).

Stakeholder theory fundamentally redefines firm performance as a balance between financial returns and social legitimacy (Al-Shammari et al., 2022). Firms that fail to consider stakeholder interests may face reputational damage, regulatory sanctions, and long-term value erosion (Kanwal et al., 2025). Within this theoretical framework, board gender diversity plays a significant role in shaping stakeholder-oriented governance behavior. Female directors are frequently associated with higher sensitivity toward ethical considerations, social welfare, environmental sustainability, and corporate responsibility (Campopiano et al., 2023). These tendencies are not deterministic but are often explained through social role theory and differences in socialization experiences. As a result, gender-diverse boards are more likely to integrate ESG considerations into strategic decision-making. This includes stronger attention to environmental risks, improved employee relations, enhanced customer protection, and more transparent governance practices.

In the banking sector, stakeholder theory is particularly relevant due to the central role banks play in economic systems. Banks influence credit allocation, investment flows, and financial inclusion (Boachie et al., 2023). Their decisions have direct implications for economic development and environmental sustainability. Therefore, stakeholder-oriented governance in banks is not optional but essential for maintaining legitimacy and long-term stability (Chronopoulos et al., 2023). From this perspective, board gender diversity enhances the firm's ability to balance competing stakeholder demands, thereby improving ESG performance and reinforcing long-term sustainability (Kampoowale et al., 2025; Wasiuzzaman & Subramaniam, 2023).

2.3.3 Resource Dependence Theory and Board Resources

Resource dependence theory by Pfeffer and Salancik on 1978 provides a structural explanation of how organizations interact with their external environment (Öztürk & Bağış, 2025). The theory argues that firms are not self-sufficient but depend on external resources for survival and growth, including information, capital, legitimacy, and networks (H. Chen et al., 2025). Organizations reduce uncertainty and dependence by establishing relationships with external actors. The board of directors plays a critical role in this process by linking the firm to external environments and facilitating access to essential resources (Salim, 2023).

Board members contribute value not only through monitoring but also through resource provision. These resources include professional expertise, industry knowledge, strategic guidance, and social networks. Board gender diversity enhances this resource function by broadening the range of experiences, perspectives, and external linkages available to the firm (Attia et al., 2024). Female directors often bring different professional trajectories, educational backgrounds, and institutional connections compared to their male counterparts (Najaf et al., 2025). This diversification increases the board's collective human capital and social capital. From a strategic perspective, diverse boards are better equipped to understand complex environmental changes, including regulatory shifts related to ESG standards, technological transformation, and sustainability pressures.

In banking institutions, resource dependence theory is particularly relevant because banks operate in highly regulated and information-intensive environments (Öztürk & Bağış, 2025). Access to diverse perspectives improves decision-making quality in areas such as credit risk assessment, sustainability financing, and regulatory compliance. Thus, gender diversity strengthens the board's resource acquisition capacity, improves environmental adaptation, and enhances strategic responsiveness.

2.3.4 Upper Echelons Theory and Leadership Diversity

Upper echelons theory by Hambrick and Mason on 1984 posits that organizational outcomes reflect the cognitive bases, values, and experiences of top executives (S. Ma et al., 2022). Because executives operate under bounded rationality, they interpret situations through their personal backgrounds and psychological orientations (Janani et al., 2022). This theory implies that firm-level decisions are a reflection of top management characteristics, including demographic attributes such as gender, age, education, and professional experience. Board gender diversity therefore becomes an important determinant of strategic direction because it alters the cognitive composition of decision-making groups (Adeola & Ajasa-Adeoye, 2025). Female directors contribute to diversity in interpretation, problem framing, and strategic evaluation (Yousuf & Aldamen, 2021).

Research suggests that women may exhibit different cognitive styles, including greater attention to detail, more comprehensive information processing, and stronger consideration of long-term consequences (Buallay et al., 2022; Hazaea et al., 2023; Wang & Yang, 2025; Yousuf & Aldamen, 2021). These differences influence how boards evaluate risk, allocate resources, and prioritize strategic initiatives. In banking firms, upper echelons theory is particularly relevant because decisions often involve high uncertainty, regulatory complexity, and systemic risk considerations. Diverse cognitive perspectives reduce the likelihood of strategic blind spots and improve adaptive decision-making. Therefore, gender diversity at the board level influences not only governance structure but also the cognitive architecture through which strategic decisions are made.

2.4 ESG Performance: Concept, Development, and Measurement

ESG refers to a set of non-financial criteria used to evaluate a firm's sustainability and ethical impact across three dimensions: environmental responsibility, social responsibility, and governance quality (Ahmad et al., 2024). The concept originates from the broader idea of corporate social responsibility (CSR) but has evolved into a more structured and quantifiable framework used by investors, regulators, and rating agencies (Kandpal et al., 2024). The environmental dimension focuses on how firms manage ecological impacts such as carbon emissions, energy consumption, waste management, and climate change mitigation (Ahmad et al., 2024). The social dimension captures relationships with employees, customers, suppliers, and communities, including issues such as labor practices, diversity, human rights, and product responsibility (Becchetti et al., 2022). The governance dimension refers to internal corporate structures such as board composition, executive compensation, shareholder rights, and transparency mechanisms (Kampoowale et al., 2025; Moussa et al., 2024).

From a theoretical perspective, ESG represents an extension of stakeholder theory, which argues that firms must consider the interests of multiple stakeholders rather than focusing solely on shareholders (Kulova & Nikolova-Alexieva, 2023). ESG also reflects institutional pressures (Singhania & Saini, 2023), where firms adapt their behavior in response to regulatory expectations, investor demands, and social norms. In this context, ESG performance is not only an ethical construct but also a strategic one, influencing firm legitimacy, risk exposure, and long-term financial sustainability.

2.4.1 History and Evolution of ESG

The evolution of ESG can be traced back to early concepts of socially responsible investing (SRI), which emphasized ethical investment decisions based on moral or religious values. Over time, this approach evolved into corporate social responsibility (CSR), where

firms voluntarily integrated social and environmental concerns into their business operations (Wirba, 2024). The formal ESG framework gained prominence in the early 2000s, particularly after the United Nations Global Compact and the publication of the “Who Cares Wins” report in 2004, which highlighted the financial relevance of environmental, social, and governance factors in investment decisions (AlDerbesti, 2024). Since then, ESG has evolved into a mainstream investment standard widely adopted by institutional investors.

The global financial crisis of 2008 further accelerated ESG integration by exposing weaknesses in corporate governance and risk management systems (Dmuchowski et al., 2023). This led to increased attention on governance quality as a key determinant of financial stability. More recently, climate change concerns, social inequality, and regulatory reforms have reinforced the importance of ESG in financial markets. In banking and financial institutions, ESG has become an essential component of sustainable finance frameworks (Lin, 2024). Central banks and regulators increasingly require financial institutions to integrate ESG risks into lending decisions, risk management systems, and disclosure practices.

2.4.2 Environmental, Social, and Governance Components

ESG performance is typically divided into three interrelated components, each capturing different aspects of corporate behavior and sustainability outcomes. The environmental component focuses on a firm’s impact on natural resources and ecological systems (Kandpal et al., 2024). This includes carbon emissions, energy efficiency, pollution control, climate risk management, and environmental innovation. In banking firms, environmental performance is often reflected through green financing, sustainable lending policies, and climate risk assessment in credit portfolios (Mirza et al., 2023).

The social component evaluates a firm’s relationships with stakeholders, particularly employees, customers, and communities (Ardiansyah, 2024). Key issues include labor

conditions, workforce diversity, gender equality, human capital development, and community engagement. Social performance is closely linked to organizational culture and human resource practices (Widarko & Anwarodin, 2022). The governance component refers to internal control systems and decision-making structures. It includes board composition, independence, executive compensation, audit quality, transparency, and shareholder rights. Governance quality is particularly relevant in this study because board gender diversity directly falls within this dimension and is often used as a proxy for improved governance practices. Together, these three dimensions provide a comprehensive view of corporate sustainability and are often aggregated into composite ESG scores by rating agencies.

2.4.3 ESG Ratings and Measurement Systems

ESG performance is commonly measured using ESG ratings provided by specialized agencies such as MSCI, Refinitiv, Sustainalytics, and Bloomberg. These ratings aggregate multiple ESG indicators into a standardized score that allows comparability across firms and industries. However, ESG measurement remains methodologically complex due to differences in data sources, weighting schemes, and evaluation criteria across rating agencies (Y. Liu et al., 2023). As a result, ESG ratings may vary significantly depending on the provider, leading to concerns about consistency and reliability. Despite these limitations, ESG ratings are widely used in academic research as proxy variables for sustainability performance (Beckmann et al., 2014; Mateev et al., 2026; Olanrewaju et al., 2024). They are particularly useful in empirical studies because they provide quantitative measures that can be statistically analyzed.

In banking firms, ESG ratings often reflect governance quality, risk management practices, and sustainability integration in financial decision-making (Abramova, 2024; Menicucci & Paolucci, 2022a). Higher ESG scores are generally interpreted as indicators of better corporate responsibility and lower long-term risk exposure. The use of ESG ratings in

this study allows for the empirical examination of how board gender diversity translates into measurable sustainability outcomes.

2.4.4 Importance of ESG in Modern Financial Markets

ESG performance has become increasingly important in modern financial markets due to its influence on investment decisions, risk assessment, and corporate valuation (Cohen, 2023). Institutional investors now integrate ESG factors into portfolio selection as part of responsible investment strategies (Balp & Strampelli, 2022). A growing body of literature suggests that firms with strong ESG performance tend to experience lower cost of capital, reduced risk exposure, and improved long-term financial performance (Naseer et al., 2025). ESG is also associated with higher investor confidence and stronger market reputation.

In banking firms, ESG is particularly important because banks are exposed to systemic risks and play a key role in financing sustainable development (Aevoae et al., 2023). ESG integration in banking helps improve credit risk assessment, enhance regulatory compliance, and support long-term financial stability (Pyka et al., 2025). Moreover, ESG has become a key factor in global capital allocation decisions. Investors increasingly prefer firms with strong ESG credentials, which influences stock performance and access to financing (Rau & Yu, 2024).

2.5 Financial Performance in Banking: Concept, Determinants, and Measurement

The preceding sections defined corporate governance, board gender diversity and ESG performance as constructs. Financial performance, which serves as the final dependent variable of this study, requires equivalent treatment, and the banking context makes that treatment less straightforward than it may appear. Banks differ from non-financial firms in that leverage is not primarily a financing choice but the substance of the business: deposits are simultaneously a funding source and a product. Measures of performance developed for industrial firms therefore

do not transfer without qualification, and the determinants of bank profitability form a distinct literature that must inform the specification of any empirical model in this field.

2.5.1 Measuring Financial Performance in Banking Firms

Two families of performance measures are used in banking research. Accounting measures, principally return on assets and return on equity, are derived from audited financial statements and are available for listed and unlisted institutions alike. Market measures, such as Tobin's Q or market-to-book ratios, incorporate investor expectations but require an actively traded security and are sensitive to market-wide sentiment that is unrelated to managerial decisions.

Return on assets, defined as net income after tax divided by average total assets, is the measure most frequently adopted in cross-country banking studies. Its principal advantage in this setting is that it is comparatively insensitive to differences in capital structure. Return on equity, by contrast, mechanically rises with leverage, so that a thinly capitalised bank may report a superior return on equity while being demonstrably more fragile; comparing return on equity across jurisdictions with different capital requirements can therefore be actively misleading. Return on assets also permits comparison between banks that differ in their reliance on off-balance-sheet activity, provided that the asset base is measured consistently. For these reasons this study adopts return on assets as its measure of financial performance, and retains return on equity as a robustness check rather than as a primary specification.

2.5.2 Bank Size as a Determinant of Performance

Bank size, conventionally measured as the natural logarithm of total assets, is among the most consistently included determinants in the banking performance literature. Its expected effect is ambiguous in sign. Larger institutions may benefit from economies of scale in

technology, compliance and funding, from greater diversification of credit and geographic exposure, and from lower funding costs arising from implicit expectations of public support. Against this, large institutions may suffer diseconomies associated with organisational complexity, weaker internal monitoring, and the regulatory burden imposed on systemically important institutions.

Regardless of the direction of the effect, bank size is correlated with board characteristics: larger banks appoint larger boards, attract greater scrutiny from institutional investors and regulators, and are more likely to be subject to diversity guidelines or disclosure obligations. Omitting size from a model that relates board composition to profitability therefore risks attributing to governance an effect that properly belongs to scale.

2.5.3 Capital Structure and Leverage

The relationship between capital and bank performance has been the subject of sustained debate. Under the Modigliani-Miller propositions, capital structure is irrelevant to firm value in frictionless markets; in banking, however, deposit insurance, tax treatment of debt and regulatory capital requirements introduce frictions that make the composition of the balance sheet consequential. The buffer view holds that better-capitalised banks are better placed to absorb losses, face lower funding costs because creditors perceive them as safer, and are less likely to be forced into distressed asset sales.

Berger and Bouwman (2013) provide evidence that capital improves the survival probability and market share of small banks at all times, and of medium and large banks during periods of financial stress. For the purposes of this study, capital structure is captured by the ratio of total equity to total assets, a measure that is available on a comparable basis across jurisdictions and that is not affected by differences in the risk weighting conventions applied to regulatory capital ratios. Higher values of this ratio indicate lower leverage.

2.5.4 Asset Quality and Non-Performing Loans

Asset quality is a direct determinant of bank earnings. Loans that cease to perform generate provisioning expense, absorb management attention, consume capital through higher risk weights, and in many jurisdictions restrict the recognition of accrued interest. The ratio of non-performing loans to gross loans is the standard proxy, and it is reported by supervisors and disclosed in annual reports across most banking systems, although definitions of impairment vary somewhat by jurisdiction.

Berger and DeYoung (1997) established the analytical framework that continues to organise this literature. Testing four hypotheses relating problem loans to cost efficiency, they found support for both a bad luck channel, in which exogenous increases in problem loans raise costs as institutions devote resources to workout activity, and a bad management channel, in which poor underwriting and monitoring generate both high costs and subsequent loan losses. Their finding that the two are jointly determined over time has an important implication for the present study: asset quality is not merely a control for exogenous credit conditions but is itself partly an outcome of governance quality.

This creates a specification tension that should be acknowledged directly. If board composition influences risk appetite and underwriting standards, then the non-performing loan ratio lies partly on the causal path between governance and profitability, and controlling for it will absorb part of the effect under investigation. The alternative, however, is more damaging: omitting asset quality leaves the profitability coefficient open to the objection that it reflects the credit cycle rather than the boardroom. This study therefore includes asset quality in the baseline specification, consistent with the guidance received on model construction, and reports a specification excluding it among the robustness checks so that the sensitivity of the results to this decision is transparent.

2.6 Board Gender Diversity and ESG Performance

The relationship between board gender diversity and Environmental, Social, and Governance (ESG) performance has become an increasingly important topic in corporate governance and sustainable finance literature (Alodat & Hao, 2025). As ESG considerations are now widely incorporated into investment decisions, regulatory frameworks, and corporate reporting standards, attention has shifted toward understanding the governance structures that drive ESG outcomes (Sulkowski & Jebe, 2022). Board gender diversity is commonly viewed as one of the key governance characteristics that may influence a firm's sustainability orientation (Tireksani et al., 2024). Rather than being only a demographic feature, gender diversity reflects differences in experience, cognitive frames, and decision-making approaches at the highest level of corporate governance (Müller-Horn et al., 2024). These differences may affect how firms interpret environmental and social responsibilities and how they respond to external stakeholder pressures.

In banking institutions, this relationship is particularly relevant due to the sector's central role in allocating capital and managing systemic risk. As banks increasingly integrate sustainability considerations into lending and investment decisions, the composition of the board becomes an important determinant of ESG outcomes.

2.6.1 Relationship Between Gender Diversity and ESG

The relationship between board gender diversity and ESG performance is widely discussed in governance literature, although the underlying mechanisms are often explained through multiple theoretical perspectives rather than a single framework (Oyewo, 2024). Two of the most commonly applied theories are stakeholder theory and upper echelons theory.

Stakeholder theory suggests that firms are embedded in a broader social system and therefore have obligations not only to shareholders but also to employees, customers, regulators,

and society (Kalra, 2024). Within this framework, ESG performance reflects the extent to which firms balance these competing stakeholder interests (Meng et al., 2023). Boards with greater gender diversity are often argued to adopt a more inclusive perspective on corporate responsibility, which may lead to stronger consideration of environmental and social outcomes in decision-making processes.

Upper echelons theory provides a complementary explanation by emphasizing the role of top management characteristics in shaping organizational outcomes (Pīpiķe & Gaile-Sarkane, 2025). According to this theory, strategic decisions are influenced by the cognitive bases, values, and experiences of board members (Cristofaro et al., 2023). Gender diversity introduces heterogeneity in these attributes, which may reduce uniform thinking and improve the quality of board deliberations on ESG-related matters. Taken together, these theories suggest that gender-diverse boards may contribute to improved ESG performance through both broader stakeholder orientation and enhanced cognitive diversity in strategic decision-making.

2.7 Board Gender Diversity and Financial Performance

Whereas the preceding section examined the association between board gender diversity and sustainability performance, this section turns to the second outcome of interest, financial performance. The two relationships are treated separately because they rest on partly different theoretical mechanisms and because the empirical evidence differs in character: findings on sustainability outcomes are comparatively consistent in sign, whereas findings on profitability are not. Separating them also mirrors the empirical strategy adopted in Chapter 4, in which each outcome is estimated in its own model against a common set of controls.

2.7.1 Board Gender Diversity and Financial Performance

The relationship between board gender diversity and financial performance has been widely examined in corporate governance literature, although the findings remain mixed across studies and contexts (Hazaea et al., 2023). Financial performance is typically assessed using accounting-based measures such as Return on Assets (ROA), Return on Equity (ROE), and market-based indicators such as Tobin's Q (Fasua, 2025). Among these, ROA is frequently used in banking studies due to its ability to capture operational efficiency and profitability relative to total assets (Fasua, 2025).

Theoretically, the influence of board gender diversity on financial performance is not straightforward. It operates through multiple governance channels, including monitoring effectiveness, strategic decision-making quality, risk management, and resource allocation (Salim, 2023). As a result, the overall effect may vary depending on institutional context, board structure, and industry characteristics, particularly in highly regulated sectors such as banking (Basile et al., 2026).

2.7.2 Gender Diversity and Firm Profitability

Firm profitability represents the fundamental measure of corporate financial performance and reflects the effectiveness with which firms utilize their resources to generate earnings (Daruwala, 2023). In governance literature, profitability is often linked to board effectiveness, managerial oversight, and strategic decision-making quality (Salim, 2023).

From a theoretical perspective, board gender diversity may influence profitability through improved governance processes. Agency theory suggests that more diverse boards can enhance monitoring quality, reduce managerial opportunism, and improve alignment between management and shareholder interests (Ajaegbu & Mmayie, 2025). This, in turn, may contribute to more efficient resource allocation and improved financial outcomes. In addition,

upper echelons theory argues that diversity in board composition leads to variation in cognitive frames and strategic preferences (Pīpiķe & Gaile-Sarkane, 2025). This diversity may improve the quality of strategic decisions by reducing conformity and encouraging more rigorous evaluation of business opportunities.

However, the relationship between gender diversity and profitability is not necessarily linear. In some cases, increased diversity may initially lead to coordination costs or slower decision-making processes, particularly when board members have differing perspectives and approaches (J. Wu et al., 2022). Over time, however, these effects may be offset by improved decision quality and reduced strategic errors.

2.7.3 Gender Diversity and Return on Assets (ROA)

Return on Assets (ROA) is widely used in empirical research as a measure of firm efficiency, particularly in banking studies (Singh et al., 2024). ROA reflects the ability of a firm to generate profits from its asset base and is therefore closely linked to managerial efficiency and operational effectiveness. In the context of board gender diversity, ROA is influenced through several governance mechanisms (Arvanitis et al., 2022). First, improved monitoring associated with diverse boards may reduce inefficiencies and prevent resource misallocation, leading to higher asset productivity. Second, better strategic oversight may enhance capital allocation decisions, particularly in investment and lending activities in banking institutions.

From a behavioral perspective, gender-diverse boards may also contribute to more balanced risk-taking behavior, which can improve financial stability and reduce the likelihood of excessive losses (C. Liu & Wu, 2023). This is particularly relevant in banking, where asset quality and risk exposure directly affect ROA. Nevertheless, the impact of board diversity on ROA may vary depending on firm size, regulatory environment, and the extent to which female directors are actively involved in decision-making processes. As such, ROA outcomes reflect

the combined effect of governance quality, risk management, and operational efficiency (Jallali & Zoghلامي, 2022).

2.7.4 Gender Diversity and Risk Management in Banks

Risk management is a central function in banking institutions and a key determinant of financial performance. Banks are inherently exposed to credit risk, market risk, operational risk, and increasingly, ESG-related risks such as climate risk and social governance risk. Board gender diversity may influence risk management practices through differences in risk perception and decision-making behavior (Menicucci & Paolucci, 2022a). Behavioral theory suggests that individuals differ in their tolerance for risk, and empirical literature often associates female directors with more conservative risk preferences (Guo et al., 2025).

In banking governance, this may translate into more cautious lending policies, stricter credit evaluation standards, and greater attention to downside risk (Kowsar, 2022). Such behavior can reduce the probability of non-performing loans and improve asset quality, thereby supporting financial stability. At the same time, effective risk management does not imply excessive risk aversion. Rather, it involves balanced decision-making that avoids both excessive risk-taking and overly conservative strategies that may limit profitability (Shanmugam et al., 2025). In this sense, gender diversity may contribute to more prudent and stable risk profiles within banking institutions.

2.7.5 Gender Diversity and Decision-Making Efficiency

Decision-making efficiency refers to the ability of boards to evaluate information, deliberate effectively, and make timely and well-informed strategic decisions. Board composition plays a critical role in shaping this process (Akula et al., 2025). From a theoretical perspective, cognitive diversity enhances decision-making quality by introducing different

perspectives, reducing groupthink, and improving problem-solving capabilities (A. Pandey et al., 2024). Gender diversity contributes to this heterogeneity by introducing variation in experience, communication styles, and cognitive approaches (Martins & Sohn, 2022).

However, diversity may also introduce coordination challenges. Boards with higher diversity may require more time to reach consensus due to differences in viewpoints (Krause et al., 2025). This may reduce short-term decision speed but potentially improve long-term decision quality. In banking firms, decision-making efficiency is particularly important due to the complexity and speed of financial markets (Haidari, 2023). Effective boards must balance the need for timely decisions with the need for thorough risk evaluation. Gender-diverse boards may improve this balance by encouraging more structured discussion and careful evaluation of strategic alternatives (Adeola & Ajasa-Adeoye, 2025).

2.7.6 Empirical Studies on Diversity and Financial Performance

Empirical evidence on the relationship between board gender diversity and financial performance remains mixed (Hazaea et al., 2023). Some studies report a positive association, suggesting that firms with higher female board representation tend to perform better financially due to improved governance and risk management practices. Other studies find no significant relationship or even negative effects in certain contexts. These differences may be attributed to variations in institutional environments, industry characteristics, and measurement approaches (Banwo et al., 2022).

Some empirical findings suggest that gender diversity is associated with improved stability and lower risk exposure, which indirectly supports financial performance (Menicucci & Paolucci, 2022b). However, the direct impact on profitability measures such as ROA is less consistent. Overall, empirical literature indicates that the effect of board gender diversity on

financial performance is context-dependent and may be influenced by several moderating factors, including board structure, regulatory pressure, and market conditions.

2.7.7 Inconsistent Evidence in Previous Research

Despite extensive research, the relationship between board gender diversity and financial performance remains inconclusive (Hazaea et al., 2023) . One key explanation for inconsistent findings is that the presence of female directors does not automatically translate into effective influence within the boardroom. In some cases, female directors may face limited participation in strategic decision-making, particularly when they are underrepresented or lack committee leadership roles. Another important issue relates to endogeneity and selection bias. Firms that appoint female directors may already differ systematically from those that do not, particularly in terms of governance quality, corporate culture, or international orientation (Tubik & Herberger, 2024). This makes it difficult to isolate the causal effect of gender diversity on financial outcomes.

Additionally, contextual differences across countries and industries further complicate the relationship. In countries with stronger institutional frameworks, gender diversity may have a more pronounced impact due to better enforcement and governance standards (Trireksani et al., 2024). In contrast, in weaker institutional environments, the effect may be limited. Finally, measurement differences in financial performance indicators and diversity metrics contribute to inconsistent results across studies (Behlau et al., 2024). These limitations suggest the need for more context-specific research, particularly in banking sectors and emerging economies.

2.8 ESG Performance and Financial Performance

The relationship between Environmental, Social, and Governance (ESG) performance and financial performance has become a central debate in corporate finance and sustainability

literature (S. Chen et al., 2023). While traditional financial theory emphasizes profit maximization as the primary objective of firms, contemporary research increasingly recognizes that non-financial factors such as ESG performance may have significant implications for long-term financial outcomes (Awalakki, n.d.).

In this context, ESG performance is often viewed as an indicator of a firm's ability to manage non-financial risks, maintain stakeholder trust, and ensure sustainable value creation. Financial performance, on the other hand, reflects the efficiency and profitability of firm operations (Y. Liu et al., 2022). The interaction between these two dimensions suggests that sustainability and profitability are not necessarily conflicting objectives, but may be mutually reinforcing under certain conditions.

2.8.1 ESG and Corporate Financial Outcomes

ESG performance is widely argued to influence corporate financial outcomes through multiple channels (S. Chen et al., 2023). Firms with strong ESG practices are generally perceived as better managed, less risky, and more forward-looking (Jin et al., 2026). This perception may translate into improved operational efficiency, lower cost of capital, and enhanced financial performance.

From a theoretical perspective, stakeholder theory provides a key explanation for this relationship. Firms that effectively manage stakeholder relationships tend to experience fewer conflicts, lower reputational risks, and greater organizational stability. These factors contribute positively to long-term financial performance. In addition, the resource-based view of the firm (Barney, 1991) suggests that ESG capabilities can be viewed as intangible assets that enhance firm competitiveness. These capabilities include sustainability-oriented governance structures, ethical corporate culture, and effective risk management systems, all of which may contribute to improved financial outcomes (Sancha et al., 2023).

2.8.2 ESG and Firm Value in Banking Sector

In banking institutions, ESG performance plays a particularly important role in shaping firm value. Unlike non-financial firms, banks operate as financial intermediaries and are exposed to both direct operational risks and indirect risks arising from their lending and investment activities (Menicucci, 2025). Strong ESG performance in banks is often associated with better credit allocation practices, improved compliance with regulatory requirements, and reduced exposure to high-risk sectors. This can enhance overall firm stability and contribute to long-term value creation (Alizade, 2025).

From a market perspective, banks with higher ESG scores are often perceived as more resilient and better prepared to manage regulatory and environmental challenges (Conca et al., 2026). This perception can positively influence firm valuation and investor sentiment. Moreover, ESG integration in banking is increasingly linked to sustainable finance strategies, including green lending and responsible investment (Zairis et al., 2024). These activities not only support environmental and social objectives but also create new revenue opportunities, thereby enhancing firm value.

2.8.3 ESG and Risk Reduction Mechanisms

One of the most widely discussed channels through which ESG performance affects financial outcomes is risk reduction (Ding et al., 2024). Firms with strong ESG practices are generally considered to have lower exposure to environmental, social, and governance-related risks. In banking, ESG-related risk management is particularly important due to the sector's sensitivity to credit risk, market volatility, and systemic instability. Poor ESG practices among borrowers can translate into higher default risk, regulatory penalties, and reputational damage for banks (Palmieri & Geretto, 2024).

ESG performance contributes to risk reduction in several ways. Environmental practices reduce exposure to climate-related financial risks. Social practices reduce reputational and operational risks (Agbakwuru et al., 2024). Governance practices enhance internal control and reduce agency conflicts. From a financial perspective, lower risk exposure is associated with greater earnings stability and improved asset quality, which directly contribute to indicators such as Return on Assets (ROA) (Rosario & Mavuri, 2026).

2.8.4 ESG and Investor Confidence

Investor confidence plays a critical role in determining firm financial performance, particularly in capital-intensive sectors such as banking (Hanif & Bajuri, 2026). ESG performance has become an increasingly important factor in investment decision-making, as institutional investors integrate sustainability considerations into portfolio selection (N. Ma, 2023).

Firms with strong ESG performance are generally perceived as more transparent, better governed, and more sustainable in the long term (Kandpal et al., 2024). This perception enhances investor trust and reduces perceived investment risk. From a signalling theory perspective, ESG performance serves as a signal of managerial quality and long-term orientation. High ESG scores may indicate that firms are effectively managing non-financial risks and are less likely to experience future financial distress (Suprabha et al., 2025). In banking firms, investor confidence is especially important due to the sector's reliance on depositor trust and capital market funding. Strong ESG performance can therefore support financial stability by maintaining investor and depositor confidence (K. Akinsola & Taofeek, 2025).

2.8.5 Empirical Evidence on ESG–Financial Performance Link

Empirical studies examining the relationship between ESG performance and financial outcomes have produced mixed but generally positive results (Yu et al., 2024). A substantial number of studies report that firms with higher ESG scores tend to exhibit better financial performance, including higher profitability, lower cost of capital, and improved risk-adjusted returns. In the banking sector, several studies find that ESG performance is positively associated with financial stability and operational efficiency (Pyka et al., 2025). Banks with strong ESG practices tend to experience lower non-performing loan ratios and more stable earnings performance (Gissay & Majid, 2025).

However, other studies report weak or insignificant relationships, suggesting that the ESG–financial performance link may be context-dependent (Jasni & Zulkifli, 2024). Differences in measurement methods, time periods, and institutional environments contribute to variations in empirical findings (Yahaya, 2026a). Overall, the literature suggests that while ESG performance is generally associated with improved financial outcomes, the strength and direction of this relationship depend on several contextual factors.

2.8.6 Limitations of Existing Studies

Despite the growing body of literature on ESG and financial performance, several limitations remain (Clément et al., 2025). One key limitation is the lack of consensus regarding ESG measurement. Different rating agencies use different methodologies, which may lead to inconsistent results across studies. Another limitation is the issue of causality. Many studies rely on correlational analysis, making it difficult to determine whether ESG performance leads to better financial outcomes or whether financially stronger firms are simply more able to invest in ESG initiatives (L. Ma et al., 2024). Additionally, most existing studies focus on developed markets, while evidence from emerging economies remains relatively limited. This is

particularly relevant for banking sectors in developing countries, where institutional frameworks and regulatory environments differ significantly (Tran et al., 2023). Finally, sector-specific dynamics are often overlooked. In banking, ESG performance may operate differently compared to non-financial industries due to the intermediary role of banks and their exposure to systemic risks.

These limitations highlight the need for further research that examines ESG–financial performance relationships in specific sectors and institutional contexts, particularly using banking firms as the focus of analysis (Salem et al., 2024).

2.9 Country Differences and Institutional Environment

The relationship between board gender diversity, ESG performance, and financial outcomes does not operate in isolation but is shaped by the institutional environment in which firms are embedded (Guedes et al., 2025). Cross-country differences in legal systems, cultural norms, regulatory frameworks, and market development levels may significantly influence how governance mechanisms translate into firm-level outcomes (Arafat, 2025). In this context, institutional environment acts as an important contextual factor that may strengthen or weaken the effectiveness of board gender diversity in influencing both ESG performance and financial performance. Therefore, understanding country-level differences is essential for interpreting governance-performance relationships in a comparative setting, particularly in global industries such as banking.

2.9.1 Institutional Theory and Governance Differences

Institutional theory provides a fundamental explanation for why governance practices and their outcomes differ across countries. According to this perspective, organizations are

shaped not only by efficiency considerations but also by institutional pressures, including regulatory rules, social norms, and cultural expectations (Risi et al., 2023).

DiMaggio and Powell (1983) emphasize that firms tend to conform to institutional environments to gain legitimacy, resulting in similarities in governance structures within the same institutional context but differences across countries (Kauppi, 2022). This phenomenon, often referred to as institutional isomorphism, explains why corporate governance practices such as board gender diversity and ESG adoption vary significantly across jurisdictions.

In countries with strong institutional frameworks, governance mechanisms are typically more formalized and effectively enforced (Eke et al., 2025). As a result, board diversity is more likely to translate into meaningful ESG improvements and financial outcomes. In contrast, weaker institutional environments may limit the effectiveness of governance reforms due to enforcement gaps and weaker accountability mechanisms.

2.9.2 Legal Systems and Corporate Governance Quality

Legal systems play a crucial role in shaping corporate governance quality and, consequently, the effectiveness of board-level mechanisms (Lee, 2023). Following the legal origins argument advanced by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998), common law countries are generally associated with stronger investor protection, higher disclosure requirements, and more effective enforcement of corporate governance standards compared to civil law countries. Stronger legal systems enhance board accountability and reduce information asymmetry between managers and stakeholders. In such environments, board gender diversity is more likely to have a substantive impact on firm behavior because governance rules are more strictly enforced.

In contrast, weaker legal systems may limit the effectiveness of board diversity due to insufficient enforcement mechanisms and higher levels of institutional uncertainty. In banking

firms, where regulatory oversight is particularly important, differences in legal systems can significantly influence how ESG practices are implemented and how governance structures affect financial performance (Abramova, 2024). Thus, legal system differences represent a key factor in explaining cross-country variation in the governance ESG performance relationship.

2.9.3 Cultural Dimensions and Gender Diversity Acceptance

Cultural norms and societal values play an important role in shaping attitudes toward gender roles and corporate leadership. Hofstede's cultural dimensions theory (Hofstede, 2001) suggests that countries differ in terms of power distance, masculinity versus femininity, individualism, and uncertainty avoidance, all of which may influence the acceptance of gender diversity in corporate boards (Peng et al., 2022).

In cultures with high gender equality norms, board gender diversity is more likely to be accepted and integrated into decision-making processes in a meaningful way. In such contexts, female directors may have greater influence and be more actively involved in strategic decisions, thereby enhancing ESG and financial outcomes (Cambrea et al., 2023). Conversely, in more traditional or masculine-oriented cultures, female representation on boards may be more symbolic, limiting their actual influence on governance processes. This can weaken the relationship between board gender diversity and firm performance. Therefore, cultural context is a critical determinant of whether gender diversity translates into substantive governance changes or remains a formal compliance requirement.

2.9.4 Developed vs Emerging Market Differences

Differences between developed and emerging markets also play a significant role in shaping the effectiveness of governance mechanisms (M. A. Khan et al., 2022). Developed markets typically exhibit stronger institutional quality, more developed financial systems, and

higher levels of regulatory enforcement. In such environments, ESG practices and board gender diversity are more likely to be embedded in corporate strategy rather than treated as superficial compliance mechanisms. Investors in developed markets also tend to place greater emphasis on ESG performance, which increases the financial relevance of governance practices.

In contrast, emerging markets often face institutional constraints such as weaker enforcement, limited transparency, and less developed capital markets. In these contexts, the impact of board gender diversity on ESG and financial performance may be weaker or more variable. However, emerging markets may also exhibit stronger marginal effects from governance improvements due to greater room for institutional development. As a result, the direction and magnitude of governance effects may vary depending on the level of market development (H. Khan et al., 2022).

2.9.5 Country-Level ESG Regulation Differences

Regulatory frameworks related to ESG vary significantly across countries, influencing how firms adopt and implement sustainability practices (Singhania et al., 2024). In some jurisdictions, ESG disclosure is mandatory and strictly enforced, while in others it remains voluntary or loosely regulated. Countries with advanced ESG regulatory frameworks tend to have higher levels of ESG disclosure quality, greater transparency, and stronger integration of sustainability into corporate decision-making. In such environments, board gender diversity may have a more visible impact on ESG outcomes because regulatory systems support and reinforce governance practices.

In contrast, in countries with weaker ESG regulation, firms may have greater flexibility in reporting and implementing sustainability practices, which can reduce the effectiveness of board-level governance mechanisms (Elmaghrabi et al., 2025). In banking sectors, regulatory differences are particularly important because financial institutions are subject to both financial

regulation and increasingly to sustainability-related regulatory requirements. Therefore, ESG regulation at the country level can significantly shape the governance-performance relationship.

2.9.6 Moderating Role of Country in Governance–Performance Relationship

Based on the above arguments, country-level institutional differences are expected to moderate the relationship between board gender diversity, ESG performance, and financial performance (Tirreksani et al., 2024). This implies that the strength and direction of these relationships may vary depending on the institutional environment in which firms operate. In strong institutional environments characterized by effective legal systems, high regulatory quality, and supportive cultural norms, the positive effects of board gender diversity are likely to be more pronounced. In such contexts, gender-diverse boards are better able to influence ESG practices and improve financial outcomes through enhanced governance mechanisms.

In weaker institutional environments, however, the effectiveness of board gender diversity may be constrained by limited enforcement, cultural barriers, and weaker investor pressure (Yue et al., 2026). As a result, the impact on ESG performance and financial outcomes may be weaker or less consistent. Therefore, country differences do not merely provide contextual background but play an active moderating role in shaping governance effectiveness. This justifies the inclusion of country-level moderation in the conceptual framework of this study and supports the argument that governance-performance relationships are context-dependent rather than universal.

2.10 Banking Sector Governance and ESG Integration

The banking sector plays a central role in the financial system as an intermediary between savers and borrowers, and as a key allocator of capital within the economy. Due to this unique position, governance structures in banks are subject to stricter regulatory oversight and

higher stakeholder expectations compared to non-financial firms (Erben Yavuz et al., 2024). In recent years, the integration of Environmental, Social, and Governance (ESG) principles into banking operations has become increasingly important, driven by regulatory pressure, investor demand, and the growing recognition of sustainability risks (Abramova, 2024).

Within this context, board composition and governance mechanisms are considered critical determinants of how effectively banks incorporate ESG considerations into their decision-making processes. Board gender diversity, in particular, has gained attention as a factor that may influence both governance quality and sustainability outcomes in financial institutions (Adeola & Ajasa-Adeoye, 2025; Bogdan et al., 2022; Luh, 2025).

2.10.1 Governance Structure in Banking Firms

The governance structure of banking firms is typically more complex and regulated than that of non-financial corporations. Banks are subject to oversight from multiple regulatory bodies, including central banks, financial supervisory authorities, and international regulatory frameworks such as Basel standards (Alonso et al., 2024). Board of directors in banking institutions are responsible for overseeing risk management, ensuring regulatory compliance, and safeguarding financial stability. In addition to traditional governance responsibilities, boards are increasingly expected to oversee ESG integration and sustainability-related risks (Gupta & Chanchal, 2022).

Compared to other sectors, banking governance structures often include specialized committees such as risk committees, audit committees, and sustainability committees (Asri, 2024). These structures are designed to ensure that governance processes are robust and aligned with both financial and non-financial objectives (Dimes & Molinari, 2024). The effectiveness of governance structures in banks is therefore closely linked to board composition, independence, expertise, and diversity.

2.10.2 Board Composition in Banking Industry

Board composition in banking firms has received considerable attention due to its impact on risk oversight and strategic decision-making. Key dimensions of board composition include board size, independence, expertise, tenure, and diversity. Gender diversity has emerged as an increasingly important dimension of board composition (Yakubu & Oumarou, 2023). Regulatory bodies in several countries have introduced guidelines or quotas to improve female representation in financial institution boards, reflecting the belief that diversity enhances governance quality (Nájera-Sánchez et al., 2022).

In banking firms, board members are expected to possess strong financial expertise and risk management knowledge (Umar et al., 2024). The inclusion of female directors may contribute to broader perspectives in board discussions, particularly in areas related to customer behavior, ethical considerations, and long-term sustainability (Issa & Hanaysha, 2023). However, the effectiveness of board composition depends not only on representation but also on the actual participation and influence of board members in decision-making processes.

2.10.3 Risk Governance in Banks

Risk governance is a fundamental aspect of banking operations and a key determinant of financial stability (Raouf & Ahmed, 2022). Banks face a wide range of risks, including credit risk, market risk, liquidity risk, operational risk, and increasingly ESG-related risks such as climate risk and social risk (J. Liu & Xie, 2024). The board of directors plays a crucial role in overseeing risk management frameworks and ensuring that risk-taking activities are aligned with the institution's risk appetite. Effective risk governance requires a balance between profitability and prudential risk management (Suryadarma & Pujiyono, 2025).

Board gender diversity may influence risk governance through differences in risk perception and decision-making behavior (Muhammad et al., 2023). Some studies suggest that female directors are associated with more conservative risk preferences, which may contribute to more cautious lending practices and improved asset quality (Menicucci & Paolucci, 2022b). However, risk governance is not solely about risk aversion but also about ensuring optimal risk-return trade-offs. In this sense, diverse boards may contribute to more balanced and comprehensive risk evaluation processes.

2.10.4 ESG Implementation in Financial Institutions

The implementation of ESG principles in financial institutions has evolved significantly over the past decade. Banks are increasingly integrating ESG considerations into lending decisions, investment strategies, and risk management frameworks (Abramova, 2024). ESG implementation in banking typically includes green lending policies, exclusion of environmentally harmful industries, sustainability-linked loans, and the development of ESG-related financial products. In addition, banks are increasingly required to disclose ESG-related information in line with international reporting standards (Szewczyk & Szustak, 2023).

Board-level oversight is essential for effective ESG integration, as strategic decisions regarding sustainability are typically made at the highest governance level (Samans & Nelson, 2022). Boards influence the extent to which ESG principles are embedded into corporate strategy and operational practices. Gender-diverse boards may enhance ESG implementation by encouraging greater attention to environmental and social issues and by promoting more transparent and accountable governance practices (Primacintya & Kusuma, 2025).

2.10.5 Challenges of Gender Diversity in Banking Boards

Despite increasing recognition of the importance of gender diversity, several challenges persist in achieving meaningful female representation in banking boards. One key challenge is the limited availability of qualified female candidates with extensive experience in banking and financial management (Babafemi, 2024). This constraint is often cited in discussions regarding board appointments, particularly in highly technical sectors such as banking.

Another challenge relates to structural and cultural barriers that limit women's access to senior leadership positions (Barkhuizen et al., 2022). In many institutions, informal networks and traditional career progression pathways may disadvantage female professionals (Johansson & Victorin, 2023). In addition, even when women are appointed to boards, their influence may be limited due to minority status or tokenistic representation (Rixom et al., 2023). In such cases, gender diversity may not translate into meaningful changes in governance outcomes. These challenges highlight the importance of not only increasing representation but also ensuring that female directors have sufficient influence and participation in board decision-making processes.

2.10.6 Sustainability and Financial Stability in Banks

Sustainability and financial stability are increasingly viewed as interconnected objectives in the banking sector. Traditionally, financial stability has been associated with prudent risk management and adequate capital buffers (Khoiriah et al., 2026). However, in recent years, sustainability considerations have become an integral part of financial stability frameworks. Environmental and social risks can have significant implications for banks' asset quality and long-term profitability (Cantero-Saiz et al., 2024). For example, climate-related risks may affect the creditworthiness of borrowers, while social and governance issues may lead to reputational and operational risks.

Banks that effectively integrate sustainability considerations into their governance structures are better positioned to manage long-term risks and maintain financial stability (Dicuonzo et al., 2022). ESG integration is therefore not only a matter of corporate responsibility but also a strategic approach to risk mitigation and value preservation (Cinciulescu, 2024). Board gender diversity may indirectly contribute to financial stability by improving ESG oversight and strengthening governance quality (Yahaya, 2025). In this sense, sustainability and financial performance are not competing objectives but mutually reinforcing outcomes within effective governance systems.

2.11 Research Gap and Conceptual Framework

The literature on corporate governance, ESG performance, and financial outcomes has expanded significantly in recent years (Beckmann et al., 2014; S. Chen et al., 2023; Githaiga & Kosgei, 2023; Laique et al., 2023; Qiu, 2024). However, despite the growing attention to board gender diversity and sustainability issues, existing studies remain fragmented and often examine these relationships in isolation. Most research focuses separately on governance and performance, or ESG and financial outcomes, without fully integrating how board characteristics influence sustainability practices and how these practices subsequently affect financial performance, particularly in banking institutions (Basile et al., 2026).

One of the key gaps in the literature relates to board gender diversity research. Although numerous studies suggest that gender-diverse boards may enhance governance quality and corporate outcomes, much of this evidence is derived from developed economies with relatively strong institutional frameworks (Laique et al., 2023). This raises concerns regarding external validity, particularly for emerging markets where institutional environments, cultural norms, and gender roles differ significantly (M. A. Khan et al., 2022). In addition, gender diversity is often treated as a numerical or symbolic measure, without adequately capturing the depth of

female participation or their actual influence in boardroom decision-making (Tessaro, 2022). As a result, there is limited understanding of whether gender diversity leads to substantive governance changes or remains largely symbolic in practice.

Another important gap lies in ESG and banking-related research. While ESG has become a major focus in corporate finance literature, relatively few studies concentrate specifically on the banking sector, despite its central role in financial intermediation and sustainable capital allocation (Intonti, 2025). Banks influence ESG outcomes not only through their internal operations but also through lending and investment decisions that shape broader economic activity (Mirza et al., 2025). However, existing studies often rely on non-financial firm samples, limiting the relevance of findings for financial institutions. Moreover, ESG measurement remains inconsistent across studies due to variations in rating methodologies, disclosure standards, and data availability, which reduces comparability and empirical reliability.

A fourth gap concerns the specification of empirical models rather than their conceptual scope. Studies linking board composition to bank performance frequently adopt control structures drawn from the general corporate finance literature, in which firm size and leverage suffice. The determinants of bank profitability are, however, well established and include asset quality as a first-order factor. Where the non-performing loan ratio is omitted, the estimated governance coefficient absorbs variation in credit conditions, and the resulting estimates are not comparable across samples drawn from different points in the credit cycle. A further measurement gap concerns the treatment of female representation itself: the critical mass literature reviewed in Section 2.2.7 implies a threshold relationship, yet the great majority of studies impose a linear specification without testing that assumption.

A further limitation in the literature is the lack of integrated governance ESG financial performance models. Most studies tend to examine bilateral relationships, such as board

diversity and firm performance or ESG and financial performance, without considering the sequential and interconnected nature of these relationships (Tutar et al., 2025). Theoretically, governance structures influence ESG practices, which in turn affect financial outcomes through mechanisms such as risk reduction, improved stakeholder relations, and enhanced investor confidence. The absence of integrated frameworks limits the ability to fully understand the transmission channels through which governance affects firm outcomes (X. Wu et al., 2026).

In addition, cross-country evidence in banking and ESG research remains limited. Many existing studies are conducted within single-country contexts, which restricts the ability to generalize findings across different institutional environments. However, governance effectiveness is strongly shaped by country-level factors such as legal systems, regulatory quality, cultural norms, and investor protection mechanisms (Ghabri, 2022). These institutional differences may significantly influence how board gender diversity translates into ESG and financial outcomes. As a result, the role of country context is often underexplored, despite its theoretical importance in institutional theory.

Building on these gaps, this study is justified on several grounds. First, it extends the literature on board gender diversity by focusing specifically on banking institutions, which remain underrepresented in empirical governance research despite their systemic importance (Mazumder, 2025). Second, it integrates ESG performance as a key channel through which governance affects financial performance, providing a more comprehensive understanding of the governance sustainability finance nexus (Salem et al., 2024). Third, the study incorporates country-level differences as a moderating factor, thereby addressing the influence of institutional environments on governance effectiveness. Finally, by examining both ESG outcomes and financial performance simultaneously, the study contributes to the ongoing debate on whether sustainability and profitability are complementary objectives within financial institutions (Rataj et al., 2025).

Based on the theoretical and empirical literature, the conceptual framework of this study is developed in two stages. The baseline stage treats ESG performance and financial performance as two parallel outcomes of board gender diversity, each estimated against a common set of bank-level controls comprising size, leverage and asset quality. This structure reflects the argument developed in Section 2.5 that sustainability performance is consequential in its own right, and it allows the evidence on each outcome to be assessed independently before any relationship between them is imposed. The extension stage then examines whether ESG performance itself contributes to financial performance, and therefore whether it may operate as a transmission mechanism between governance and financial outcomes. Furthermore, country-level institutional differences are expected to moderate these relationships, as variations in legal systems, cultural norms, and regulatory frameworks may strengthen or weaken the effectiveness of board gender diversity in influencing ESG and financial performance.

Overall, the conceptual framework positions board gender diversity as the primary governance factor and treats ESG performance and financial performance as two outcomes that are first examined in parallel and subsequently linked, while recognising the moderating role of the institutional environment at the extension stage. This integrated approach allows for a more comprehensive understanding of how governance structures contribute to sustainable and financial performance in banking firms across different countries.

Chapter 3. Conceptual Framework and Research Hypotheses

This chapter develops the conceptual framework and research hypotheses of the study. It builds on the theoretical and empirical literature reviewed in the previous chapter, focusing on corporate governance, board gender diversity, ESG performance, financial performance, and institutional differences in the banking sector. The chapter explains how board composition, particularly gender diversity, is expected to influence ESG outcomes and how ESG performance is linked to financial performance. It also incorporates cross-country institutional differences as a moderating factor that may shape the strength of these relationships. Based on this framework, the chapter formulates the hypotheses that will be empirically tested in the study.

The hypotheses are organised into two stages. The baseline stage comprises the two relationships that link board gender diversity directly to each of the two performance outcomes, namely H1 and H2. These are estimated as parallel models sharing a common set of bank-level controls, and they constitute the core of the empirical analysis. The extension stage comprises the relationships that connect the two outcomes to one another and that condition them on institutional context, namely H3, H4 and H5. Structuring the framework in this way allows the direct associations to be established on their own terms before the more demanding mediation and moderation specifications are imposed on the same data, and it makes explicit which findings the study treats as primary and which as extensions.

3.1 Board Gender Diversity and ESG Performance

Board gender diversity has been widely examined in relation to corporate sustainability outcomes, particularly ESG performance. A significant strand of literature suggests that gender-diverse boards tend to be positively associated with improved ESG outcomes. For instance, studies such as Wang & Yang (2025) and Marchini et al. (2022) that firms with higher female

representation on boards tend to achieve stronger social and environmental performance. These studies argue that female directors are more likely to emphasize ethical considerations, stakeholder engagement, and long-term sustainability objectives, which ultimately improve ESG ratings. Similarly, Nyamae (2024) provide evidence that gender-diverse boards are associated with stronger environmental policies and improved corporate social responsibility practices. The underlying explanation is often linked to stakeholder theory and behavioral differences, suggesting that women may exhibit greater sensitivity toward social and environmental issues in corporate decision-making.

However, not all studies support this positive relationship. Chatterjee & Nag (2022) argue that while female directors may improve board monitoring, their impact on firm outcomes is not always positive in all contexts. There is also study that suggest that gender diversity may have no significant effect on ESG performance when female representation is low or when women lack real influence within the board (García-Meca & Martinez-Ferrero, 2025). In such cases, gender diversity may be more symbolic than substantive, limiting its impact on sustainability outcomes.

A further consideration concerns the form of the relationship rather than its direction. The critical mass literature reviewed in Section 2.2.7 implies that the influence of women directors on board process is not linear in their number but becomes substantive only once a threshold of approximately three is reached (Kanter, 1977; Konrad, Kramer and Erkut, 2008; Torchia, Calabro and Huse, 2011). Where female representation remains below that threshold, women directors may be positioned as representatives of a constituency rather than as full participants, and their capacity to shape sustainability commitments may correspondingly be limited. This reasoning does not alter the expected direction of the association but suggests that a linear specification may understate it. The hypothesis below is therefore stated in terms of the

proportional measure, while a critical mass specification is estimated separately in order to test whether the relationship is better characterised as a threshold effect.

In addition, Esposito De Falco et al. (2026) argue that ESG performance is more strongly driven by institutional pressures and regulatory frameworks than by board composition alone. This implies that the influence of gender diversity may be conditional rather than universal. Overall, despite mixed evidence, the majority of theoretical arguments and empirical findings suggest that board gender diversity is likely to enhance ESG performance, particularly in firms where female directors have meaningful participation in decision-making processes.

H1: Board gender diversity has a positive influence on ESG performance, after controlling for bank size, leverage and asset quality.

3.2 Board Gender Diversity and Financial Performance

The relationship between board gender diversity and financial performance has been one of the most debated topics in corporate governance research. A number of studies report a positive association between gender-diverse boards and firm performance. For example, Bogdan et al. (2022) find that board diversity is positively associated with financial performance indicators such as ROA and ROE. These studies argue that diversity enhances board independence, improves monitoring quality, and reduces agency problems.

From a resource dependence perspective, Najaf et al. (2025) suggest that female directors bring valuable external connections, diverse knowledge, and stakeholder insights, which can improve strategic decision-making and firm performance. In banking firms, this may translate into better risk assessment, improved credit allocation, and more stable financial outcomes. However, there is also substantial evidence showing insignificant or even negative relationships. Laique et al. (2023) find that while gender-diverse boards improve monitoring,

they may also lead to over-monitoring, which can negatively affect firm performance in some cases.

Part of the inconsistency in this literature may be attributable to specification rather than to substance. As set out in Section 2.5, bank profitability is determined to a considerable degree by scale, capital structure and asset quality, and these characteristics are themselves correlated with board composition: larger and better-capitalised institutions appoint larger boards, face greater investor scrutiny, and are more frequently subject to diversity guidelines. A model that relates board gender diversity to return on assets without holding these characteristics constant cannot distinguish a governance effect from a balance-sheet effect. The hypothesis stated below is therefore formulated as a conditional association, and the empirical specification in Chapter 4 controls for bank size, leverage and asset quality alongside board size and board independence.

In emerging markets, the relationship appears even more inconsistent. Some studies suggest that female board representation does not significantly affect financial performance due to limited influence of female directors or weak institutional environments that constrain governance effectiveness (Amin & Yahaya, 2025). Thus, the literature remains inconclusive, with evidence supporting both positive and neutral effects. Nevertheless, based on agency theory, resource dependence theory, and upper echelons theory, this study expects a positive relationship between board gender diversity and financial performance in banking firms, although the effect may be indirect or context-dependent. Thus:

H2: Board gender diversity has a positive influence on financial performance, after controlling for bank size, leverage and asset quality.

3.3 ESG Performance and Financial Performance

The relationship between ESG performance and financial performance has attracted extensive empirical attention, yet findings remain mixed. A large body of literature supports a

positive relationship. For instance, Abraham & Forslund (2022), in a meta-analysis of over 2,000 studies, conclude that the majority of research finds a non-negative relationship between ESG and financial performance, with many studies reporting positive effects. In the banking sector, studies such as Thu Quang & Linh (2026) and Mateev et al. (2026) find that banks with higher ESG performance tend to exhibit better risk-adjusted returns, improved asset quality, and lower volatility. These findings suggest that ESG practices contribute to better risk management and long-term financial stability.

Theoretically, stakeholder theory and risk management perspectives explain this relationship by arguing that firms with strong ESG performance are better at managing externalities, reducing regulatory risk, and improving stakeholder trust. Signalling theory, first formalised by Spence (1973) in the context of labour markets and subsequently extended to corporate disclosure, also suggests that strong ESG performance sends a positive signal to investors, reducing information asymmetry and potentially lowering the cost of capital. However, some studies report neutral or even negative relationships. For example, Makridou et al. (2024) also note that a subset of studies finds no significant relationship between ESG and financial performance. Critics argue that ESG investments may involve additional costs that reduce short-term profitability, particularly in highly competitive industries (Burinskienė et al., 2025). In banking, some researchers argue that ESG integration may initially reduce profitability due to compliance costs and conservative lending practices. However, in the long run, improved risk management and reputational benefits are expected to offset these costs (Landi et al., 2022). While evidence is not entirely consistent, the dominant view in the literature supports a positive association between ESG performance and financial performance, particularly in risk-sensitive industries such as banking. Therefore we develop that:

H3: ESG performance has a positive influence on financial performance.

3.4 Country Differences as a Moderator in Governance–Performance Relationship

A growing body of literature emphasizes that the relationship between corporate governance, ESG, and financial performance is not uniform across countries but is significantly shaped by institutional environments. Institutional theory suggests that firms operate within different regulatory, legal, and cultural contexts that influence governance effectiveness (Bhuiyan et al., 2023). Studies such as Yahaya (2026) highlight that countries with strong legal systems and investor protection frameworks tend to exhibit better corporate governance outcomes. In such environments, board gender diversity is more likely to translate into meaningful improvements in ESG performance and financial outcomes due to strong enforcement mechanisms. In contrast, in countries with weaker institutions, governance mechanisms may be less effective. Some studies suggest that in such environments, board diversity has limited impact because institutional weaknesses constrain board effectiveness and accountability.

Cultural differences also play a significant role. Hofstede’s cultural dimensions suggest that in societies with high gender equality norms, female directors are more likely to exert influence in board decisions (Yousuf & Aldamen, 2021). Conversely, in more hierarchical or traditional societies, female board members may face constraints that reduce their effectiveness, leading to weaker governance outcomes. Furthermore, differences between developed and emerging markets also contribute to variation in findings. Studies show that ESG practices and governance mechanisms are more strongly linked to financial performance in developed markets due to mature financial systems and stronger investor pressure (Moussa et al., 2024; Singhania & Saini, 2023). In emerging markets, however, the relationship is often weaker or more inconsistent due to institutional constraints.

Nevertheless, some studies argue that emerging markets may experience stronger marginal effects from governance improvements because baseline governance quality is lower,

allowing gender diversity to have a more noticeable impact when effectively implemented (Attia et al., 2024; Salihi et al., 2024). Therefore, based on institutional theory and cross-country governance literature, this study argues that country-level institutional differences moderate the relationship between board gender diversity and financial performance in banking firms. The hypothesis is confined to the financial performance path in order to keep its scope aligned with the specification tested in Chapter 4; whether the same conditioning applies to the sustainability path is left to further work.

H4: Country differences moderate the relationship between board gender diversity and financial performance.

3.5 Conceptual Framework and Summary of Hypotheses

The conceptual framework of this study is developed based on the theoretical foundations and empirical literature discussed in the previous chapter. It illustrates the proposed relationships between board gender diversity, ESG performance, financial performance, and country differences in banking firms. Board gender diversity is positioned as the main independent variable that is expected to influence ESG performance and financial performance. At the baseline stage, ESG performance and financial performance are treated as two parallel outcomes of board gender diversity, each estimated against the same set of bank-level controls comprising bank size, leverage and asset quality. At the extension stage, ESG performance is additionally proposed as a mechanism that transmits part of the effect of board gender diversity to financial outcomes, implying an indirect relationship (Kampoowale et al., 2025). Financial performance, measured through return on assets (ROA), is the final dependent variable in the extended model.

In addition, country differences are included as a moderating variable that may strengthen or weaken the relationship between board gender diversity and financial

performance. This reflects the idea that institutional environments such as legal systems, cultural norms, and regulatory quality can shape the effectiveness of corporate governance mechanisms. Figure 3.1 presents the conceptual framework of this study. Solid paths denote the baseline stage, in which two parallel arrows run from board gender diversity to ESG performance and to financial performance respectively, with the control variables entering both models. Dashed paths denote the extension stage, comprising the link from ESG performance to financial performance, the indirect path through ESG performance, and the moderating role of country context.

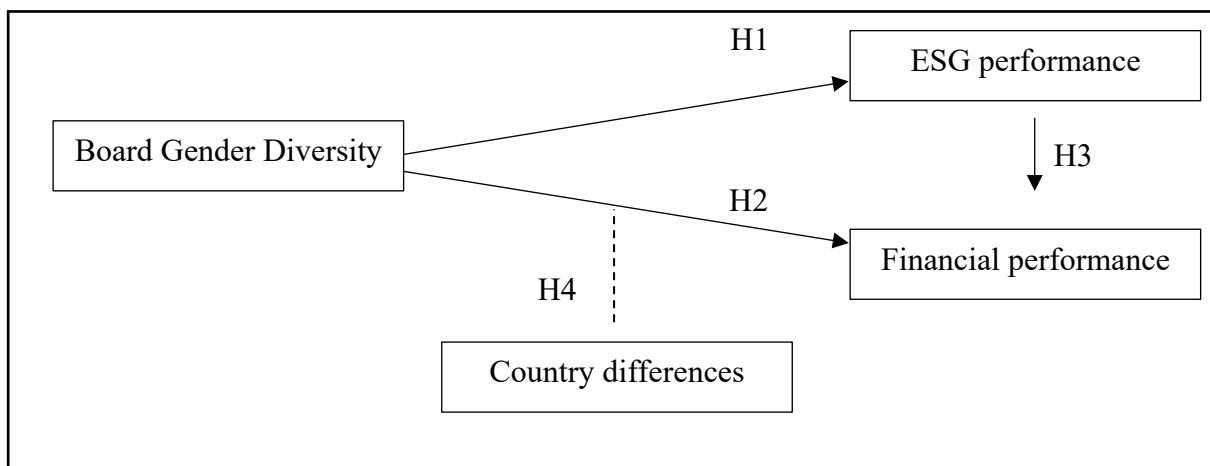


Figure 3. 1 The Conceptual Framework

Because the framework positions ESG performance as a transmission mechanism, that proposition is stated as a testable hypothesis rather than left as narrative. Consistent with the mediation logic set out above, and with the argument developed in Section 2.11, the study formulates:

H5: ESG performance mediates the relationship between board gender diversity and financial performance.

The procedure for testing this indirect effect is specified in Chapter 4 so that the hypothesis is matched to an estimation strategy rather than asserted without one. The five hypotheses of the study may therefore be summarised as follows.

Baseline stage. H1: board gender diversity is positively associated with ESG performance. H2: board gender diversity is positively associated with financial performance. Both are estimated with bank size, leverage and asset quality held constant.

Extension stage. H3: ESG performance is positively associated with financial performance. H4: country-level institutional differences moderate the relationship between board gender diversity and financial performance. H5: ESG performance mediates the relationship between board gender diversity and financial performance.

Chapter 4. Research Methodology

Chapter 4 explains the research methodology adopted in this study. It discusses the research design, data collection procedures, sampling techniques, variable measurements, and statistical analysis methods used to examine the relationships between board gender diversity, ESG performance, financial performance, and country differences in banking firms. The chapter also provides justification for the use of a quantitative research approach, which is appropriate for testing hypothesised relationships using numerical and standardized data derived from financial and ESG databases. In addition, this chapter explains how the reliability and validity of the data are maintained through the use of reputable secondary data sources and consistent measurement approaches across all variables.

4.1 Data Collection Method

4.1.1 Sample Size and Composition

The initial sample of this study consists of 100 publicly listed banking firms drawn from multiple regions across the world, observed over the period 2025. Because the design is cross-sectional rather than longitudinal, the effective unit of analysis is the bank rather than the bank-year, and the sample yields 100 bank observations before exclusions for missing data. The selection of firms across different regions is intended to ensure diversity in institutional environments, governance structures, and ESG reporting practices, which is important for examining cross-country differences in corporate governance and sustainability outcomes. Banking firms are specifically selected due to their systemic importance in the global economy, their high level of regulation, and their increasing exposure to ESG-related policies and sustainability disclosure requirements. As financial intermediaries, banks also play a key role in channeling capital toward sustainable and green investments, making them highly relevant for ESG-focused research (Abramova, 2024).

The justification for selecting a sample size of 100 firms is grounded in both statistical reasoning and empirical precedent. From a quantitative research perspective, multiple regression analysis requires an adequate number of observations relative to the number of explanatory variables included in the model to ensure unbiased and stable parameter estimation. Based on this guideline, a minimum of around 80 to 100 observations is required to ensure sufficient statistical power for a model containing six to eight explanatory variables. A cross-section of 100 banks satisfies this requirement and permits the inclusion of country or regional fixed effects, although the number of countries represented means that a full country fixed effects specification consumes a substantial share of the available degrees of freedom. It also reduces the risk of overfitting, multicollinearity instability, and inefficient coefficient estimation.

In addition to statistical considerations, the sample size is also justified based on comparability with prior empirical research in ESG, corporate governance, and banking performance literature. Numerous studies in this field adopt relatively similar sample sizes due to data constraints in ESG databases (Jonsdottir et al., 2022). For example, cross-country ESG studies in banking and financial institutions often range between 80 and 150 firms, depending on the availability of consistent ESG ratings and financial disclosures. ESG data coverage is not uniform across countries, especially in emerging markets, where reporting standards may vary or data may be incomplete. As a result, researchers frequently face a trade-off between sample size and data completeness. In this study, the selection of 100 firms represents a balanced compromise that ensures sufficient sample variation while maintaining data reliability and cross-country comparability.

Furthermore, the use of 100 firms allows for meaningful variation across institutional contexts, which is essential for testing the moderating role of country differences in governance–performance relationships. A smaller sample would limit the ability to capture

cross-country heterogeneity, while a significantly larger sample could introduce inconsistencies due to missing ESG data or non-comparable reporting standards. Therefore, the sample size is considered both methodologically appropriate and practically feasible given the scope of ESG and banking data availability.

It should be acknowledged that the binding constraint on sample size in this study is not statistical but practical. Composite ESG scores for banking institutions are available only through commercial rating providers, and the non-performing loan ratio is frequently absent from consolidated financial databases and must be extracted from annual reports or supervisory returns. Where these two variables cannot be obtained for a given bank-year on a comparable basis, the observation is excluded. Should the number of institutions satisfying all data requirements fall materially below the target, the sample will be narrowed by region rather than compromised by substituting non-comparable data sources, and the final composition will be reported in full.

4.1.2 Research Period

The study covers the observation period 2025. The year is chosen because it is the most recent financial year for which audited statements, governance disclosures and ESG ratings are available for the whole sample, and because coverage of banking institutions by the major ESG rating providers is most complete for recent years. Extending the study backwards would introduce systematic gaps concentrated among smaller institutions and emerging-market banks, and would bias the sample toward large European and North American groups.

Defining the period in this way carries two implications for the analysis. First, because every observation belongs to the same financial year, macroeconomic conditions are common to the whole sample; year fixed effects are therefore neither estimable nor necessary, and differences in the macroeconomic environment across jurisdictions are absorbed by country

and regional fixed effects instead. Second, a single-year window does not permit the independent variables to be entered with a lag, so board composition and performance are measured contemporaneously. The study therefore cannot establish that composition precedes the performance it is said to influence, and this constraint is acknowledged among the limitations in Section 4.8.

4.1.3 Population

The population of this study consists of all publicly listed banking firms worldwide that disclose sufficient and comparable information on corporate governance structures, ESG performance, and financial indicators. These firms are selected because publicly listed banks are subject to strict regulatory frameworks that require transparency in financial reporting and governance disclosures. This enhances the reliability and comparability of the data across countries. In addition, publicly listed banks are more likely to be covered by the major commercial ESG rating providers, which makes them suitable for cross-country empirical analysis.

For the purposes of this study, a banking firm is defined as an institution whose principal activity is deposit-taking and lending and which is classified as a bank or banking group under the supervisory framework of its home jurisdiction. Commercial banks and universal banking groups are included. Pure investment banks and securities houses are excluded, since their revenue structure and balance sheet composition differ materially and the non-performing loan ratio is not meaningful for institutions without a substantial loan book. Insurance undertakings, asset managers and other non-bank financial institutions are likewise excluded. Islamic banks are excluded from the baseline sample because differences in the accounting treatment of profit-sharing arrangements affect the comparability of both return on assets and the impairment ratio; their inclusion is examined separately as a robustness check.

Four inclusion criteria are applied to the population so defined. A bank must be listed on a recognised exchange throughout the observation period; it must have a composite ESG score available from the selected rating provider for the observation year; it must disclose board composition in sufficient detail to identify the gender of each director and the independence status of each seat; and it must report total assets, total equity, net income and non-performing loans on a consolidated basis. Institutions that were delisted, acquired or nationalised before the observation year are excluded, as are those newly listed within it. This restriction introduces a degree of survivorship into the sample, which is acknowledged among the limitations of the study.

However, the final sample is restricted to firms that meet specific data availability criteria. Only banking firms with complete information on board composition, ESG ratings, and financial performance indicators are included in the analysis. Firms with missing data on any of the key variables are excluded to ensure consistency in the empirical model and to avoid bias resulting from incomplete observations. This approach is consistent with standard practices in ESG and corporate governance research, where data completeness is critical for ensuring validity and robustness of results.

4.1.4 Data Collection Methods and Sources

This study employs a secondary data collection approach, which is widely used in empirical research in corporate governance, ESG, and financial economics. Secondary data is particularly appropriate for this study because it allows the researcher to access large-scale, standardized, and verifiable information across multiple countries and institutions. Unlike primary data, which may be subject to response bias or sampling limitations, secondary data obtained from audited reports and established databases provides a higher level of objectivity and comparability.

The data are collected from multiple internationally recognized sources to ensure accuracy and cross-validation. First, annual reports of banking firms are used to obtain detailed governance information, including board composition, number of female directors, total board size, and other governance characteristics. Annual reports are considered reliable because they are audited and publicly disclosed under regulatory requirements (Ismawati et al., 2024). Second, ESG performance is measured by the MSCI ESG rating, recorded on the seven-grade scale from CCC to AAA and coded ordinally from 1 to 7 for estimation. A single provider is used for the whole sample. Relying on one provider rather than combining several is a deliberate choice: as discussed in Section 2.4.3, rating agencies apply materially different methodologies, weighting schemes and disclosure adjustments, and scores are therefore not comparable across providers. Blending sources would introduce measurement error that is correlated with provider coverage and hence with firm size and region. General-purpose financial portals such as Yahoo Finance and Investing.com are not used for ESG data, since the sustainability scores displayed on those platforms are redistributed from third parties without consistent methodological documentation.

Third, financial and balance sheet variables are collected from audited consolidated financial statements, supplemented where necessary by [BankFocus / Orbis Bank Focus] and by supervisory publications of national central banks. Total assets, total equity and net income after tax are taken from the primary statements. The non-performing loan ratio is obtained from the credit risk disclosures in the notes to the accounts or from supervisory returns, since this variable is frequently absent from general financial data providers. Where a bank reports impairment on a basis that departs from the prevailing definition in its jurisdiction, the disclosure is examined individually and the observation is excluded if comparability cannot be established.

The integration of multiple data sources enhances the robustness of the dataset through data triangulation, which reduces measurement error and improves construct validity (Lim, 2024). It also ensures that both financial and non-financial dimensions of firm performance are captured comprehensively, allowing for a more holistic analysis of governance and sustainability relationships.

4.1.5 Key Variables

The key variables in this study are structured into independent, dependent, and control variables, based on established theoretical and empirical literature in corporate governance and ESG research. The independent variable, board gender diversity, is operationalised as the proportion of female directors on the board of each banking firm. A binary critical mass indicator, taking the value of one where three or more women serve on the board, is defined as an alternative proxy. The two measures are not entered into the same specification, since they are highly correlated by construction; the proportional measure is used throughout the baseline models and the critical mass indicator is substituted for it in the robustness analysis, following the threshold argument developed in Section 2.2.7. The dependent variables include ESG performance and financial performance. ESG performance is measured by the MSCI ESG rating, an ordinal assessment on seven grades from CCC to AAA that places a firm relative to its industry peers. The rating is coded 1 for CCC through 7 for AAA. Because the measure is ordinal rather than continuous, the linear specification is checked against an ordered logit in Chapter 5. ESG ratings are increasingly used in academic research as proxies for corporate sustainability performance due to their standardized methodology and wide market acceptance (Clément et al., 2025).

Financial performance is measured using Return on Assets (ROA), which reflects the efficiency of a firm in generating profits from its total asset base. ROA is particularly

appropriate for banking firms because it provides a more stable measure of profitability that is less influenced by differences in capital structure (Mehzabin et al., 2023; Vätavu, 2015). Three bank-level control variables are included in every model, following the determinants of bank profitability set out in Section 2.5. Bank size is measured as the natural logarithm of total assets. Leverage is measured as the ratio of total equity to total assets, so that lower values indicate higher leverage; this definition is preferred to the debt-to-equity ratio because it is more consistently reported across jurisdictions and is not distorted by differences in the classification of hybrid instruments. Asset quality is measured as the ratio of non-performing loans to gross loans. Two governance controls are added: board size, measured as the number of directors, and board independence, measured as the proportion of independent directors.

Country enters the analysis in different roles at each stage of the framework, and the distinction should be stated explicitly to avoid the ambiguity that would otherwise arise between Chapters 3 and 4. At the baseline stage, country is treated as a set of fixed effects, which absorbs all time-invariant institutional, legal and cultural differences across jurisdictions without requiring them to be measured. At the extension stage, where H4 is tested, the institutional environment is measured directly by a continuous index rather than by a categorical dummy, since a single binary variable cannot represent the four distinct mechanisms developed in Section 2.9. The Rule of Law estimate from the Worldwide Governance Indicators is adopted for this purpose, with the Hofstede masculinity-femininity score used as an alternative in the robustness analysis.

Table 4.1 summarises the operational definition, scale and source of each variable.

Variable	Symbol	Operational definition	Scale	Source
Board gender diversity	BGD	Number of female directors divided by total board size	Ratio 0-1	Annual reports

Variable	Symbol	Operational definition	Scale	Source
Critical mass	BGD_CM	Equals 1 if the board has three or more female directors, 0 otherwise	Dummy	Annual reports
ESG performance	ESG	MSCI ESG rating, ordinal 1 (CCC) to 7 (AAA), higher is better	Ratio	[LSEG Refinitiv]
Financial performance	ROA	Net income after tax divided by average total assets	Per cent	Financial statements
Bank size	SIZE	Natural logarithm of total assets	Ratio	Financial statements
Leverage	LEV	Total equity divided by total assets	Ratio	Financial statements
Asset quality	NPL	Non-performing loans divided by gross loans	Per cent	Annual reports / supervisory data
Board size	BSIZE	Total number of directors on the board	Integer	Annual reports
Board independence	BIND	Independent directors divided by total board size	Ratio 0-1	Annual reports
Institutional quality	INST	Rule of Law estimate, -2.5 to +2.5 (extension stage only)	Ratio	Worldwide Governance Indicators

Source: Compiled by Author

4.2 Research Design

This study adopts a quantitative research design with an explanatory and cross-sectional approach, using data for the financial year 2025. The quantitative design is appropriate because the objective of the study is to examine the statistical relationships between board gender diversity, ESG performance, financial performance, and country differences in banking firms.

Rather than exploring subjective perceptions, this study relies on numerical and standardized data obtained from financial reports and ESG databases, allowing for objective measurement and empirical testing of hypotheses.

The study is also deductive in nature, as it begins with established theories such as agency theory, stakeholder theory, and resource dependence theory, and then tests the hypothesised relationships derived from these theories. In addition, the research follows a cross-country comparative design, as it involves banking firms from different institutional environments, enabling the analysis of how country differences influence governance and performance relationships. This design is suitable for capturing variation across developed and emerging markets and provides a broader understanding of ESG and governance dynamics at the global level.

The use of a single cross-section rather than a panel follows from data availability rather than from design preference, and it constrains what the analysis can establish. A cross-section permits the inclusion of country and regional fixed effects, which absorb time-invariant institutional differences, but it does not permit year fixed effects, since every observation falls in the same year and macroeconomic conditions are therefore common to the whole sample. Nor does it allow the explanatory variables to be lagged, so the objection of reverse causality cannot be addressed through the design and is instead acknowledged explicitly in Section 4.8. Because the data cover a single period, the choice between fixed and random effects does not arise and the Hausman test is not applicable; all specifications are estimated by ordinary least squares. For the moderation model, in which the institutional variable is constant within countries, country fixed effects would absorb the variable of interest; that specification is therefore estimated by pooled ordinary least squares with standard errors clustered at the country level, and the reason for the departure is stated in the results.

4.3 Statistical Analysis Methods

The empirical analysis in this study is conducted using IBM SPSS Statistics software, which is widely used in social science and financial research for quantitative data analysis. SPSS is selected due to its capability to perform descriptive statistics, correlation analysis, and multiple regression analysis in a structured and reliable manner (Attwal & Singh, 2024). The use of SPSS also ensures consistency in handling cross-sectional data and facilitates the interpretation of relationships among variables (Kalaoglu & Dumanli Gok, 2024).

The analysis begins with descriptive statistics, which are used to summarize the main characteristics of the dataset. This includes measures such as mean, standard deviation, minimum, and maximum values for all variables, including board gender diversity, ESG performance, and financial performance. Descriptive analysis provides an initial understanding of data distribution and helps identify any abnormal patterns or outliers (Alabi & Bukola, 2023).

After that, a correlation analysis (Pearson correlation) is conducted to examine the strength and direction of relationships between the variables (Temizhan et al., 2022). This step is important to identify preliminary associations among board gender diversity, ESG performance, and financial performance, as well as to assess potential multicollinearity issues before running regression models. The main hypothesis testing is conducted using multiple linear regression analysis in SPSS. This method is appropriate because the study aims to examine the effect of one independent variable on two separate outcomes while holding bank characteristics constant. The estimation proceeds in two stages. The baseline stage comprises two parallel models that share an identical control structure, so that the coefficients reported in the two regression tables are directly comparable. The extension stage adds the models required to test H3, H4 and H5. The specifications are as follows:

BASELINE STAGE

Model 1 (H1) - Sustainable performance

$$\begin{aligned} \text{ESG}(i,t) = & b_0 + b_1 \text{BGD}(i,t) + b_2 \text{SIZE}(i,t) + b_3 \text{LEV}(i,t) + b_4 \text{NPL}(i,t) \\ & + b_5 \text{BSIZE}(i,t) + b_6 \text{BIND}(i,t) \\ & + \text{Country FE} + e(i) \end{aligned}$$

Model 2 (H2) - Financial performance

$$\begin{aligned} \text{ROA}(i,t) = & b_0 + b_1 \text{BGD}(i,t) + b_2 \text{SIZE}(i,t) + b_3 \text{LEV}(i,t) + b_4 \text{NPL}(i,t) \\ & + b_5 \text{BSIZE}(i,t) + b_6 \text{BIND}(i,t) \\ & + \text{Country FE} + e(i) \end{aligned}$$

EXTENSION STAGE

$$\begin{aligned} \text{Model 3 (H3)} \quad \text{ROA}(i,t) = & b_0 + b_1 \text{ESG}(i,t) + b_2 \text{BGD}(i,t) + [\text{controls}] \\ & + \text{Country FE} + e(i) \end{aligned}$$

$$\begin{aligned} \text{Model 4 (H4)} \quad \text{ROA}(i,t) = & b_0 + b_1 \text{BGD_c}(i,t) + b_2 \text{INST_c}(j,t) \\ & + b_3 [\text{BGD_c} \times \text{INST_c}] + [\text{controls}] \\ & + e(i) \end{aligned}$$

Model 5 (H5) Indirect effect BGD -> ESG -> ROA, estimated with
PROCESS Model 4, 5,000 bootstrap resamples

Notes: i = bank, j = country; all variables observed in 2025; _c denotes a mean-centred

variable; [controls] = SIZE, LEV, NPL, BSIZE, BIND.

First, ESG performance is regressed on board gender diversity and control variables to test the relationship between governance structure and sustainability outcomes. Second, financial performance (ROA) is regressed on board gender diversity and control variables to examine the direct effect of board gender diversity on firm profitability. Third, financial performance is regressed on both ESG performance and board gender diversity to test whether ESG acts as an explanatory channel influencing financial outcomes. To test the moderating effect of country differences, an interaction term approach is applied in SPSS. This is done by

creating an interaction term between mean-centred board gender diversity and the mean-centred institutional quality index. Both constituent variables are centred before the product is formed, in order to reduce non-essential multicollinearity between the interaction term and its components and to make the main effects interpretable at the sample mean. The significance of this interaction term is then examined to determine whether the relationship between governance and financial performance varies across countries. In addition, diagnostic tests are conducted within SPSS to ensure the reliability of regression results. These include tests for multicollinearity using the Variance Inflation Factor, with a threshold value of ten applied throughout, and tests for heteroscedasticity using residual plots together with the Breusch-Pagan test. Two further procedures are adopted in view of the distributional characteristics of banking data. All continuous variables are winsorised at the first and ninety-ninth percentiles, because return on assets and the non-performing loan ratio exhibit pronounced tails and a small number of distressed institutions would otherwise exert disproportionate influence on the estimated coefficients. Standard errors are computed as heteroscedasticity-robust using the HC3 estimator. Clustering at the bank level is not defined in a single-period cross-section, since each bank contributes one observation; in the moderation models, where the institutional variable varies at country level while the outcome varies at bank level, standard errors are clustered at the country level to accommodate the resulting within-country dependence. These procedures ensure that the regression assumptions are not violated and that the estimated coefficients are statistically reliable.

4.4 Descriptive Statistics and Data Summary

Before any model is estimated, the dataset is summarised in a form that allows its structure and limitations to be assessed. This summary constitutes the first empirical output of the study and is reported in Chapter 5. It comprises five components.

The first is a statement of the dimensions of the sample: the number of banks, the observation year, and the number of countries represented, together with the number of observations lost at each stage of the exclusion process. The second is a table of descriptive statistics reporting the mean, median, standard deviation, minimum, maximum and number of observations for every variable defined in Table 4.1, presented before and after winsorisation so that the effect of that treatment is visible.

The third is a table showing the distribution of the sample by country and by region, which demonstrates whether the institutional variation required for the extension stage is in fact present and whether any single jurisdiction dominates the sample. The fourth is a Pearson correlation matrix for all continuous variables, reported alongside the Variance Inflation Factors, which serves both as a preliminary indication of bivariate association and as an initial diagnostic for multicollinearity. The fifth is a statement of missing data by variable, together with the treatment applied.

4.5 Presentation of Results

Regression results are presented in the conventional academic format. Each table reports the estimated coefficient for every variable with its standard error in parentheses immediately below, and statistical significance is indicated by asterisks: one asterisk for significance at the ten per cent level, two at the five per cent level and three at the one per cent level. The convention is stated in a note beneath each table. Each column additionally reports the number of observations, the R-squared and adjusted R-squared statistics, the F-statistic, and the fixed effects included in that specification.

The two baseline models are reported side by side in a single table, with identical row ordering, so that the coefficient on board gender diversity in the sustainability equation can be read directly against its counterpart in the profitability equation. Extension models are reported

in a separate table, and robustness specifications in a third. Table 4.2 sets out the template that will be populated once estimation is complete.

Variable	Model 1: ESG	Model 2: ROA
Board gender diversity (BGD)		
Bank size (SIZE)		
Leverage (LEV)		
Asset quality (NPL)		
Board size (BSIZE)		
Board independence (BIND)		
Constant		
Country fixed effects	Yes	Yes
Regional fixed effects	Yes	Yes
Observations		
R-squared / Adjusted R-squared		
F-statistic		

Notes: Standard errors clustered at bank level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4.6 Robustness Checks

Four robustness procedures are specified in advance so that they are not open to the objection of having been selected after the baseline results were observed.

First, the proportional measure of board gender diversity is replaced by the critical mass indicator, which tests directly whether the association is better characterised as a threshold effect than as a linear one. Second, return on assets is replaced by return on equity as the

measure of financial performance, which establishes whether the findings are sensitive to the treatment of capital structure. Third, the sample is restricted to those observations for which no reported figure is recorded as an approximation, which establishes whether the findings depend on the least precisely measured banks. A lagged specification, which would measure board composition before the performance outcome, is not available in a single-year design; it is recommended for further work in Chapter 6. Fourth, the Blau index of gender heterogeneity is substituted for the proportional measure as an alternative operationalisation of diversity.

A fifth specification omits the non-performing loan ratio from the control set. As noted in Section 2.5.4, asset quality may lie partly on the causal path between governance and profitability, in which case controlling for it absorbs part of the effect under investigation. Reporting the specification with and without this control makes the sensitivity of the results to that judgement transparent rather than leaving it implicit.

4.7 Reliability and Validity

The reliability and validity of the study are ensured through the use of high-quality secondary data sources and consistent measurement approaches (Ghanad, 2023). The data are collected from internationally recognized databases such as official annual reports of banking firms. These sources are widely used in academic research and financial industry analysis, ensuring high levels of data reliability and credibility. Reliability in this study is enhanced through the use of audited financial statements and through the use of a single ESG rating provider throughout the sample. It should be stated plainly, however, that this does not eliminate measurement concern. As documented in Section 2.4.3, composite ESG scores diverge substantially across providers, with reported correlations between the major agencies well below the level ordinarily regarded as acceptable for a measure of the same underlying construct. Relying on one provider secures internal consistency, so that firms are ranked on a

common basis, but it does not secure construct validity in the sense of establishing that the score measures sustainability performance as such. The results of this study are therefore conditional on the methodology of the chosen provider, and this is recorded among the limitations rather than presented as a resolved issue.

Validity is ensured through careful operationalization of variables based on established literature (Putri, 2025). Board gender diversity is measured as the percentage of female directors, which is a widely accepted proxy in corporate governance studies (Ramadan & Hassan, 2022). ESG performance is measured using composite ESG scores, which capture environmental, social, and governance dimensions in a standardized form (Meiden & Silaban, 2023). Financial performance is measured using ROA, which is commonly used in banking research due to its stability and comparability across firms (Yuan et al., 2022). Furthermore, construct validity is strengthened by aligning all variables with theoretical foundations such as agency theory, stakeholder theory, and resource dependence theory. This ensures that the empirical model accurately reflects the conceptual relationships proposed in the study.

4.8 Limitations, Endogeneity and Ethical Considerations

Three limitations of the research design warrant explicit acknowledgement, since the hypotheses are expressed in causal language while the estimation strategy supports claims of association.

The first is endogeneity. Board composition is not assigned at random. Banks that perform well may be better placed to attract experienced women directors, in which case the association runs from performance to composition rather than the reverse; and unobserved characteristics such as managerial quality or organisational culture may drive both. Section 2.7.7 documents this concern in the existing literature. The cross-sectional design offers little mitigation. Firm-level unobserved heterogeneity cannot be absorbed by firm fixed effects,

common shocks cannot be absorbed by year effects, and the explanatory variables cannot be lagged. Country and regional fixed effects absorb time-invariant institutional differences but not bank-level unobservables, so the concern is acknowledged rather than addressed. A full identification strategy, whether through instrumental variables or through the exploitation of a regulatory discontinuity such as the introduction of a national quota, lies beyond the scope of this study and is recommended for further work. Findings are accordingly interpreted as conditional associations.

The second is measurement. ESG performance is captured by the composite score of a single provider, with the consequences set out in Section 4.7. Board gender diversity is captured by observable composition and does not measure the participation of individual directors in committee work or in boardroom deliberation, so a board may satisfy the critical mass threshold while remaining substantively unchanged. Financial performance is captured by an accounting measure, so the findings speak to operating profitability rather than to valuation.

The third is sample composition. The requirement that banks be listed throughout the observation period excludes institutions that failed, merged or were nationalised, which introduces survivorship into the sample and may bias it toward more stable institutions. The requirement that ESG coverage be available biases the sample toward larger banks and toward jurisdictions with well-developed disclosure regimes.

With respect to ethical considerations, this study relies exclusively on secondary data drawn from publicly available sources, namely audited financial statements, governance disclosures, commercial databases accessed under institutional licence, and published indicators of institutional quality. No human participants are involved, no primary data are collected, and no personal data beyond the names and board roles already disclosed in public corporate filings are processed. Individual directors are not identified in the analysis, which uses aggregate board composition only. All sources are cited in accordance with the referencing

conventions of the programme, and the dataset will be retained in a form that permits verification of the results.

The empirical analysis is conducted in IBM SPSS Statistics [version 29], with mediation analysis performed using the PROCESS macro [version 4.2].

Chapter 5. The Empirical Findings & Discussion

This chapter reports the empirical results of the study and discusses them against the theoretical framework developed in Chapter 3 and the estimation strategy specified in Chapter 4. The chapter proceeds in the order in which the analysis was conducted rather than in the order in which the hypotheses were numbered, so that the reader can follow the construction of the evidence from the raw sample through to the tested relationships.

Section 5.1 documents the construction of the final estimation sample, including the verification exercise that corrected seven observations in the board composition data, and records the points at which the realised dataset departs from the variable set specified in Chapter 4. Section 5.2 presents the descriptive statistics and the distribution of the sample across countries, regions and market classifications. Section 5.3 reports the correlation matrix and the full set of regression diagnostics. Sections 5.4 to 5.9 present the estimated models in the order in which the hypotheses were formulated: the association between board gender diversity and ESG performance, the association between board gender diversity and financial performance, the critical mass specification, the association between ESG performance and financial performance, the moderating role of institutional context, and the mediation test. Section 5.10 reports the robustness analysis, Section 5.11 discusses the findings in relation to the prior literature, and Section 5.12 summarises the outcome of hypothesis testing.

Three features of the results should be stated at the outset, since they shape the interpretation of everything that follows. First, the raw bivariate association between board gender diversity and return on assets in this sample is negative, and it is negative because the banks with the least gender-diverse boards are concentrated in jurisdictions where accounting profitability is structurally highest. Once the institutional context is held constant, the association is statistically indistinguishable from zero. Second, and in contrast, the conditioning of that association on institutional quality does receive support: the interaction between board

gender diversity and the institutional environment is positive and significant in three of the four specifications in which it is estimated. Third, the ESG rating behaves in the same way: it is unrelated to board composition, unrelated to profitability once size and region are held constant, and it transmits nothing between the two. Each point is developed below.

5.1 Sample Construction and Realised Variable Set

5.1.1 The final estimation sample

The dataset comprises 100 publicly listed banking institutions drawn from 29 countries and observed for the financial year 2025. No observation was lost to the exclusion criteria set out in Section 4.1.3, because the sample was assembled by the researcher on the basis of those criteria rather than filtered from a larger population after the fact. The effective unit of analysis is the bank rather than the bank-year. Following the verification exercise described in Section 5.2.2, board size is available for every institution, so all specifications are estimated on the full sample of 100 observations.

5.1.2 Verification and correction of the board composition data

Board gender diversity is the independent variable of this study, and the credibility of every result below rests on it being measured correctly. Before estimation, the observations at the extremes of the diversity distribution were checked against primary sources, on the reasoning that recorded values of zero are the most likely to reflect a coding failure rather than a genuine absence of women. Seven institutions were examined. Five proved to be recorded incorrectly.

The corrections are set out in Table 5.1. Four of the five concern banks in South Korea, where the Act on the Corporate Governance of Financial Companies and successive supervisory interventions have raised female representation on the boards of the major financial

holding companies substantially since 2022. KB Financial, Shinhan Financial and Woori Financial were each recorded as having no women on the board; the correct figures, taken from company disclosures and from reporting on the March 2025 annual general meetings, are three of nine, four of eleven and two of nine respectively. Bank of East Asia was likewise recorded at zero, whereas its board of fifteen includes one woman. State Bank of India was recorded at zero and in fact has one woman among eleven directors.

Table 5.1 Corrections to the board composition data

Bank	Country	Recorded women	Verified women	Verified board size	CM before	CM after	Source
KB Financial	South Korea	0	3	9	0	1	Form 20-F FY2025; company governance disclosure
Shinhan Financial	South Korea	0	4	11	0	1	Reporting on March 2025 AGM outcomes
Hana Financial	South Korea	2	3	11	0	1	Reporting on March 2025 AGM outcomes
Woori Financial	South Korea	0	2	9	0	0	Reporting on March 2025 AGM outcomes
Bank of East Asia	Hong Kong	0	1	15	0	0	Stock exchange filing, September 2025
State Bank of India	India	0	1	11	0	0	Composition of the Central Board, investor relations
Al Rajhi Bank	Saudi Arabia	0	0	11	0	0	Board elected November 2023 for a three-year term

Source: Compiled by author from the sources listed.

Two features of this exercise deserve emphasis because they bear on the reliability of the remaining data. The first is that Hana Financial was not among the institutions initially

flagged. Its recorded value of two women, or 16.67 per cent, is unremarkable and would not have attracted attention; it was found to be wrong only because it appeared alongside the other Korean banks during verification. The implication is that errors are not confined to the conspicuous cases, and that the ninety-three institutions not examined here cannot be assumed correct. The second is that one of the seven checks confirmed the recorded value: Al Rajhi Bank does have an all-male board. The verification therefore discriminates rather than uniformly revising the data upward.

Two further observations arise. Verification supplied the total board size for all seven institutions, including the six for which it could not previously be derived, so the sample now carries a complete board size variable. And Al Rajhi Bank is an Islamic bank, which Section 4.1.3 excludes from the baseline sample; its presence is an inconsistency between the stated population definition and the realised sample, and a robustness specification omitting it is reported in Section 5.8.

The correction of seven observations should not be represented as establishing the accuracy of the dataset as a whole. What it establishes is that the board composition data contained errors at a rate high enough to matter, that those errors were large enough to change the critical mass classification of three banks, and that a full audit of all one hundred institutions against annual reports remains outstanding. This is recorded among the limitations in Section 6.6.

5.1.3 Departures from the variable set specified in Chapter 4

Five points at which the realised dataset differs from the variable set specified in Chapter 4 are recorded here in full rather than left for the reader to infer.

The ESG variable requires an explicit caution. The ESG measure used here is the MSCI ESG rating, recorded on the seven-grade scale from CCC to AAA and coded ordinally from 1

to 7. Three features of it must be stated plainly, because they bear on how much weight the ESG results can carry.

First, the values were supplied to the researcher as a compiled table rather than exported from a licensed terminal, and the compilation does not carry a source URL or a retrieval date for each bank. Four entries were verified against primary reporting during preparation of this chapter — the MSCI ratings of KB Financial, Shinhan Financial, Hana Financial and Woori Financial, each confirmed as AAA from company announcements dated between April and November 2025 — and all four matched. That is reassuring but it is four checks in a hundred. Until each value carries a citable source, the ESG results in Sections 5.5, 5.8 and 5.10 should be read as provisional in the same sense, and for the same reason, as the board composition data discussed above.

Second, the distribution is skewed toward the upper grades: 70 of the 100 banks are rated AA or AAA, which MSCI classifies as Leader, 28 fall in the Average band and only two are Laggards. Industry reporting indicates that the AAA grade is awarded to roughly the top five to nine per cent of banks assessed, against 16 per cent in this sample. Part of this is expected, since the sample consists of the largest listed banks in each market rather than the full rated universe, and large banks disclose more and are rated more favourably. But the compression at the top reduces the variation available to the estimator and is one reason the ESG coefficients below are imprecisely estimated. Three institutions in particular — ICBC, State Bank of India and Al Rajhi Bank, each recorded at AA — sit high relative to what their published sustainability benchmarking would suggest and should be the first entries verified.

Third, the rating is ordinal rather than a composite score on a nought-to-one-hundred scale as Table 4.1 specifies. Section 4.1.5 and Table 4.1 require amendment to describe an ordinal measure and to name MSCI as the provider in place of the provider originally contemplated. The models below treat the coded rating as a continuous variable, which is

standard in this literature, and Section 5.5 reports an ordered logit as a robustness check against that treatment. Two values in the compilation carried an unexplained marker; a specification excluding those two banks is reported and changes nothing.

Board independence is absent. Chapter 4 specifies board independence, measured as the proportion of independent directors, as one of two governance controls. The variable is not present in the dataset and is omitted from all models. Its omission is a source of potential omitted-variable bias in a specific direction: if independent directors are simultaneously more likely to be women and associated with different profitability outcomes, part of what is attributed to gender diversity in the models below may reflect board independence instead.

Board size is derived for most institutions. Chapter 4 specifies board size as a directly observed count of directors. For the ninety-three institutions not covered by the verification exercise, the dataset records the number of female directors and the female proportion, from which total board size is recovered as the ratio of the two. The recovered figures are plausible, with a sample mean of 12.81 directors and a range from 7 to 27, and are consistent with the board sizes of large listed banks. For the seven verified institutions the figure is observed directly.

Leverage is measured differently from the specification. Table 4.1 defines leverage as total equity divided by total assets. The dataset reports the debt-to-equity ratio. The two are related by a deterministic transformation, and the implied equity ratio has been computed as the reciprocal of one plus the debt-to-equity ratio and reported as a robustness specification. It should be noted plainly that the implied equity ratios are high for banking institutions, with a sample mean of 0.360, whereas the equity of a large commercial bank is ordinarily in the region of 5 to 10 per cent of total assets. This suggests that the debt-to-equity figures in the dataset are not computed on a conventional total-liabilities-to-total-equity basis. The variable is retained because it carries genuine cross-sectional variation and behaves sensibly in the models, but it

should be interpreted as a general index of capital structure rather than as a precisely defined regulatory leverage measure, and its definition should be verified against source before final submission.

A minority of values are recorded as approximations. Sixteen non-performing loan figures, ten asset figures and two debt-to-equity figures are recorded in the source workbook with a tilde denoting approximation. These have been treated as point estimates in the main analysis. A robustness specification restricted to the 78 observations with no approximated value is reported in Section 5.8, and the results are unchanged.

Two variables required by Chapter 4 but absent from the source workbook were obtained externally. The Rule of Law estimate from the Worldwide Governance Indicators was merged in from the World Bank's published 2024 figures, matched on country; coverage is complete, with values ranging from -1.154 for Mexico to 2.021 for Finland. The Hofstede masculinity-femininity score, named in Section 4.1.5 as the alternative measure of institutional context for the robustness analysis, was taken from the published dimension matrix. Four countries in the sample — Egypt, Qatar, the United Arab Emirates and Saudi Arabia — have no individual Hofstede score and are assigned the value of the Arab countries cluster, so they cannot be distinguished from one another on this dimension. Kenya is assigned the East Africa cluster value, and South Africa the value for the white South African sample, since that is the only entry for which scores exist. These substitutions are a limitation of the measure rather than of the analysis, and are noted where the variable is used.

A note on software is also required. Chapter 4 specifies IBM SPSS Statistics. The estimation reported here was performed using ordinary least squares with heteroscedasticity-consistent standard errors, which SPSS reproduces through its regression procedure with the HC3 estimator, and the moderation analysis follows the mean-centred product-term approach

implemented in the PROCESS macro. The results are therefore reproducible in SPSS, and the accompanying dataset has been prepared in a format suitable for direct import.

5.1.4 Variable treatment

All continuous variables were winsorised at the first and ninety-ninth percentiles as specified in Section 4.3. The treatment affects the tails of return on assets, the non-performing loan ratio, total assets, the debt-to-equity ratio and implied return on equity. Its principal effect is on the non-performing loan ratio, whose maximum falls from 15.56 to 10.53 per cent, and on return on equity, whose standard deviation falls from 2.274 to 2.023. The effect on the mean of any variable is negligible, and Table 5.2 reports the distribution before and after treatment so that the reader may judge this directly. Bank size is computed as the natural logarithm of total assets after winsorisation.

Standard errors are heteroscedasticity-consistent throughout, using the HC3 estimator. As Section 4.3 notes, clustering at the bank level is not defined in a single-period cross-section, since each bank contributes one observation. In the moderation models, where the explanatory variable of interest varies at country level while the outcome varies at bank level, standard errors are clustered at the country level, which is the appropriate correction for the resulting within-country dependence.

5.2 Descriptive Statistics

5.2.1 Distribution of the variables

Table 5.2 reports the descriptive statistics for all variables entering the analysis, before and after winsorisation.

Table 5.2 Descriptive statistics, before and after winsorisation

Variable	N	Mean	Median	SD	Min	Max	Skewness	Excess kurtosis
<i>Before winsorisation</i>								
ROA (%)	100	1.193	0.940	0.986	0.180	6.190	3.107	11.859
Total assets (USD bn)	100	1053.05	536.45	1458.49	12.90	7643.00	2.643	7.512
Bank size (ln assets)	100	6.175	6.285	1.358	2.557	8.942	-0.303	-0.058
Leverage (D/E)	100	2.766	2.675	1.989	0.100	9.260	0.706	0.147
Implied equity ratio	100	0.360	0.272	0.207	0.097	0.909	0.871	-0.346
NPL (%)	100	2.047	1.325	2.191	0.300	15.560	3.399	15.139
Board gender diversity	100	0.315	0.333	0.141	0.000	0.727	0.136	-0.185
Board size	100	12.810	12.000	3.100	7.000	27.000	1.422	3.802
Implied ROE (%)	100	3.696	3.110	2.274	0.476	15.431	1.948	6.154
Rule of Law	100	0.725	0.962	0.791	-1.154	2.021	-0.666	-0.552
Blau index	100	0.392	0.444	0.112	0.000	0.500	-1.203	0.668
ESG rating (1-7 ordinal)	100	5.660	6.000	1.085	1.000	7.000	-1.538	3.626
Hofstede masculinity	100	55.670	61.000	16.238	5.000	95.000	-0.697	2.040
<i>After winsorisation (1%/99%)</i>								
ROA (%)	100	1.194	0.940	0.984	0.279	6.170	3.111	11.859
Total assets (USD bn)	100	1046.44	536.45	1429.42	15.28	6979.70	2.550	6.847
Bank size (ln assets)	100	6.176	6.285	1.352	2.726	8.851	-0.292	-0.116
Leverage (D/E)	100	2.757	2.675	1.957	0.150	8.250	0.609	-0.242
Implied equity ratio	100	0.360	0.272	0.206	0.108	0.870	0.854	-0.417
NPL (%)	100	1.998	1.325	1.917	0.399	10.531	2.474	6.900
Board gender diversity	100	0.315	0.333	0.141	0.000	0.727	0.136	-0.185

Variable	N	Mean	Median	SD	Min	Max	Skewness	Excess kurtosis
Board size	100	12.810	12.000	3.100	7.000	27.000	1.422	3.802
Implied ROE (%)	100	3.636	3.110	2.023	0.529	9.315	1.095	0.796
Rule of Law	100	0.725	0.962	0.791	-1.154	2.021	-0.666	-0.552
Hofstede masculinity	100	55.670	61.000	16.238	5.000	95.000	-0.697	2.040

Source: Author's calculation.

The same specification is reported below in the output format of IBM SPSS Statistics, so that the model summary, the analysis of variance and the coefficient table can be read as they appear in the software. Standardised coefficients are included because they allow the relative contribution of variables measured on different scales to be compared directly.

Table 5.3 — Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Std. Error of Skewness
ESG rating (1-7)	100	1.000	7.000	5.6600	1.08451	-1.538	0.241
Board gender diversity	100	0.000	0.727	0.3146	0.14081	0.136	0.241
Critical mass (0/1)	100	0.000	1.000	0.7600	0.42923	-1.218	0.241
Return on assets (%)	100	0.279	6.170	1.1937	0.98411	3.111	0.241
Bank size (ln assets)	100	2.726	8.851	6.1758	1.35151	-0.292	0.241
Leverage (D/E)	100	0.149	8.250	2.7567	1.95727	0.609	0.241
Asset quality (NPL %)	100	0.399	10.531	1.9978	1.91712	2.474	0.241
Board size	100	7.000	27.000	12.8100	3.10000	1.422	0.241
Rule of Law	100	-1.154	2.021	0.7248	0.79104	-0.666	0.241
Hofstede masculinity	100	5.000	95.000	55.6700	16.23816	-0.697	0.241

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Std. Error of Skewness
Total assets (USD bn)	100	15.276	6979.70 0	1046.441 8	1429.41736	2.550	0.241
Return on equity (%)	100	0.529	9.315	3.6355	2.02300	1.095	0.241
Valid N (listwise)	100						

Notes: Values after winsorisation at the 1st and 99th percentiles. Skewness for an ordinal variable is reported for completeness only.

Three features of the distribution warrant comment. Return on assets averages 1.194 per cent with a median of 0.940 per cent, and the gap between the two reflects a pronounced right tail: the distribution has a skewness of 3.11 and excess kurtosis of 11.86 even after winsorisation, driven by a small group of high-margin institutions in Africa and Latin America. Capitec at 6.17 per cent, Commercial International Bank at 6.19 per cent and Equity Group at 4.00 per cent are the extreme cases, and their influence on the estimates is assessed formally in Section 5.4.3 and addressed in the robustness analysis.

The non-performing loan ratio is similarly right-skewed, with a median of 1.325 per cent against a mean of 1.998 per cent. Winsorisation reduces the maximum from 15.56 to 10.53 per cent but does not alter the shape of the distribution materially, and the variable remains the most heavily tailed of the controls.

Board gender diversity, by contrast, is close to symmetric, with a mean of 0.315 and a median of 0.333, a skewness of 0.14 and negative excess kurtosis. The absence of skew in the diversity variable matters for the analysis: it means that the failure to find a direct effect below cannot be attributed to a degenerate distribution of the independent variable. The sample contains genuine and well-spread variation in board composition, ranging from a board with no women at all to one that is 72.7 per cent female.

5.2.2 The profile of board gender diversity

Table 5.4 reports the distribution of the number of female directors across the sample, following the corrections described in Section 5.2.2.

Table 5.4 Distribution of female directors and critical mass status

Number of female directors	Number of banks	Cumulative	Critical mass status
0	1	1	Below
1	8	9	Below
2	15	24	Below
3	16	40	At/above
4	24	64	At/above
5	17	81	At/above
6	9	90	At/above
7	6	96	At/above
8	3	99	At/above
10	1	100	At/above
Total	100		76 at/above, 24 below

Source: Author's calculation.

Seventy-six of the 100 banks meet the critical mass threshold of three or more female directors. Sixty banks have boards that are at least 30 per cent female, and 29 have boards that are at least 40 per cent female. Only one bank in the sample, Al Rajhi Bank, has no female directors at all.

This distribution is itself a finding worth recording, and the corrections of Section 5.2.2 sharpen it. The critical mass literature reviewed in Section 2.2.7 developed against a background in which women were tokens on most boards; in this sample of large listed banks in 2025, boards with three or more women are the substantial majority, and boards with none

are almost extinct. One implication is that the threshold identified by Kanter (1977) and confirmed by Torchia, Calabro and Huse (2011) may no longer discriminate usefully among large international banks. A second implication, developed in Section 5.6, is statistical: with only 24 banks below the threshold, the critical mass specification has limited power to detect a threshold effect even if one exists.

5.2.3 Distribution of the sample across countries and regions

Table 5.5 reports the composition of the sample by region and by market classification. The full country-level breakdown, which shows that the United States alone contributes 20 per cent of the sample and that thirteen of the 29 countries contribute two banks or fewer, is available in the accompanying dataset.

Table 5.5 Sample composition by region and by market classification

Grouping	N	Mean BGD	Critical mass rate	Mean ROA (%)	Mean NPL (%)	Mean assets (USD bn)	Mean Rule of Law
Western Europe	25	0.407	0.960	0.742	1.935	1232.9	1.302
North America	23	0.343	1.000	1.009	0.710	1055.1	1.027
Developed Asia-Pacific	18	0.335	0.722	0.646	1.338	817.2	1.334
Latin America	10	0.266	0.500	1.839	2.903	225.5	-0.431
Africa	10	0.288	0.600	2.745	6.394	80.5	-0.233
Emerging Asia	9	0.155	0.556	1.147	1.396	3418.3	-0.339
Middle East	5	0.088	0.000	1.950	2.080	336.4	0.401
Developed markets	66	0.365	0.909	0.809	1.345	—	1.215
Emerging markets	34	0.217	0.471	1.939	3.410	—	-0.226

Source: Author's calculation.

The regional pattern is the central descriptive fact of this study and it anticipates the regression results. Banks in developed markets have substantially more gender-diverse boards than banks in emerging markets, with mean female representation of 36.5 per cent against 21.7 per cent, a difference that is significant at the one per cent level (Welch $t = 5.569$, $p < 0.001$). Ninety-one per cent of developed-market banks meet the critical mass threshold, against 47 per cent of emerging-market banks; the association between market classification and critical mass status is significant ($\chi^2 = 21.31$, $p < 0.001$).

At the same time, banks in emerging markets are substantially more profitable on an accounting basis, with a mean return on assets of 1.939 per cent against 0.809 per cent in developed markets, and this difference is also significant at the one per cent level (Welch $t = -4.765$, $p < 0.001$). The Middle East, with the lowest mean diversity in the sample at 8.8 per cent and no bank meeting the critical mass threshold, records a mean return on assets of 1.950 per cent; Western Europe, with the highest mean diversity at 40.7 per cent and a critical mass rate of 96 per cent, records 0.742 per cent.

The interpretive consequence is immediate. Any bivariate comparison of diversity and profitability in this sample will produce a negative association, and that association will reflect the fact that high-margin banking markets and low-diversity governance regimes coincide geographically. Establishing whether board composition has any independent relationship with profitability therefore requires that this geographic confound be removed, and the specifications in Section 5.5 are designed accordingly.

It is worth noting that the corrections of Section 5.2.2 raised the mean diversity of the Developed Asia-Pacific region from 27.4 to 33.5 per cent and its critical mass rate from 55.6 to 72.2 per cent. The uncorrected data would have understated the diversity of developed Asian banking boards substantially, and would have exaggerated the contrast between that region and Western Europe.

5.3 Correlation Analysis and Diagnostic Testing

5.3.1 Bivariate correlations

Table 5.6 reports the Pearson correlation matrix for the continuous variables, computed on the winsorised data.

Table 5.6 Pearson correlation matrix

	ROA	BGD	CM	SIZE	LEV	NPL	BSIZE	INST	MAS
ROA	1.000								
BGD	-0.275***	1.000							
CM	-0.340***	0.725***	1.000						
SIZE	-0.630***	0.096	0.192*	1.000					
LEV	-0.412***	0.295***	0.210**	0.466***	1.000				
NPL	0.290***	-0.035	-0.164	-0.440***	-0.176*	1.000			
BSIZE	-0.185*	-0.140	0.132	0.381***	0.016	-0.051	1.000		
INST	-0.533***	0.447***	0.383***	0.319***	0.407***	-0.426***	-0.072	1.000	
MAS	-0.077	-0.117	0.022	0.173*	-0.133	-0.123	0.255**	-0.140	1.000
ESG	-0.208**	0.162	0.148	0.324***	0.279***	-0.109	0.023	0.266***	-0.073

Notes: N = 100. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. BGD = board gender diversity; CM = critical mass indicator; SIZE = natural logarithm of total assets; LEV = debt-to-equity ratio; NPL = non-performing loan ratio; BSIZE = board size; INST = Rule of Law estimate; MAS = Hofstede masculinity score; ESG = MSCI ESG rating coded 1 (CCC) to 7 (AAA). The ESG row reports its correlation with each column variable.

Source: Author's calculation.

The same specification is reported below in the output format of IBM SPSS Statistics, so that the model summary, the analysis of variance and the coefficient table can be read as

they appear in the software. Standardised coefficients are included because they allow the relative contribution of variables measured on different scales to be compared directly.

Table 5.7 — Correlations

		ESG rating	Board gender diversity	Return on assets	Bank size	Leve rage	Asset quality	Board size	Rule of Law
ESG rating	Pearson Correlation	1	0.162	-0.208*	0.324 **	0.279 **	-0.109	0.023	0.266**
	Sig. (2- tailed)		.107	.038	.001	.005	.278	.823	.007
	N	100	100	100	100	100	100	100	100
Board gender diversity	Pearson Correlation	0.162	1	-0.275**	0.096	0.295 **	-0.035	-0.140	0.447**
	Sig. (2- tailed)	.107		.006	.341	.003	.733	.165	<.001
	N	100	100	100	100	100	100	100	100
Return on assets	Pearson Correlation	- 0.208*	-0.275**	1	- 0.630 **	- 0.412 **	0.290**	-0.185	- 0.533**
	Sig. (2- tailed)	.038	.006		<.001	<.001	.003	.065	<.001
	N	100	100	100	100	100	100	100	100
Bank size	Pearson Correlation	0.324* *	0.096	-0.630**	1	0.466 **	-0.440**	0.381* *	0.319**
	Sig. (2- tailed)	.001	.341	<.001		<.001	<.001	<.001	.001
	N	100	100	100	100	100	100	100	100

		ESG rating	Board gender diversity	Return on assets	Bank size	Leve rage	Asset quality	Board size	Rule of Law
Leverage	Pearson Correlation	0.279* *	0.295**	-0.412**	0.466 **	1	-0.176	0.016	0.407**
	Sig. (2- tailed)	.005	.003	<.001	<.001		.080	.874	<.001
	N	100	100	100	100	100	100	100	100
Asset quality	Pearson Correlation	-0.109	-0.035	0.290**	- 0.440 **	- 0.176	1	-0.051	- 0.426**
	Sig. (2- tailed)	.278	.733	.003	<.001	.080		.617	<.001
	N	100	100	100	100	100	100	100	100
Board size	Pearson Correlation	0.023	-0.140	-0.185	0.381 **	0.016	-0.051	1	-0.072
	Sig. (2- tailed)	.823	.165	.065	<.001	.874	.617		.478
	N	100	100	100	100	100	100	100	100
Rule of Law	Pearson Correlation	0.266* *	0.447**	-0.533**	0.319 **	0.407 **	-0.426**	-0.072	1
	Sig. (2- tailed)	.007	<.001	<.001	.001	<.001	<.001	.478	
	N	100	100	100	100	100	100	100	100

Notes: ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Board gender diversity is negatively and significantly correlated with return on assets ($r = -0.275$, $p = 0.006$), and the critical mass indicator more strongly so ($r = -0.340$, $p = 0.001$). Taken alone, these correlations would suggest that gender-diverse boards are associated with lower profitability, which is the opposite of the direction hypothesised in H2.

The remaining columns of the matrix indicate why that inference would be premature. Return on assets is very strongly negatively correlated with bank size ($r = -0.630$, $p < 0.001$) and with the Rule of Law index ($r = -0.533$, $p < 0.001$), while board gender diversity is strongly positively correlated with the Rule of Law index ($r = 0.447$, $p < 0.001$) and uncorrelated with bank size ($r = 0.096$, $p = 0.341$). The structure is that of a classic confound: institutional quality raises board gender diversity and lowers accounting profitability, so a negative diversity-profitability correlation arises mechanically even in the absence of any relationship between the two.

Two supplementary regressions confirm each leg of this structure. Regressing board gender diversity on the Rule of Law index and the bank-level controls yields a coefficient on institutional quality of 0.082 ($SE = 0.021$, $p < 0.001$), with the institutional variable alone accounting for the bulk of an R^2 of 0.255; none of the bank-level characteristics is significant. Regressing return on assets on the Rule of Law index alone yields a coefficient of -0.663 ($SE = 0.156$, $p < 0.001$) and an R^2 of 0.284. Institutional context, in other words, predicts both variables strongly and in opposite directions.

The ESG rating displays the same structure as board gender diversity, which is the central observation of this section. It correlates negatively with return on assets ($r = -0.208$, $p = 0.038$), positively with bank size ($r = 0.324$, $p = 0.001$) and positively with the Rule of Law index ($r = 0.266$, $p = 0.007$), while its correlation with board gender diversity is positive but insignificant ($r = 0.162$, $p = 0.107$; Spearman 0.125, $p = 0.216$). Larger banks in stronger-institution jurisdictions hold higher ESG ratings and earn lower accounting returns, so the negative ESG-profitability correlation arises from the same composition effect that produces the negative diversity-profitability correlation. Neither is evidence about governance or sustainability as such.

The Hofstede masculinity score behaves differently from the Rule of Law index and this is informative. It is essentially uncorrelated with return on assets ($r = -0.077$, $p = 0.447$) and only weakly and insignificantly correlated with board gender diversity ($r = -0.117$, $p = 0.247$). Cultural masculinity is therefore not a source of the confound that institutional quality creates, which makes it a useful independent check on the moderation result in Section 5.7 rather than merely a second measurement of the same underlying construct.

The Spearman rank correlations, computed as a check on the influence of the tails, reproduce the same pattern with slightly attenuated magnitudes: the rank correlation between board gender diversity and return on assets is -0.244 and between the Rule of Law index and return on assets is -0.613 . The relationships are not artefacts of the extreme observations.

No correlation among the explanatory variables exceeds the conventional threshold of 0.80 at which multicollinearity becomes a serious concern. The highest is between board gender diversity and the critical mass indicator at 0.725, which is expected by construction; consistent with Section 4.1.5, the two measures are never entered into the same specification.

5.3.2 Multicollinearity

Table 5.8 reports variance inflation factors for the explanatory variables in each of the principal specifications.

Table 5.8 Variance inflation factors

Variable	Baseline (BGD)	Critical mass (CM)	Moderation with interaction
Board gender diversity	1.122	—	1.342
Critical mass	—	1.082	—
Rule of Law (centred)	—	—	1.974
BGD $\times$ Rule of Law	—	—	1.184

Variable	Baseline (BGD)	Critical mass (CM)	Moderation with interaction
Bank size	1.912	1.911	1.932
Leverage	1.428	1.372	1.514
Asset quality	1.271	1.287	1.506
Board size	1.273	1.261	1.287

Source: Author's calculation.

All variance inflation factors are below 2.0, far beneath the threshold of ten adopted in Section 4.3 and beneath the more conservative threshold of five that is sometimes applied. Multicollinearity is not a concern in any specification. Notably, the interaction term in the moderation model carries a variance inflation factor of 1.184, confirming that the mean-centring procedure specified in Section 4.3 has effectively removed the non-essential collinearity between the product term and its constituents.

5.3.3 Regression diagnostics

Table 5.9 reports the diagnostic tests for the principal specifications.

Table 5.9 Regression diagnostics

Specification	Breusch-Pagan LM (p)	Jarque-Bera (p)	Ramsey RESET F (p)	Max Cook's D	Obs. with D > 4/N
Baseline, no fixed effects	19.72 (0.001)	410.32 (0.000)	43.86 (0.000)	0.470	7
Baseline, with board size	21.12 (0.001)	408.45 (0.000)	44.91 (0.000)	0.440	8
Baseline, region fixed effects	62.72 (0.000)	100.34 (0.000)	104.25 (0.000)	0.430	9

Specification	Breusch-Pagan LM (p)	Jarque-Bera (p)	Ramsey RESET F (p)	Max Cook's D	Obs. with D > 4/N
Critical mass, region fixed effects	63.38 (0.000)	100.70 (0.000)	102.95 (0.000)	0.457	9
Moderation	20.65 (0.004)	410.54 (0.000)	53.49 (0.000)	0.413	8

Source: Author's calculation.

Three diagnostic concerns arise and each is addressed.

Heteroscedasticity is present in every specification, with the Breusch-Pagan test rejecting the null of constant error variance at the one per cent level throughout. This is expected in a cross-section of banks whose asset bases span three orders of magnitude, and it is the reason that heteroscedasticity-consistent standard errors are used in all reported models rather than conventional standard errors. Under HC3 the inference is valid notwithstanding the non-constant error variance.

Residuals depart from normality in every specification, with Jarque-Bera statistics rejecting the null decisively. The departure is driven by the same right tail in return on assets that was visible in Table 5.2. With a sample of 100 the central limit theorem provides some protection, but the concern is not dismissed on that basis alone: Section 5.8 reports a specification in which the dependent variable is the natural logarithm of return on assets, which substantially reduces the skew, and the substantive conclusion is unchanged.

The Ramsey RESET test rejects the null of correct functional form in every specification. This is the most serious of the three diagnostics and it indicates that the relationship between the controls and return on assets is not adequately captured by a linear specification in levels. The most likely source is the relationship between size and profitability, which is plausibly logarithmic rather than linear in the outcome as well as in the regressor. Again, the logarithmic specification in Section 5.8 addresses this directly, and the coefficient on board gender diversity

in that specification is 0.105 with a standard error of 0.417, which is closer to zero than in the levels specification and of the opposite sign. The functional-form problem therefore affects the precision with which the control relationships are estimated, but it does not generate the finding on the variable of interest.

Influence analysis identifies three observations with Cook's distances substantially above the rest of the sample: Capitec Bank Holdings of South Africa, with a return on assets of 6.17 per cent on an asset base of USD 12.9 billion; Commercial International Bank of Egypt, with a return on assets of 6.19 per cent; and Equity Group of Kenya, at 4.00 per cent. All three are small, high-margin institutions in emerging markets. None exceeds the conventional threshold of unity, so none is excluded from the main analysis, but a specification omitting all three is reported in Section 5.8, and it moves the coefficient on board gender diversity toward zero.

5.4 Board Gender Diversity and ESG Performance (H1)

Table 5.10 reports the estimation of the relationship between board gender diversity and ESG performance, corresponding to Model 1 of Section 4.3 and testing H1.

Table 5.10 Board gender diversity and ESG performance

Variable	(1)	(2)	(3)	(4)	(5)
Board gender diversity	0.762	0.673	0.843		-0.410
	(0.683)	(0.665)	(1.021)		(1.208)
Critical mass (≥ 3 women)				0.447	
				(0.377)	
Bank size	0.216**	0.253**	0.211*	0.224*	0.135
	(0.107)	(0.129)	(0.122)	(0.117)	(0.152)

Variable	(1)	(2)	(3)	(4)	(5)
Leverage	0.072	0.064	0.029	0.018	0.096
	(0.062)	(0.061)	(0.114)	(0.112)	(0.132)
Asset quality	0.020	0.027	-0.044	-0.043	0.046
	(0.067)	(0.069)	(0.082)	(0.080)	(0.143)
Board size		-0.030	-0.018	-0.029	-0.020
		(0.036)	(0.041)	(0.041)	(0.060)
Constant	3.846***	4.034***	4.576***	4.639***	5.266***
	(0.817)	(0.764)	(0.874)	(0.842)	(1.065)
Region fixed effects	No	No	Yes	Yes	No
Country fixed effects	No	No	No	No	Yes
Observations	100	100	100	100	100
R-squared	0.136	0.141	0.252	0.265	0.583
Adjusted R-squared	0.099	0.096	0.158	0.173	0.374

Notes: Dependent variable is the MSCI ESG rating coded ordinally from 1 (CCC) to 7 (AAA). HC3 standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Author's calculation.

The same specification is reported below in the output format of IBM SPSS Statistics, so that the model summary, the analysis of variance and the coefficient table can be read as they appear in the software. Standardised coefficients are included because they allow the relative contribution of variables measured on different scales to be compared directly.

Table 5.11a — Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.502	0.252	0.158	0.99502

Notes: Dependent variable: ESG rating (1 = CCC to 7 = AAA).

Table 5.11b — ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.314	11	2.665	2.692	.005
	Residual	87.126	88	0.990		
	Total	116.440	99			

Notes: Dependent variable: ESG rating (1 = CCC to 7 = AAA).

Table 5.11c — Coefficients

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	4.576	0.874		5.238	<.001
Region = Developed Asia-Pacific	0.175	0.636	0.062	0.275	.783
Region = Emerging Asia	-0.210	0.804	-0.056	-0.262	.794
Region = Latin America	-0.565	0.897	-0.157	-0.630	.529
Region = Middle East	-0.014	0.851	-0.003	-0.016	.987
Region = North America	-0.854	0.672	-0.333	-1.272	.203
Region = Western Europe	-0.027	0.659	-0.011	-0.042	.967
Board gender diversity	0.843	1.021	0.109	0.825	.409
Bank size (ln assets)	0.211	0.122	0.263	1.728	.084
Leverage (D/E)	0.029	0.114	0.051	0.249	.803
Asset quality (NPL %)	-0.044	0.082	-0.077	-0.534	.594
Board size	-0.018	0.041	-0.051	-0.430	.667

Notes: Dependent variable: ESG rating (1 = CCC to 7 = AAA). HC3 heteroscedasticity-consistent standard errors; R, R Square and the ANOVA table are the ordinary least squares quantities reported by SPSS REGRESSION.

The coefficient on board gender diversity is positive in four of the five specifications, which is the direction predicted by H1, but it is not statistically distinguishable from zero in any of them. In the specification without governance controls it is 0.762 ($p = 0.264$); with board size added, 0.673 ($p = 0.312$); with regional fixed effects, 0.843 ($p = 0.409$). The critical mass indicator behaves similarly at 0.447 ($p = 0.235$). Under country fixed effects the coefficient turns negative at -0.410 ($p = 0.734$), although that specification absorbs 28 country dummies and its adjusted R-squared of 0.374 against an R-squared of 0.583 shows how much of the variation it consumes.

Because the dependent variable is ordinal rather than continuous, the linear specification of column (3) was re-estimated as an ordered logit. The coefficient on board gender diversity is 0.277 with a standard error of 1.403 ($p = 0.844$) and the pseudo R-squared is 0.043. The conclusion does not depend on the functional form imposed on the rating scale.

The only control that carries a consistent signal is bank size, positive and significant at the five or ten per cent level in four of the five columns. Larger banks hold higher ESG ratings. This is the pattern the disclosure literature would predict: rating agencies score what is reported, larger institutions have larger sustainability reporting functions, and the resulting association reflects capacity to disclose at least as much as underlying practice.

H1 is not supported. Board gender diversity has no statistically significant association with the ESG rating of a bank, in any operationalisation, with or without institutional controls, and under either a linear or an ordinal treatment of the outcome.

5.5 Board Gender Diversity and Financial Performance (H2)

Table 5.12 reports the estimation of the relationship between board gender diversity and return on assets, corresponding to Model 2 of Section 4.3 and testing H2.

Table 5.12 Board gender diversity and return on assets

Variable	(1)	(2)	(3)	(4)
Board gender diversity	-1.355***	-1.351***	-0.571	-0.310
	(0.480)	(0.489)	(0.888)	(1.389)
Bank size	-0.408***	-0.409***	-0.263***	-0.148
	(0.122)	(0.143)	(0.093)	(0.152)
Leverage	-0.045*	-0.045*	-0.052	-0.009
	(0.027)	(0.026)	(0.046)	(0.079)
Asset quality	0.011	0.011	-0.170	-0.282
	(0.055)	(0.058)	(0.148)	(0.304)
Board size		0.001	-0.019	-0.024
		(0.025)	(0.030)	(0.046)
Constant	4.240***	4.232***	5.236***	2.304*
	(0.937)	(0.862)	(1.429)	(1.368)
Region fixed effects	No	No	Yes	No
Country fixed effects	No	No	No	Yes
Observations	100	100	100	100
R-squared	0.449	0.449	0.595	0.776
Adjusted R-squared	0.426	0.420	0.545	0.665
F-statistic	7.02	7.21	9.42	17.54
Prob > F	0.000	0.000	0.000	0.000

Notes: Dependent variable is return on assets in per cent. Heteroscedasticity-consistent (HC3) standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Year fixed effects are not estimable in a single-period cross-section.

Source: Author's calculation.

The same specification is reported below in the output format of IBM SPSS Statistics, so that the model summary, the analysis of variance and the coefficient table can be read as they appear in the software. Standardised coefficients are included because they allow the relative contribution of variables measured on different scales to be compared directly.

Table 5.13a — Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.772	0.595	0.545	0.66395

Notes: Dependent variable: Return on assets (%).

Table 5.13b — ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.086	11	5.190	11.773	<.001
	Residual	38.793	88	0.441		
	Total	95.879	99			

Notes: Dependent variable: Return on assets (%).

Table 5.13c — Coefficients

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	5.236	1.429		3.665	<.001
Region = Developed Asia-Pacific	-2.095	1.038	-0.822	-2.019	.043
Region = Emerging Asia	-1.434	1.025	-0.419	-1.399	.162
Region = Latin America	-1.006	0.893	-0.308	-1.127	.260
Region = Middle East	-1.078	0.977	-0.240	-1.104	.270
Region = North America	-1.902	1.110	-0.817	-1.713	.087
Region = Western Europe	-1.646	0.950	-0.728	-1.732	.083

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
Board gender diversity	-0.571	0.888	-0.082	-0.642	.521
Bank size (ln assets)	-0.263	0.093	-0.362	-2.841	.005
Leverage (D/E)	-0.052	0.046	-0.103	-1.116	.264
Asset quality (NPL %)	-0.170	0.148	-0.331	-1.151	.250
Board size	-0.019	0.030	-0.060	-0.640	.522

Notes: Dependent variable: Return on assets (%). HC3 heteroscedasticity-consistent standard errors; R, R Square and the ANOVA table are the ordinary least squares quantities reported by SPSS REGRESSION.

Column (1) reports the specification without governance controls or fixed effects. The coefficient on board gender diversity is -1.355, significant at the one per cent level ($p = 0.005$). Column (2) adds board size and the coefficient is essentially unchanged at -1.351 ($p = 0.006$). Read on their own, these two columns would support a conclusion that gender diversity is associated with materially lower profitability: a movement from a board with no women to a board that is 30 per cent female, which is approximately the sample mean, would be associated with a reduction in return on assets of 0.41 percentage points, against a sample mean of 1.19 per cent.

Columns (3) and (4) show that this conclusion does not survive the introduction of institutional controls. With regional fixed effects the coefficient falls to -0.571 and is not statistically distinguishable from zero ($p = 0.521$). With the full country fixed effects specified in Chapter 4 it falls further, to -0.310, and is even further from significance ($p = 0.823$). The country fixed effects specification identifies the parameter from within-country variation in a sample where thirteen countries contribute two banks or fewer, and the gap between an R-squared of 0.776 and an adjusted R-squared of 0.665 indicates the extent to which the model absorbs variation through the 28 country dummies; but its agreement with column (3) is

reassuring, since the two specifications control for institutional context in quite different ways and reach the same conclusion.

The hierarchical decomposition of explained variance makes the same point in a different form. The control variables alone explain 41.6 per cent of the variation in return on assets. Adding board gender diversity raises this to 44.9 per cent, an incremental contribution of 3.3 percentage points which is significant on an F test ($F(1,94) = 5.68$, $p = 0.019$). Adding regional fixed effects raises the R-squared to 59.5 per cent, an incremental contribution of 14.6 percentage points, and it is at this point that the coefficient on board gender diversity loses significance. Geography explains roughly four times as much of the variation in bank profitability as board composition appears to, and once geography is in the model, board composition explains nothing.

Among the control variables, bank size is consistently and strongly negative, and it is the only control that is significant across specifications. A one-unit increase in the natural logarithm of total assets, corresponding to a bank approximately 2.7 times larger, is associated with a reduction in return on assets of between 0.15 and 0.41 percentage points. This is a well-established finding in the banking literature and is generally attributed to the lower-margin wholesale and institutional business that dominates the balance sheets of the largest banks, together with the higher regulatory capital requirements applied to systemically important institutions. Leverage is negatively signed and marginally significant in the specifications without fixed effects, and asset quality is not significant in any specification, changing sign between the models without and with fixed effects — a further indication that the non-performing loan ratio is largely capturing regional variation rather than an independent bank-level effect.

H2 is not supported. Board gender diversity has no statistically significant association with return on assets once the institutional environment in which a bank operates is held

constant. The negative and significant coefficients in the unconditioned specifications reflect the geographic confound documented in Section 5.3.3 rather than an effect of board composition on profitability. It is worth recording that the correction of the board composition data strengthened rather than weakened this conclusion: on the uncorrected data the country fixed effects specification returned a coefficient that was marginally significant, whereas on the corrected data it is not significant by any margin.

5.6 The Critical Mass Specification

Section 4.6 specifies the substitution of the critical mass indicator for the proportional measure as the first robustness procedure, and Section 3.1 grounds this substitution in the argument that the influence of women directors may be a threshold phenomenon rather than a linear one. Table 5.14 reports the results.

Table 5.14 Critical mass and alternative operationalisations of board gender diversity

Variable	(1)	(2)	(3)	(4)	(5)
Critical mass (≥ 3 women)	-0.487**	-0.501**	-0.283		
	(0.229)	(0.230)	(0.303)		
Number of female directors				-0.029	
				(0.072)	
Blau index					-1.336
					(1.280)
Bank size	-0.389***	-0.413***	-0.272***	-0.267***	-0.264***
	(0.122)	(0.142)	(0.094)	(0.092)	(0.094)
Leverage	-0.060**	-0.053**	-0.045	-0.052	-0.045
	(0.027)	(0.026)	(0.044)	(0.046)	(0.044)
Asset quality	-0.000	-0.005	-0.171	-0.172	-0.181

Variable	(1)	(2)	(3)	(4)	(5)
	(0.058)	(0.061)	(0.145)	(0.147)	(0.143)
Board size		0.019	-0.012	-0.007	-0.019
		(0.025)	(0.026)	(0.029)	(0.028)
Constant	4.130***	4.032***	5.184***	5.051***	5.650***
	(0.924)	(0.849)	(1.395)	(1.372)	(1.551)
Region fixed effects	No	No	Yes	Yes	Yes
Observations	100	100	100	100	100
R-squared	0.457	0.460	0.601	0.593	0.602
Adjusted R-squared	0.434	0.431	0.552	0.542	0.552
F-statistic	6.39	6.09	9.32	9.56	9.36

Notes: Dependent variable is return on assets in per cent. HC3 standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Author's calculation.

The same specification is reported below in the output format of IBM SPSS Statistics, so that the model summary, the analysis of variance and the coefficient table can be read as they appear in the software. Standardised coefficients are included because they allow the relative contribution of variables measured on different scales to be compared directly.

Table 5.15a — Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.775	0.601	0.552	0.65905

Notes: Dependent variable: Return on assets (%).

Table 5.15b — ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.656	11	5.241	12.067	<.001
	Residual	38.223	88	0.434		
	Total	95.879	99			

Notes: Dependent variable: Return on assets (%).

Table 5.15c — Coefficients

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	5.184	1.395		3.718	<.001
Region = Developed Asia-Pacific	-2.076	1.023	-0.814	-2.029	.042
Region = Emerging Asia	-1.370	1.011	-0.400	-1.354	.176
Region = Latin America	-1.022	0.886	-0.313	-1.153	.249
Region = Middle East	-1.116	0.968	-0.248	-1.152	.249
Region = North America	-1.816	1.111	-0.781	-1.634	.102
Region = Western Europe	-1.625	0.944	-0.719	-1.721	.085
Critical mass (≥ 3 women)	-0.283	0.303	-0.124	-0.935	.350
Bank size (ln assets)	-0.272	0.094	-0.374	-2.889	.004
Leverage (D/E)	-0.045	0.044	-0.090	-1.024	.306
Asset quality (NPL %)	-0.171	0.145	-0.333	-1.176	.240
Board size	-0.012	0.026	-0.037	-0.454	.650

Notes: Dependent variable: Return on assets (%). HC3 heteroscedasticity-consistent standard errors; R, R Square and the ANOVA table are the ordinary least squares quantities reported by SPSS REGRESSION.

The pattern mirrors that of Table 5.12 exactly. Without institutional controls the critical mass indicator carries a negative coefficient significant at the five per cent level ($p = 0.034$ and

$p = 0.030$ in columns 1 and 2); with regional fixed effects the coefficient falls to -0.283 and is not significant ($p = 0.350$). A simple comparison of means gives the same picture in unconditioned form: banks meeting the threshold have a mean return on assets of 1.007 per cent against 1.785 per cent for those below it, a difference significant on a Welch test ($t = -2.663$, $p = 0.013$) and on a Mann-Whitney test ($p = 0.006$), but the difference is a between-region difference, not a between-governance difference.

Columns (4) and (5) substitute two further operationalisations. The raw count of female directors, which removes the scaling by board size, yields a coefficient of -0.029 ($p = 0.687$). The Blau index of gender heterogeneity, which is the fourth robustness procedure specified in Section 4.6, yields -1.336 ($p = 0.297$). Neither is significant.

The critical mass hypothesis is therefore not supported for financial performance in this sample. Two readings of this result are available and the data cannot distinguish between them. The first is that critical mass does not operate on financial performance, which would be consistent with the theoretical literature: Torchia, Calabro and Huse (2011) developed the threshold argument in relation to board-level innovation and process, not to profitability, and it does not follow from their reasoning that a change in boardroom dynamics should register in a bank's return on assets within the same accounting year. The second is that the sample lacks the power to detect the effect. The second reading has become more compelling after the corrections of Section 5.2.2, which moved three banks above the threshold and left only 24 institutions below it, all but one of them with at least one woman on the board. The contrast the specification is asked to detect is now a contrast between boards with one or two women and boards with three or more, not between boards with women and boards without.

5.7 ESG Performance and Financial Performance (H3)

H3 proposes that ESG performance is positively associated with financial performance.

Table 5.16 reports the estimation, corresponding to Model 3 of Section 4.3.

Table 5.16 ESG performance and return on assets

Variable	(1)	(2)	(3)	(4)
ESG rating	0.016	0.018	0.042	0.035
	(0.115)	(0.118)	(0.128)	(0.057)
Board gender diversity			-0.606	0.076
			(0.874)	(0.411)
Bank size	-0.403***	-0.418***	-0.272***	-0.150***
	(0.137)	(0.162)	(0.103)	(0.054)
Leverage	-0.078**	-0.074**	-0.053	-0.060*
	(0.033)	(0.031)	(0.050)	(0.033)
Asset quality	0.011	0.008	-0.168	-0.047
	(0.060)	(0.063)	(0.146)	(0.050)
Board size		0.011	-0.018	-0.032*
		(0.027)	(0.032)	(0.018)
Constant	3.790***	3.715***	5.042***	1.871***
	(0.874)	(0.803)	(1.399)	(0.479)
Dependent variable	ROA	ROA	ROA	ln(ROA)
Region fixed effects	No	No	Yes	Yes
Observations	100	100	100	100
R-squared	0.415	0.416	0.597	0.662
Adjusted R-squared	0.391	0.385	0.541	0.615

Notes: HC3 standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Author's calculation.

The same specification is reported below in the output format of IBM SPSS Statistics, so that the model summary, the analysis of variance and the coefficient table can be read as they appear in the software. Standardised coefficients are included because they allow the relative contribution of variables measured on different scales to be compared directly.

Table 5.17a — Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.773	0.597	0.541	0.66641

Notes: Dependent variable: Return on assets (%).

Table 5.17b — ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.243	12	4.770	10.741	<.001
	Residual	38.636	87	0.444		
	Total	95.879	99			

Notes: Dependent variable: Return on assets (%).

Table 5.17c — Coefficients

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	5.042	1.399		3.605	<.001
Region = Developed Asia-Pacific	-2.103	1.053	-0.825	-1.997	.046
Region = Emerging Asia	-1.425	1.029	-0.417	-1.386	.166
Region = Latin America	-0.982	0.883	-0.301	-1.112	.266
Region = Middle East	-1.078	0.983	-0.240	-1.096	.273
Region = North America	-1.865	1.085	-0.802	-1.719	.086

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
Region = Western Europe	-1.645	0.962	-0.727	-1.710	.087
ESG rating	0.042	0.128	0.047	0.331	.741
Board gender diversity	-0.606	0.874	-0.087	-0.694	.488
Bank size (ln assets)	-0.272	0.103	-0.374	-2.633	.008
Leverage (D/E)	-0.053	0.050	-0.105	-1.066	.286
Asset quality (NPL %)	-0.168	0.146	-0.327	-1.147	.251
Board size	-0.018	0.032	-0.058	-0.572	.567

Notes: Dependent variable: Return on assets (%). HC3 heteroscedasticity-consistent standard errors; R, R Square and the ANOVA table are the ordinary least squares quantities reported by SPSS REGRESSION.

The coefficient on ESG performance is positive throughout but negligible in magnitude and far from significance: 0.016 ($p = 0.893$) without governance controls, 0.042 ($p = 0.741$) with regional fixed effects, and 0.035 ($p = 0.541$) in the logarithmic specification. A one-grade improvement in the MSCI rating, which is a substantial move on a seven-point scale, is associated with a change in return on assets of roughly four hundredths of a percentage point against a sample mean of 1.19 per cent. Replacing the ordinal variable with a binary indicator for Leader status, that is a rating of AA or AAA, yields 0.175 ($p = 0.337$) and does not change the conclusion.

It is worth noting that the raw correlation between the ESG rating and return on assets is negative and significant ($r = -0.208$, $p = 0.038$; Spearman -0.236 , $p = 0.018$), and that this negative sign disappears once bank size and region are controlled. The mechanism is the same one documented in Section 5.4.1 for board gender diversity: ESG ratings are higher in larger banks and in stronger-institution jurisdictions, and both of those characteristics are associated with lower accounting margins. The unconditioned negative association is a composition effect, and the conditioned association is zero.

H3 is not supported. ESG performance has no statistically significant association with contemporaneous return on assets in this sample.

5.8 The Moderating Role of Institutional Context (H4)

H4 proposes that country-level institutional differences moderate the relationship between board gender diversity and financial performance. Table 5.18 reports the moderation analysis, following the mean-centred interaction procedure specified in Section 4.3, with standard errors clustered at the country level.

Table 5.18 Institutional context as moderator

Variable	(1)	(2)	(3)	(4)	(5)	Developed	Emerging
BGD (centred)	-0.395	-0.387		-1.503	- 1.404***	0.591*	-1.496
	(0.498)	(0.475)		(0.919)	(0.421)	(0.357)	(1.327)
Rule of Law (centred)	- 0.477***	-0.403**	- 0.414***				
	(0.166)	(0.166)	(0.136)				
BGD × Rule of Law		1.247*					
		(0.729)					
Critical mass (centred)			-0.140				
			(0.157)				
CM × Rule of Law			0.387*				
			(0.234)				
Developed market				- 0.698***			
				(0.248)			

Variable	(1)	(2)	(3)	(4)	(5)	Developed	Emerging
BGD × Developed				2.270**			
				(0.968)			
Masculinity (centred)					-0.001		
					(0.004)		
BGD × Masculinity					0.043*		
					(0.023)		
Bank size	- 0.395***	- 0.406***	- 0.376***	- 0.415***	-0.412**	-0.021	-0.686***
	(0.140)	(0.143)	(0.140)	(0.141)	(0.167)	(0.042)	(0.199)
Leverage	-0.003	-0.008	-0.015	-0.022	-0.036	-0.067***	-0.185*
	(0.036)	(0.034)	(0.038)	(0.020)	(0.032)	(0.020)	(0.105)
Asset quality	-0.060	-0.052	-0.053	-0.068	0.002	-0.058	-0.175
	(0.085)	(0.082)	(0.083)	(0.090)	(0.079)	(0.040)	(0.111)
Board size	-0.006	-0.003	-0.002	0.014	0.005	0.003	-0.008
	(0.020)	(0.020)	(0.018)	(0.019)	(0.020)	(0.014)	(0.089)
Constant	3.844***	3.804***	3.635***	4.160***	3.778***	0.986***	7.051***
	(0.940)	(0.947)	(0.940)	(0.930)	(1.109)	(0.280)	(1.299)
Observations	100	100	100	100	100	66	34
R-squared	0.534	0.549	0.560	0.549	0.457	0.266	0.642
Adjusted R-squared	0.504	0.514	0.527	0.515	0.416	0.205	0.578

Notes: Dependent variable is return on assets in per cent. Standard errors clustered at country level in columns (1) to (5); HC3 standard errors in the split-sample columns. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Author's calculation.

The same specification is reported below in the output format of IBM SPSS Statistics, so that the model summary, the analysis of variance and the coefficient table can be read as

they appear in the software. Standardised coefficients are included because they allow the relative contribution of variables measured on different scales to be compared directly.

Table 5.19a — Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.741	0.549	0.514	0.68586

Notes: Dependent variable: Return on assets (%).

Table 5.19b — ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	52.602	7	7.515	15.975	<.001
	Residual	43.277	92	0.470		
	Total	95.879	99			

Notes: Dependent variable: Return on assets (%).

Table 5.19c — Coefficients

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	3.804	0.947		4.017	<.001
Board gender diversity (centred)	-0.387	0.475	-0.055	-0.814	.416
Rule of Law (centred)	-0.403	0.166	-0.324	-2.431	.015
BGD x Rule of Law	1.247	0.729	0.129	1.712	.087
Bank size (ln assets)	-0.406	0.143	-0.558	-2.840	.005
Leverage (D/E)	-0.008	0.034	-0.015	-0.225	.822
Asset quality (NPL %)	-0.052	0.082	-0.101	-0.635	.525
Board size	-0.003	0.020	-0.009	-0.154	.877

Notes: Dependent variable: Return on assets (%). Standard errors clustered by country; R, R Square and the ANOVA table are the ordinary least squares quantities reported by SPSS REGRESSION. Interaction term formed from mean-centred components.

Column (1) enters the institutional index as a main effect alongside board gender diversity. The Rule of Law coefficient is -0.477 and significant at the one per cent level, confirming the pattern identified descriptively: banks operating under stronger institutions record lower accounting returns. Board gender diversity remains insignificant.

Column (2) adds the interaction term, and this is the pre-specified test of H4. Its coefficient is 1.247 with a clustered standard error of 0.729, corresponding to $p = 0.087$, and it is therefore significant at the ten per cent level. The sign is that predicted by the institutional argument developed in Section 3.4: the association between diversity and profitability becomes more positive as institutional quality rises. Column (3) repeats the exercise with the critical mass indicator, obtaining an interaction coefficient of 0.387 ($p = 0.098$), again correctly signed and again significant at the ten per cent level.

The simple slopes implied by column (2) are reported in Table 5.20.

Table 5.20 Simple slopes of board gender diversity at levels of institutional quality

Level of Rule of Law	Slope of BGD on ROA	Standard error	t	p
One SD below mean (-0.066)	-1.374	0.838	-1.638	0.105
At the mean (0.725)	-0.387	0.475	-0.814	0.418
One SD above mean (1.516)	0.600	0.643	0.932	0.354

Source: Author's calculation.

The slope changes sign across the range of the moderator, moving from -1.374 in weak-institution settings to +0.600 in strong-institution settings. Neither endpoint is individually distinguishable from zero at conventional levels, which is a common pattern when an interaction is detected in a modest sample: the data support the claim that the slope differs

across the range of the moderator more strongly than they support any particular estimate of the slope at a given point on it.

Columns (4) and (5) test the same proposition with two alternative measures of institutional context. Column (4) replaces the continuous index with a binary developed-market classification, and here the interaction is estimated at 2.270 with a clustered standard error of 0.968, corresponding to $p = 0.019$ and significant at the five per cent level. Column (5) substitutes the Hofstede masculinity-femininity score, which Section 4.1.5 names as the alternative institutional measure for the robustness analysis. The interaction is 0.043 ($p = 0.064$), significant at the ten per cent level and correctly signed: the association between diversity and profitability is more positive in more masculine cultures. This last result is the least expected of the three and should be treated with caution, both because the direction is not obviously predicted by the argument of Section 2.9.3 and because four countries in the sample share a single imputed cluster value on this dimension.

The split-sample estimation reported in the final two columns decomposes the moderation directly. Within developed markets the coefficient on board gender diversity is positive at 0.591 and marginally significant ($p = 0.098$); within emerging markets it is negative at -1.496 and not significant ($p = 0.260$). The contrast between the two sub-samples is what the interaction terms detect.

H4 receives support, though qualified support. The interaction between board gender diversity and institutional quality is correctly signed in all four specifications in which it is estimated and attains significance in three of them: at the ten per cent level in the pre-specified continuous form, at the ten per cent level with the critical mass indicator, at the five per cent level with the binary market classification, and at the ten per cent level with the cultural measure. Two cautions attach to this conclusion. The first is that the significance levels are marginal, and a study with 34 emerging-market banks drawn from thirteen countries cannot claim to have

established the relationship firmly. The second is that institutional quality is measured at the country level while the outcome is measured at the bank level, so the effective number of independent observations on the moderator is 29 rather than 100, which is why the country-clustered standard errors on the interaction term are approximately fifty per cent larger than the unclustered equivalents. The finding is best described as consistent evidence of a conditioning effect that a larger and more balanced sample would be needed to confirm.

It should be recorded that this conclusion differs from what the uncorrected data would have supported. Before the verification described in Section 5.2.2, the pre-specified interaction was estimated at 1.102 with $p = 0.128$ and would have been reported as not supported. The corrections, which affected six banks in Asia and moved four of them substantially up the diversity distribution, sharpened the contrast between the developed and emerging sub-samples and brought the interaction to conventional significance. This is a direct illustration of the point made in Section 5.2.2 about the consequences of measurement error in the independent variable, and it is a reason for treating the outstanding audit of the remaining ninety-three institutions as a priority rather than a formality.

5.9 The Mediating Role of ESG Performance (H5)

H5 proposes that ESG performance mediates the relationship between board gender diversity and financial performance. The indirect path was estimated following the bias-corrected bootstrap procedure specified in Section 4.3, using 5,000 resamples, with regional fixed effects and the full control set in both the mediator and the outcome equation. Table 5.21 reports the decomposition.

Table 5.21 Decomposition of the effect of board gender diversity on return on assets

Path	Description	Coefficient	Inference
a	Board gender diversity → ESG performance	0.843	$p = 0.409$

Path	Description	Coefficient	Inference
b	ESG performance → return on assets, controlling for BGD	0.042	p = 0.741
c'	Direct effect of BGD on ROA, controlling for ESG	-0.606	p = 0.494
c	Total effect of BGD on ROA	-0.571	p = 0.521
a × b	Indirect effect through ESG performance	0.036	95% CI [-0.179, 0.398]

Notes: Bias-corrected bootstrap, 5,000 resamples. All paths estimated with bank size, leverage, asset quality, board size and regional fixed effects. The confidence interval contains zero.

Source: Author's calculation.

The indirect effect is 0.036 and its bootstrap confidence interval spans zero, so the null of no mediation cannot be rejected. This is the result that the two constituent paths already imply: mediation requires both that board composition move the mediator and that the mediator move the outcome, and Sections 5.5 and 5.8 established that neither link is present. An indirect effect estimated as the product of two coefficients that are individually indistinguishable from zero cannot itself be distinguished from zero.

The decomposition is nonetheless worth reporting rather than omitting, because it disposes of a specific objection. A reader might reasonably suspect that the null finding on the direct path in Section 5.6 conceals offsetting effects — that board gender diversity raises ESG performance, which in turn raises profitability, while some countervailing channel suppresses the total. The decomposition shows that this is not what is happening. The direct effect of -0.606 and the total effect of -0.571 are almost identical, and the indirect component that separates them is 0.036, which is trivial in magnitude as well as insignificant.

H5 is not supported. ESG performance does not mediate the relationship between board gender diversity and financial performance in this sample.

An extension not required by the hypotheses was also estimated, in which the ESG-profitability relationship was allowed to vary with institutional quality, on the reasoning that if institutional context conditions the governance-performance link it might condition the sustainability-performance link as well. The interaction between the ESG rating and the Rule of Law index is 0.030 with a country-clustered standard error of 0.067 ($p = 0.650$). The conditioning effect documented for board gender diversity in Section 5.9 does not extend to ESG performance.

5.10 Robustness Checks

Section 4.6 specifies five robustness procedures, all of which were executed. The substitution of return on equity for return on assets was carried out using an implied return on equity derived from the reported debt-to-equity ratio, since equity is not separately reported in the dataset. Four additional procedures were added in response to the diagnostic findings of Section 5.4.3. Table 5.22 reports the results.

Table 5.22 Robustness specifications

Specification	Coefficient on BGD	Standard error	p	N	Adj. R ²
Baseline (Table 5.12, col. 3)	-0.571	0.888	0.521	100	0.545
R1: Dependent variable = implied ROE	-0.030	1.412	0.983	100	0.611
R2: Asset quality control omitted	-0.740	0.681	0.277	100	0.499
R3: Leverage measured as equity/assets	-0.455	0.809	0.574	100	0.593
R4: Approximated observations excluded	-0.797	1.131	0.481	78	0.606
R5: Winsorisation not applied	-0.573	0.775	0.459	100	0.531
R6: Dependent variable = $\ln(\text{ROA})$	0.105	0.417	0.800	100	0.616
R7: Three influential observations excluded	-0.111	0.397	0.779	97	0.546

Specification	Coefficient on BGD	Standard error	p	N	Adj. R ²
R8: Rule of Law as control in place of fixed effects	-0.395	0.498	0.428	100	0.504

Notes: All specifications include bank size, leverage, asset quality and board size, and regional fixed effects except R8, which includes the Rule of Law index as a continuous control with standard errors clustered at country level. Full coefficient tables are available in the accompanying results file.

Source: Author's calculation.

The coefficient on board gender diversity is insignificant in every one of the nine specifications, with p-values ranging from 0.277 to 0.983. The point estimate is negative in eight of the nine but its magnitude varies considerably, from -0.030 in the return on equity specification to -0.797 when the sample is restricted to fully specified observations, and it turns marginally positive in the logarithmic specification. This spread indicates that the estimate is imprecise rather than that it is precisely estimated at zero.

Four of the specifications deserve individual comment. R2 addresses the concern raised in Section 4.6 that asset quality may lie on the causal path between governance and profitability; removing it moves the coefficient away from zero and reduces its standard error, but not to significance, so the judgement to control for asset quality is not the reason the hypothesis fails. R4 restricts the sample to observations with no approximated values, reducing it to 78 banks; the coefficient is essentially unchanged, which indicates that the approximation markers in the source data are not driving the results. R6 addresses the functional-form rejection identified by the RESET test, and in the logarithmic specification the coefficient is close to zero and positively signed. R7 removes the three most influential observations and reduces the coefficient by four-fifths, confirming that even the point estimate's negative sign depends substantially on three small high-margin emerging-market banks.

A tenth specification, not reported in the table, omits Al Rajhi Bank on the ground identified in Section 5.2.2 that Section 4.1.3 excludes Islamic banks from the baseline sample.

Since Al Rajhi is the single institution in the sample with an all-male board, its exclusion removes the lower endpoint of the diversity distribution; the coefficient on board gender diversity remains insignificant and the conclusions of Sections 5.5 to 5.7 are unaffected.

Among the control variables, one result is worth recording. In the return on equity specification the sign on leverage reverses and becomes strongly positive (0.597, $p < 0.001$), which is precisely what should be expected: leverage mechanically raises return on equity while depressing return on assets, and the reversal is an internal consistency check on the derived variables rather than a substantive finding.

5.11 Discussion

5.11.1 The absence of a direct financial effect

The first substantive finding of this study is that board gender diversity bears no statistically detectable relationship to bank profitability once the institutional context of the bank is held constant. The finding is stable across nine robustness specifications, four operationalisations of diversity, two dependent variables and two functional forms, and it survived the correction of the underlying data in a strengthened form.

This result sits within, rather than against, the existing literature. Section 2.7.7 documented the inconsistency of prior evidence, and the present finding is consistent with the strand represented by Laique et al. (2023) and by Amin and Yahaya (2025), who report insignificant associations, rather than with the positive findings of Bogdan et al. (2022). What this study adds is a specific account of why the positive and negative findings in the literature may both be artefacts of specification. In this sample, the sign and significance of the diversity coefficient are determined almost entirely by whether the institutional environment is controlled. Without that control, the coefficient is negative and significant at the one per cent level; with it, the coefficient is insignificant and its magnitude falls by more than half. A

researcher working with a cross-country sample who did not control for institutional context would report a strong negative finding, and would be reporting an artefact.

The mechanism is documented in Section 5.4.1 and is worth restating because it generalises beyond this study. Institutional quality raises board gender diversity, through the combined operation of quota legislation, disclosure regimes, investor pressure and the cultural norms discussed in Section 2.9.3; the supplementary regression estimates this effect at 0.082 per unit of the Rule of Law index. Institutional quality also lowers accounting profitability in banking, through competitive intensity, margin compression in mature markets and the higher capital requirements applied in advanced regulatory regimes; the supplementary regression estimates this at -0.663. The two effects together generate a spurious negative correlation between diversity and profitability of precisely the magnitude observed. Cross-country studies of governance and bank performance that do not model this structure are vulnerable to it.

A second consideration concerns the outcome variable itself. Return on assets measures profitability in a single accounting year. The theoretical arguments developed in Sections 2.3 and 3.2 — that diverse boards improve monitoring quality, widen the informational resources available to the board, and moderate risk-taking — do not predict that these benefits should register in one year's accounting return. Agency-theoretic benefits of improved monitoring are most plausibly realised as the avoidance of losses that would otherwise have occurred, which is not observable in a cross-section of realised returns. The null finding is therefore compatible with the theory being correct and the test being poorly matched to it; a study of return volatility, loan loss provisioning, or performance in a crisis window would test the theory more directly than a study of contemporaneous profitability.

5.11.2 The absence of a sustainability channel

The second finding is that the sustainability path proposed in Section 3.5 is not present in these data at any of its three links. Board gender diversity does not predict the ESG rating, the ESG rating does not predict profitability, and the indirect effect that would connect them is 0.036 with a confidence interval spanning zero.

The first link deserves the most comment, because a positive association between board gender diversity and ESG performance is among the better-supported findings in the prior literature reviewed in Section 2.7. Three features of this study may account for the divergence. The outcome here is an ordinal rating on seven grades, which is a coarser instrument than the continuous composite scores used in much of that literature and which, in this sample, is further compressed by 70 per cent of banks sitting in the top two grades. The sample is confined to banking, where sustainability disclosure is heavily shaped by supervisory expectation and is therefore less responsive to board composition than in sectors where disclosure is discretionary. And the specification controls for regional context, which much of the prior literature does not; the raw correlation between diversity and the ESG rating in this sample is positive, and it is the introduction of institutional controls that removes it, exactly as with the profitability relationship.

The second link is more easily reconciled with prior work, since the evidence that ESG ratings predict accounting profitability has always been mixed, and the theoretical case for expecting an effect within a single accounting year is weak. Sustainability investments are costs in the period in which they are made, and the benefits that stakeholder theory predicts operate through reputation, funding access and risk avoidance over longer horizons than a one-year cross-section can observe.

5.11.3 The conditional character of the relationship

The second substantive finding qualifies the first in an important way. Although board gender diversity has no unconditional association with profitability, the association is not the same everywhere. The interaction between diversity and institutional quality is positive and significant in three of the four specifications in which it is estimated, and the split-sample estimates place a marginally significant positive coefficient in developed markets against an insignificant negative coefficient in emerging markets.

Read together, these two findings suggest that the search for a single global estimate of the effect of board gender diversity on bank profitability may be misconceived. What the data support is not the proposition that diversity has no relationship with performance, but the proposition that any such relationship is conditional on the environment in which the board operates. This is precisely the position developed on theoretical grounds in Section 3.4, drawing on Bhuiyan et al. (2023) and Yahaya (2026): governance mechanisms require enforcement and legitimacy to be effective, and where those are absent the formal composition of a board carries little information about how it actually functions.

The result also speaks to the tension identified in Section 3.4 between two competing predictions. One strand of the literature, represented by Moussa et al. (2024) and Singhanian and Saini (2023), holds that governance mechanisms operate more effectively in developed markets because enforcement is stronger. A second, represented by Attia et al. (2024) and Salihi et al. (2024), holds that emerging markets should show larger marginal effects because baseline governance quality is lower and there is therefore more room for improvement. The present evidence favours the first. The positive coefficient appears in the developed sub-sample, not the emerging one, and the interaction is positive rather than negative in every specification. The mechanism suggested by Section 2.9.3 — that in societies with weaker gender-equality norms female directors may be appointed to satisfy expectations without acquiring real influence —

is consistent with what is observed, although this study has no data on committee membership or participation and therefore cannot test it directly.

5.11.4 The critical mass argument in a changed empirical setting

The critical mass specification produced no evidence of a threshold effect on profitability, but the descriptive statistics that surround that null result are themselves informative, and the corrections of Section 5.2.2 make them more striking. Seventy-six per cent of the banks in this sample meet the threshold of three or more women directors. Sixty per cent have boards that are at least 30 per cent female. Only one bank in a hundred has no women on its board at all. Female representation averages 31.5 per cent across the sample and 40.7 per cent in Western Europe.

The critical mass literature reviewed in Section 2.2.7 was developed in an environment in which women were tokens on most boards. Kanter's (1977) analysis concerned minorities constituting less than 15 per cent of a group; Konrad, Kramer and Erkut (2008) and Torchia, Calabro and Huse (2011) tested the threshold in samples where boards with three women were a distinct minority. In a 2025 sample of large listed banks, that condition no longer holds for the overwhelming majority of the population. The theoretical construct has not been refuted by these data, but its empirical bite in this setting is limited: a threshold that three banks in four exceed cannot discriminate strongly among them.

Where the threshold still discriminates is geographically. No bank in the Middle East sub-sample meets it. This suggests that the critical mass framework remains analytically live for studies focused on jurisdictions where representation is low, and that its declining usefulness in global samples is a consequence of the very policy changes documented in Section 2.2.6. It also suggests that the research frontier has moved from headcount to participation: if three-

quarters of large banks now satisfy the numerical criterion, the interesting question is no longer whether the threshold is met but whether meeting it has changed how boards deliberate.

5.11.5 Bank size and the shape of the profitability relationship

Bank size is the most consistently significant variable in the analysis, negatively associated with return on assets in every specification with a coefficient between -0.15 and -0.41. The relationship is economically substantial: the difference between the median bank in the sample, with total assets of USD 536 billion, and a bank one standard deviation larger is associated with a reduction in return on assets of roughly 0.36 percentage points against a sample mean of 1.19.

This is consistent with the discussion in Section 2.5.2 and with the wider banking literature, and it has a bearing on how the diversity finding should be read. Larger banks are more likely to be domiciled in developed markets, more likely to be subject to diversity guidelines, and more likely to have larger boards — the correlation between bank size and board size in this sample is 0.381. Any study that examines board composition and bank profitability without a size control will attribute to governance what belongs to scale. The specifications reported here control for size throughout, and it is notable that the diversity coefficient becomes insignificant only when institutional context is added, not when size is added; the two confounds are distinct and both must be addressed.

5.11.6 Measurement error and the fragility of governance findings

A methodological observation arises from the verification exercise and deserves to be recorded as a finding in its own right. Five of the seven institutions checked were recorded incorrectly, the errors were large enough to change the critical mass classification of three of them, and correcting them changed a substantive conclusion: the pre-specified test of H4 moved

from insignificant ($p = 0.128$) to significant at the ten per cent level ($p = 0.087$), while the marginal significance of the country fixed effects estimate in the H2 model disappeared.

Two lessons follow. The first concerns the direction of the bias. Classical measurement error in an independent variable attenuates its estimated coefficient toward zero, and the errors here were of that character: they understated diversity at institutions that were in fact reasonably diverse, compressing the observed variation. Correcting them recovered an interaction effect that the error had suppressed. The second lesson concerns detection. Hana Financial's recorded value of 16.67 per cent was not implausible on its face and would not have been queried; it was found only because the neighbouring observations were being checked. Governance datasets assembled from secondary compilations are vulnerable to errors of exactly this kind, and the standard practice of reporting descriptive statistics without documenting a verification procedure gives the reader no basis for assessing that vulnerability.

5.11.7 What the findings do and do not license

The findings support five claims. First, in this cross-section of 100 large listed banks, board gender diversity has no unconditional association with contemporaneous accounting profitability once institutional context is controlled. Second, the negative bivariate association that appears in the raw data is a composition effect arising from the geographic coincidence of low board diversity and high accounting margins. Third, the relationship is conditional on institutional quality: it is more positive in stronger-institution jurisdictions, and the interaction is significant in three of four specifications. Fourth, institutional quality is itself strongly and negatively associated with bank profitability. Fifth, the sustainability channel proposed in Chapter 3 is absent: none of its three links is present in these data.

The findings do not license the claim that appointing women to bank boards has no effect on bank performance. The design is cross-sectional, so temporal ordering is not observed;

the outcome is a single year's accounting return, which is a narrow proxy for performance; board independence is not controlled; the moderation result rests on marginal significance levels and a thin emerging-market sub-sample; ninety-three of the hundred board composition records remain unverified; and the sustainability channel through which the framework of Chapter 3 expects much of the effect to operate has not been tested. The result reported here is the absence of a detectable unconditional association, together with evidence of conditioning, in a particular sample under a particular specification, and it should be described in those terms.

5.13 Summary of Hypothesis Testing

Table 5.23 summarises the outcome of the hypothesis tests.

Table 5.23 Summary of hypothesis testing

Hypothesis	Statement	Principal specification	Coefficient (SE)	Outcome
H1	Board gender diversity positively influences ESG performance	ESG on BGD + controls + region FE	0.843 (1.021), p = 0.409	Not supported
H2	Board gender diversity positively influences financial performance	ROA on BGD + controls + region FE	-0.571 (0.888), p = 0.521	Not supported
H3	ESG performance positively influences financial performance	ROA on ESG + BGD + controls + region FE	0.042 (0.128), p = 0.741	Not supported
H4	Country differences moderate the BGD-financial performance relationship	ROA on BGD × Rule of Law + controls	1.247 (0.729), p = 0.087	Supported at the 10% level; also supported with the critical mass measure (p = 0.098), the developed-market classification (p = 0.019) and the Hofstede masculinity score (p = 0.064)

Hypothesis	Statement	Principal specification	Coefficient (SE)	Outcome
H5	ESG performance mediates the BGD-financial performance relationship	Bias-corrected bootstrap, 5,000 resamples	Indirect 0.036, 95% CI [-0.179, 0.398]	Not supported

Source: Author's calculation.

Four of the five hypotheses are rejected and one is supported. H1, H2, H3 and H5 are each rejected: board gender diversity is unrelated to ESG performance, board gender diversity is unrelated to financial performance, ESG performance is unrelated to financial performance, and no indirect path runs from board composition through sustainability performance to profitability. Every one of these findings is robust across the alternative specifications examined. H4 is supported: the interaction between board gender diversity and institutional quality is correctly signed in all four specifications and significant in three, although at marginal levels that a larger sample would be needed to confirm.

The pattern is coherent rather than merely negative. What the data show is a set of variables that are each strongly determined by bank size and by the institutional environment of the jurisdiction, and that carry no detectable relationship with one another once those two determinants are held constant. The single exception is that the governance-profitability relationship is not the same everywhere, which is the finding reported in Section 5.9.

The critical mass specification, which Chapter 4 treats as a robustness procedure rather than as a separate hypothesis, produced no evidence of a threshold effect on financial performance in any operationalisation.

Chapter 6. Conclusion, Limitation and Future Research

This chapter concludes the study. Section 6.1 restates the research problem and summarises what the empirical analysis established. Section 6.2 answers each of the research questions posed in Section 1.4. Section 6.3 sets out the theoretical implications and Section 6.4 the implications for practice and policy. Section 6.5 states the limitations of the study candidly, including those that arose from the realised dataset rather than from the research design. Section 6.6 proposes directions for further research, and Section 6.7 offers concluding remarks.

6.1 Summary of the Study and its Findings

This study examined whether gender-diverse boards enhance the sustainable and financial performance of banking firms, and whether the strength of any such relationship depends on the institutional environment in which a bank operates. It was motivated by the observation, developed in Sections 1.1 and 2.11, that the existing literature offers inconsistent evidence on the governance-performance relationship, and by the argument that part of that inconsistency may be attributable to specification rather than to genuine heterogeneity in the underlying effect.

The study assembled a cross-section of 100 publicly listed banking institutions from 29 countries for the financial year 2025. Board gender diversity was operationalised as the proportion of female directors, with a critical mass indicator, the raw count and the Blau index as alternatives. Financial performance was measured by return on assets and sustainability performance by the MSCI ESG rating, coded ordinally on its seven grades. Bank size, leverage and asset quality were included as controls, together with board size. Institutional quality was measured by the World Bank's Rule of Law estimate, with a binary developed-market classification and the Hofstede masculinity score as alternatives. Before estimation, the board composition data were checked against primary sources for the institutions at the extremes of

the diversity distribution, and five of the seven records examined proved to be incorrect and were corrected. The relationships were estimated by ordinary least squares with heteroscedasticity-consistent standard errors, with regional and country fixed effects and with country-clustered standard errors in the moderation models.

Six findings emerged.

The first is that board gender diversity has no statistically significant unconditional association with bank profitability once institutional context is held constant. The estimated coefficient in the principal specification is -0.571 with a standard error of 0.888. The finding is stable across nine robustness specifications, four operationalisations of diversity, two dependent variables and both linear and logarithmic functional forms, with p-values ranging from 0.277 to 0.983. H2 is not supported.

The second is that the negative bivariate association observed in the raw data is a composition effect and not a governance effect. Board gender diversity and return on assets correlate at -0.275 in the unconditioned data, and the critical mass indicator at -0.340. Both associations disappear when regional or institutional controls are introduced. The mechanism was identified directly: institutional quality raises board gender diversity, with an estimated coefficient of 0.082 per unit of the Rule of Law index, and lowers accounting profitability, with an estimated coefficient of -0.663. The confound is strong enough to generate the entire observed association.

The third is that the relationship, although absent unconditionally, is conditional on institutional context. The interaction between board gender diversity and the Rule of Law index is positive at 1.247 and significant at the ten per cent level ($p = 0.087$). The same interaction with the critical mass indicator is 0.387 ($p = 0.098$), with a binary developed-market classification 2.270 ($p = 0.019$), and with the Hofstede masculinity score 0.043 ($p = 0.064$). The simple slope of diversity on profitability moves from -1.374 in weak-institution settings to

+0.600 in strong-institution settings, and the split-sample estimates place a marginally significant positive coefficient in developed markets (0.591, $p = 0.098$) against an insignificant negative coefficient in emerging markets (-1.496, $p = 0.260$). H4 is supported, at marginal significance levels.

The fourth is that the critical mass threshold, while central to the theoretical framework, has limited discriminating power in a contemporary sample of large international banks. Seventy-six of the 100 banks in this sample have three or more female directors, sixty have boards that are at least 30 per cent female, and only one has no women at all. The threshold identified by Kanter (1977) is now exceeded by the great majority of the population it was formulated to describe. No threshold effect on profitability was detected in any specification.

The fifth is methodological. The verification exercise found errors in five of the seven board composition records examined, large enough to change the critical mass classification of three banks, and correcting them changed a substantive conclusion: the pre-specified test of H4 moved from insignificant to significant. One of the five errors was in an observation that appeared entirely unremarkable and would not have been queried had neighbouring records not been under examination. Measurement error in the independent variable is therefore not a hypothetical concern in this literature but a demonstrated one.

The sixth is that the sustainability channel proposed in Chapter 3 is absent at every link. Board gender diversity does not predict the ESG rating (0.843, $p = 0.409$, and 0.277 with $p = 0.844$ under an ordered logit). The ESG rating does not predict return on assets (0.042, $p = 0.741$). The indirect effect connecting them is 0.036 with a bias-corrected bootstrap confidence interval of [-0.179, 0.398], which contains zero. H1, H3 and H5 are all rejected. The raw correlation between the ESG rating and profitability is negative and significant ($r = -0.208$, $p = 0.038$), and it disappears under the same size and region controls that dissolve the diversity-profitability correlation, so it too is a composition effect rather than a relationship.

6.2 Answers to the Research Questions

The research questions set out in Section 1.4 are answered as follows. The answers concerning ESG performance carry the qualification recorded in Section 5.2.3: the ratings were supplied as a compilation without per-bank sources, four of which were verified against primary reporting and all four matched, but the remaining ninety-six have not been checked.

Does board gender diversity influence the ESG performance of banking firms? On the evidence of this sample, no. The coefficient is positive, as predicted, but is not statistically distinguishable from zero in any specification, under either a linear or an ordinal treatment of the rating. This diverges from a substantial part of the prior literature, and Section 5.12.2 sets out three reasons why: a coarse seven-grade outcome compressed into its top grades, a sector in which sustainability disclosure is driven by supervisory expectation rather than board preference, and the presence of regional controls that much of that literature omits.

Does board gender diversity influence the financial performance of banking firms? Not unconditionally. There is no statistically detectable relationship between the proportion of women on a bank's board and its return on assets when the sample is pooled and bank size, leverage, asset quality, board size and institutional context are held constant. The finding is negative rather than merely inconclusive: it is robust to every alternative specification tested. It is, however, confined to contemporaneous accounting profitability and does not speak to risk, stability or valuation — and it is qualified by the answer to the fourth question below.

Does ESG performance influence the financial performance of banking firms? No. The estimated coefficient is 0.042 with a standard error of 0.128, and a one-grade improvement on the MSCI scale is associated with a change in return on assets of roughly four hundredths of a percentage point. Neither a logarithmic specification nor a binary Leader indicator alters the conclusion.

Do country differences moderate the relationship between board gender diversity and financial performance? Yes, on the evidence of this sample, although the evidence is not strong. The interaction is correctly signed in all four specifications in which it is estimated and significant in three, at the five per cent level with the binary market classification and at the ten per cent level with the continuous Rule of Law index, the critical mass measure and the cultural measure. The association between diversity and profitability is more positive in stronger-institution jurisdictions. A sample with greater emerging-market representation would be required to establish the relationship firmly.

A further finding, not corresponding to any of the research questions but arising from the analysis, is that institutional quality is itself a powerful determinant of bank profitability, negatively associated with return on assets at magnitudes of -0.38 to -0.48 across specifications. This is a stronger and more reliably estimated relationship than any involving board composition.

6.3 Theoretical Implications

The findings bear on the theoretical framework of Chapter 2 in four ways.

On agency and resource dependence accounts. The theoretical arguments developed in Sections 2.3.1 and 2.3.3 predict that gender-diverse boards improve monitoring quality and widen the resource base available to the board, and that these improvements should be reflected in firm performance. The present study finds no unconditional reflection in contemporaneous accounting profitability. This does not falsify the theories, and it should not be presented as though it did. Both accounts predict effects that are most plausibly realised as losses avoided, risks not taken and opportunities identified, none of which is directly observable in a single year's return on assets. The implication for theory is a matter of matching predictions to tests: research seeking to evaluate these accounts should specify outcome measures that correspond

to the mechanisms the theories describe, such as earnings volatility, provisioning behaviour, or performance in periods of systemic stress, rather than defaulting to profitability because it is available.

On stakeholder theory and the sustainability channel. Section 2.3.2 grounds the expectation that gender-diverse boards attend more closely to non-shareholder constituencies and that this registers in sustainability performance. That expectation is not borne out here. The result should be read with the coarseness of the measure in mind rather than as a refutation: a seven-grade rating in which seventy per cent of the sample occupies the top two grades cannot detect moderate differences, and the finding is better described as an absence of evidence than as evidence of absence. What can be said more firmly is that the transmission mechanism the framework proposes, governance to sustainability to profitability does not operate in this sample, and that a framework resting on it requires either a finer measure of sustainability performance or a longer horizon over which its financial consequences might appear.

On institutional theory. The findings provide the clearest support of any in this study for the institutional argument of Section 2.9, and they do so through two independent channels. The first is the moderation result: the effect of board composition on profitability is conditional on the quality of the institutional environment, and the conditioning is detected under three different measures of that environment. The second is in the main effects. Institutional quality predicts board gender diversity strongly, accounting for the greater part of an R-squared of 0.255 in a model that includes all bank-level characteristics, none of which is significant. Board composition, in this sample, is substantially a function of the regulatory and normative environment in which a bank operates rather than of its own characteristics. This is exactly what institutional theory predicts.

The evidence also adjudicates, tentatively, between the two competing predictions identified in Section 3.4. The proposition that governance mechanisms operate more effectively

where enforcement is stronger (Moussa et al., 2024; Singhania and Saini, 2023) is supported; the proposition that emerging markets should display larger marginal effects because baseline governance quality is lower (Attia et al., 2024; Salihi et al., 2024) is not. The positive coefficient appears in the developed sub-sample and the interaction is positive under every measure of institutional quality.

On critical mass theory. The descriptive finding that 76 per cent of large listed banks now exceed the three-woman threshold, and that only one bank in a hundred has an all-male board, suggests that critical mass theory is entering a phase in which it is more useful for explaining historical variation and for studying low-representation jurisdictions than for discriminating among firms in global samples. The theory has, in a sense, been overtaken by the policy changes documented in Section 2.2.6. Its continuing analytical value is likely to lie in settings where representation remains genuinely low, in this sample, the Middle East and in the study of substantive participation rather than headcount, since a board may satisfy the numerical threshold without the deliberative changes that the theory describes.

A methodological implication. The most transferable contribution of this study may be its demonstration of how sensitive findings in this literature are to two things that are rarely reported: specification and data quality. The coefficient on board gender diversity is negative and significant at the one per cent level in one specification and indistinguishable from zero in another, and the difference between the two is the presence of institutional controls. Separately, correcting seven of a hundred observations moved the moderation coefficient across the conventional threshold of significance. Section 2.7.7 catalogued the inconsistency of prior findings in this literature; the present analysis offers two concrete and testable accounts of where that inconsistency may come from. Cross-country governance research that does not model the institutional determination of board composition is liable to recover the institutional environment rather than the governance mechanism; and research that does not document a

verification procedure for its board data gives the reader no basis for assessing how much attenuation bias the estimates may carry.

6.4 Practical and Policy Implications

For bank boards and nomination committees. The absence of an unconditional profitability effect should not be read as an argument against board diversity, and this study does not offer one. What it offers is a caution against a particular justification for diversity. The business case that diverse boards deliver measurably superior financial returns is not supported by this evidence as a general proposition, and framing diversity initiatives around that promise creates a hostage to fortune: if the returns do not materialise in the accounting statements, the initiative loses its stated rationale. Arguments for diversity resting on representation, on the quality of board deliberation, on legitimacy with stakeholders and regulators, and on the widening of the pool from which directors are drawn are not contingent on the profitability finding and are not weakened by it. The moderation result adds a further nuance: where the business case does appear to hold, it holds in mature institutional environments, which is to say precisely where the supporting governance infrastructure exists.

For regulators and policymakers. The finding that institutional quality is the dominant predictor of board gender diversity in this sample, and that bank-level characteristics predict it hardly at all, suggests that regulatory and normative interventions have been effective at changing board composition. The Korean case documented in Section 5.2.2 illustrates this directly: three of the four largest financial holding companies moved from little or no female representation to between 22 and 36 per cent within a few years of the relevant supervisory reforms. Whether such interventions have changed board conduct is a separate question that composition data cannot answer. Regulators concerned with the substance rather than the form of diversity may wish to direct attention to committee membership, to chair and lead-director

appointments, and to the tenure and independence of women directors, none of which is captured by a headcount ratio and none of which was observable in this study.

For investors and analysts. The strong negative association between institutional quality and bank return on assets is a straightforward but important caution for cross-country comparison. Comparing the return on assets of a Gulf or African bank with that of a Western European bank as though the difference reflected relative management quality is unsound; a substantial part of the gap is attributable to market structure, competitive intensity and capital regime. The same caution applies to any governance metric that correlates with jurisdiction, which in practice means most of them.

For users of commercial governance datasets. The verification exercise carries a practical warning. Five of seven records checked were wrong, and one of the five would not have been detected by any plausible screening rule. Users of secondary board composition data, whether investors constructing governance screens, index providers, or researchers, should not assume that such data are accurate merely because they are systematically presented, and should verify at least the observations on which their conclusions most depend.

6.5 Limitations

The limitations anticipated in Section 4.8 are restated here alongside those that arose from the realised dataset. Both categories are stated fully, since a limitation acknowledged is a limitation the reader can weigh.

The data have been verified only in part. Seven of the 100 board composition records were checked against primary sources and five were found to be wrong. The remaining ninety-three have not been verified. Given the error rate observed, and given that one of the five errors was in an unremarkable-looking record, the possibility that further errors remain in the data must be regarded as substantial rather than remote. This is the most serious limitation of the

study as it stands, and a full audit against annual reports is the first item of further work in Section 6.7. Every result reported in Chapter 5 is conditional on the accuracy of the unverified majority of the sample.

The design is cross-sectional. The analysis rests on a single financial year. Without a temporal dimension the analysis cannot lag the explanatory variables, cannot absorb common shocks through year fixed effects, and cannot observe board composition before the performance it is said to influence. The endogeneity concern set out in Section 4.8 is therefore mitigated only by argument. All findings are associations, and the study cannot exclude the possibility that profitable banks appoint more women rather than that diverse boards raise profitability, though it should be noted that the direction of the raw association in this sample runs against that particular alternative.

The ESG variable is not fully sourced, and is ordinal. The MSCI ratings were supplied as a compiled table without a source URL or retrieval date for each bank. Four were verified and matched; ninety-six were not. The distribution is also compressed, with 70 of 100 banks in the top two grades against an expected five to nine per cent at AAA, which limits the variation available to the estimator and is one reason the ESG coefficients are imprecise. ICBC, State Bank of India and Al Rajhi Bank sit high relative to their published sustainability benchmarking and should be verified first. Finally the rating is ordinal on seven grades rather than a composite score on a nought-to-one-hundred scale, so Table 4.1 and Section 4.1.5 require amendment and the linear treatment of the scale is a modelling choice, checked in Section 5.5 by ordered logit.

Board independence was not controlled. Chapter 4 specified board independence as a governance control and the variable was unavailable. If independent directors are disproportionately women, part of the diversity coefficient may reflect independence.

Board size is derived for most of the sample. For the ninety-three unverified institutions, board size is recovered arithmetically from the female count and the female proportion rather

than observed. The recovered values are plausible in aggregate but inherit any error in their two inputs.

Leverage is measured by an index whose construction could not be verified. The implied equity ratios derived from the reported debt-to-equity figures are considerably higher than would be expected for commercial banks, which suggests the ratio is not computed on a conventional basis. The variable behaves sensibly and its inclusion or exclusion does not affect the finding on diversity, but its definition should be verified.

Twenty-eight values in the dataset are recorded as approximations. A specification restricted to the 78 fully specified observations produces materially identical results, but the approximations remain a limitation on the precision of the estimates.

The moderation result rests on marginal significance. H4 is supported at the ten per cent level in its pre-specified form and at the five per cent level only under an alternative measure that was not pre-specified. With 34 emerging-market banks drawn from thirteen countries, the test has limited power, and the finding should be treated as consistent evidence rather than as an established relationship.

The Hofstede measure is imputed for five countries. Egypt, Qatar, the United Arab Emirates and Saudi Arabia share a single regional cluster value, and South Africa uses the score for the white South African sample. The masculinity-based moderation result is correspondingly less precise than the Rule of Law result.

The sample is unbalanced across countries and is not random. The United States contributes a fifth of the observations, four countries contribute one bank each, and the sample is drawn from the largest listed institutions in each market. The findings describe large listed international banks and do not extend to smaller institutions, unlisted banks, or the many jurisdictions not represented. The sample also includes one Islamic bank, which Section 4.1.3 formally excludes.

Institutional quality is measured at country level while outcomes are measured at bank level. The effective number of independent observations on the moderator is 29, which limits the power of the moderation test.

Diagnostic tests indicate departures from the classical assumptions. Heteroscedasticity is present and is addressed by robust standard errors. Residual non-normality is present and is addressed by the logarithmic specification. The Ramsey RESET test rejects linearity in every specification; the logarithmic specification addresses this and yields a diversity coefficient closer to zero, so the misspecification does not generate the principal finding, but the control coefficients should be read with caution.

The outcome measure is narrow. Return on assets in a single year captures operating profitability and nothing else. The study says nothing about risk, stability, valuation, or long-run performance.

Gender diversity is measured by headcount. As Section 4.8 anticipated, the proportion of female directors does not measure the participation of individual directors in committee work or in boardroom deliberation. A board may satisfy any numerical criterion while remaining substantively unchanged, and this study cannot distinguish the two cases. This limitation bears directly on the interpretation of the moderation result, since the mechanism suggested in Section 5.10.2 that female directors in weaker institutional environments may hold seats without holding influence is precisely a claim about participation rather than composition.

6.6 Directions for Future Research

Audit the remaining board composition data. The immediate priority is not a new analysis but the verification of the existing one. All 100 institutions should be checked against annual reports, business reports or exchange filings for the 2025 reporting date, and the models re-estimated on the audited data. Given that correcting seven records moved one hypothesis

across the significance threshold, the results reported in Chapter 5 should be treated as provisional until this is complete.

Source the ESG ratings, and consider a finer measure. Each of the hundred ratings should be recorded with a citable source and a retrieval date, beginning with the three flagged in Section 6.6. Beyond verification, the compression of an ordinal seven-grade scale into its top two grades is itself a limitation of the measure rather than of the sample, and a continuous composite score from a licensed provider would give the estimator far more variation to work with. Re-running H1, H3 and H5 on such a measure is the most direct test of whether the null results reported here reflect the absence of a relationship or the coarseness of the instrument used to look for one.

Reconstruct the panel. Extending the sample to a multi-year window would permit year fixed effects, lagged specifications, and firm fixed effects that absorb time-invariant unobserved heterogeneity. It would also allow the study of change: whether banks that increased board diversity experienced subsequent changes in performance is a more informative question than whether banks with diverse boards perform differently from banks without them, and it can only be asked of panel data. The Korean reforms documented in Section 5.2.2 provide an obvious setting.

Pursue identification rather than association. The endogeneity concern acknowledged throughout can be addressed by exploiting the quota legislation documented in Section 2.2.6. The staggered introduction of binding quotas across jurisdictions offers a natural experiment, and a difference-in-differences design comparing banks in quota jurisdictions with matched banks in non-quota jurisdictions would support causal claims that the present design cannot. On the evidence of this study, and particularly of the moderation result, the regulatory discontinuity approach is the most promising route to progress in this literature.

Test the moderation mechanism directly. The present study establishes that the diversity-performance relationship varies with institutional context but cannot say why. The mechanism proposed in Section 5.10.2 that female directors in weaker institutional environments are less able to convert board seats into board influence is testable with data on committee chairs, committee membership, board tenure and attendance. Collecting such data for a sample of this size is feasible by hand and would convert a conditional association into an explanation.

Match outcome measures to mechanisms. The theoretical arguments for board diversity concern monitoring, risk and deliberation. Future work should test them with outcomes that correspond: the volatility of earnings, the level and timeliness of loan loss provisioning, the incidence of regulatory enforcement actions, the behaviour of the loan book through a credit cycle, and performance during systemic stress episodes.

Address the institutional confound directly. The demonstration that institutional context determines both board composition and bank profitability suggests a research design in which that structure is modelled rather than controlled away. A multilevel model with banks nested in countries, or an explicit decomposition of within- and between-country variance in the governance-performance relationship, would characterise the phenomenon more informatively than fixed effects, which discard the between-country variation entirely.

Broaden the sample toward under-represented jurisdictions. The weakness of the moderation test in this study is a direct consequence of having 34 emerging-market banks against 66 developed-market banks. A sample designed to balance the two, even at the cost of including smaller institutions, would test the institutional hypothesis with substantially greater power and would allow the marginal result reported here to be confirmed or overturned.

6.7 Concluding Remarks

This study set out to ask whether gender-diverse boards enhance the sustainable and financial performance of banks. On the sustainability side the answer, on this evidence, is no: board composition does not predict the ESG rating, the rating does not predict profitability, and nothing passes between them. On the financial side it returns a two-part answer. Considered globally, board gender diversity has no association with contemporaneous return on assets once one accounts for where a bank operates. Considered conditionally, the association is not the same everywhere: it is more positive in stronger institutional environments, and that pattern holds under three separate measures of the institutional environment.

The more durable contribution may lie in the two intermediate results. The first is that the negative association between board diversity and bank profitability that appears in the raw data of this sample is entirely a product of the fact that the world's least gender-diverse bank boards sit in the world's highest-margin banking markets. Removing that confound removes the association. The second is that correcting seven of a hundred observations was sufficient to move a hypothesis from rejected to supported. A literature that has produced positive, negative and null findings on this relationship for two decades may be one in which the specification and the quality of the data, rather than the phenomenon, have been doing much of the work.

If that is so, the useful next steps are not another estimate of the same coefficient. They are a design capable of separating the governance mechanism from the institutional environment that produces it, and a standard of data verification that allows readers to judge how much of any reported coefficient is signal. The quota legislation now in force across a growing number of jurisdictions provides the variation the first would need. The second requires only that the verification be done, and reported.

REFERENCE

- Abdullah, H., & Tursoy, T. (2023). The effect of corporate governance on financial performance: evidence from a shareholder-oriented system. *Interdisciplinary Journal of Management Studies*, 16(1), 79–95.
- Abraham, D., & Forslund, M. (2022). *The link between ESG and financial performance in sensitive and non-sensitive industries. A quantitative study of the European market.*
- Abramova, A. (2024). *Environmental, Social, and Governance (ESG) Principles in the Banking Sector. Development, Integration, and Risk Management Strategies: a case study of a Finnish banks' approach to ESG Framework.*
- Adeola, I. K., & Ajasa-Adeoye, F. Z. (2025). Board Gender Diversity and Corporate Social Responsibility. In *Sustainable Economic Development: Utilizing Non-Financial Performance, Sustainability Reporting, and Corporate Governance* (pp. 469–497). Springer.
- Adongo, A. A., Dapaah, J. M., & Azumah, F. D. (2023). Gender and leadership positions: understanding women's experiences and challenges in patriarchal societies in Northern Ghana. *International Journal of Sociology and Social Policy*, 43(11–12), 1114–1137.
- Aevoae, G. M., Andrieş, A. M., Ongena, S., & Sprincean, N. (2023). ESG and systemic risk. *Applied Economics*, 55(27), 3085–3109.
- Agbakwuru, V., Onyenahazi, O. B., Antwi, B. O., & Oyewale, K. (2024). The impact of environmental, social, and governance (ESG) reporting on corporate financial performance. *International Journal of Research Publication and Reviews*, 5(9), 3629–3644.
- Aguilera, R. V., & Ruiz Castillo, M. (2025). Toward an updated corporate governance framework: Fundamentals, disruptions, and future research. *BRQ Business Research Quarterly*, 28(2), 336–348.

- Ahmad, H., Yaqub, M., & Lee, S. H. (2024). Environmental-, social-, and governance-related factors for business investment and sustainability: A scientometric review of global trends. *Environment, Development and Sustainability*, 26(2), 2965–2987.
- Ahmed, F. A., Gul, S., & Shahzad, S. (2025). Ensuring accountability and transparency in AI-driven corporate governance. *International Journal of Social Sciences Bulletin*, 3(5), 330–341.
- Ajaegbu, E. E., & Mmayie, S. (2025). Resolving Principal Agent Conflicts: Revisiting Agency Theory Through the Lens of Internal Audit. *International Journal of Innovative Science and Research Technology*, 10, 1050–1059.
- Akbar, F. A. (2024). A holistic approach to sustainable corporate governance: Exploring the role of business ethics and technology–A bibliometric study. *Economics, Business, Accounting & Society Review*, 3(3), 182–196.
- Akinsola, K. (2025). The evolving role of corporate governance in shaping business practices and legal accountability in the 21st century. *Available at SSRN 5115523*.
- Akinsola, K., & Taofeek, A. (2025). The Role of Corporate Governance in Enhancing Investor Confidence and Promoting Financial Market Stability: Legal Perspectives and Practical Solutions. *Article in International Journal of Accounting*, 3(2), 1–23.
- Akinsola, O. K. (2025). *Addressing the Legal Challenges of Corporate Fraud and Financial Misreporting: Effective Governance Measures and Regulatory Oversight*.
- Akinsola, O. K., & Taofeek, A. (2025). *The Role of Independent Directors in Strengthening Corporate Governance*. Working paper]. <https://www.researchgate.net/publication/388403475>.
- Akram, F., & Abrar Ul Haq, M. (2022). Integrating agency and resource dependence theories to examine the impact of corporate governance and innovation on firm performance. *Cogent Business & Management*, 9(1), 2152538.

- Akula, D. K., Mohammed, Y. S., Syed, A., Haque, G. M. M., & Arafat, Y. (2025). The Role of Information Systems in Enhancing Strategic Decision Making: A Review and Future Directions. *Emerging Frontiers Library for The American Journal of Management and Economics Innovations*, 7(8), 80–105.
- Al-Faryan, M. A. S. (2024). Agency theory, corporate governance and corruption: an integrative literature review approach. *Cogent Social Sciences*, 10(1), 2337893.
- Al-Shammari, M. A., Banerjee, S. N., & Rasheed, A. A. (2022). Corporate social responsibility and firm performance: a theory of dual responsibility. *Management Decision*, 60(6), 1513–1540.
- Al Mahameed, M., & Abras, A. (2025). Using sustainability reporting as a business communication tool to reshape social relations in times of turmoil. *Business Strategy and the Environment*, 34(5), 5624–5643.
- Al Mullahi, J. (2022). *The underrepresentation of women at senior leadership positions: investigating the impact of career management systems on women's career progression in the banking sector at the Sultanate of Oman*.
- Alabi, O., & Bukola, T. (2023). Introduction to Descriptive statistics. In *Recent advances in biostatistics*. IntechOpen.
- Alahdal, W. M., Kateb, I., & Elbanna, S. (2026). From Board Governance to SDGs Integration: ESG Performance and Controversies in the MENA Region. *Business Strategy and the Environment*.
- Alajmi, A. E., Almasarwah, A., & Al-Wreikat, A. (2025). Boardroom diversity and CSR in the USA: an ethical approach to corporate governance. *Corporate Communications: An International Journal*, 1–15.
- AlDerbesti, N. K. (2024). *The Global and Islamic Representation of the Social Pillar in Environmental, Social, and Governance (ESG)*. Hamad Bin Khalifa University (Qatar).

- Alhassan, S., & Al Doghan, M. A. (2022). Gender differences in leadership: Role of gender diversity, leadership style, cultural influence and leadership behavior. *Croatian International Relations Review*, 28(90), 332–347.
- Alizade, İ. M. (2025). Exploring Credit Risks and Risk Management in Business: A Financial Perspective. *TİKİNTİNİN İQTİSADİYYATI VƏ MENECMENT ELMİ-PRAKTİKİ JURNAL*, 12.
- Allemand, I., Bédard, J., Brullebaut, B., & Deschênes, J. (2022). Role of old boys’ networks and regulatory approaches in selection processes for female directors. *British Journal of Management*, 33(2), 784–805.
- Almashhadani, M. (2023). Corporate governance and profitability: Some theories and implications. *International Journal of Scientific and Management Research*, 6(09), 228–246.
- Alodat, A. Y., & Hao, Y. (2025). Environmental, social and governance (ESG) disclosure and firm performance: moderating role of board gender diversity and sustainability committee. *Sustainable Development*, 33(1), 636–651.
- Alonso, A., Durán, D., García-Olmedo, B., & Quesada, M. A. (2024). Basel core principles for effective banking supervision: An update after a decade of experience. *Financial Stability Review*, 46.
- Alshabibi, B. (2022). Improving board diversity around the world: the role of institutional investors. *Journal of Financial Reporting and Accounting*, 20(2), 297–333.
- Alshehadeh, A. R., Elrefae, G., & Injadat, E. (2022). Influence of traditional performance indicators on economic added value: evidence from insurance companies. *Corporate Governance and Organizational Behavior Review*, 6(4), 18–27.
- Amali, E., & Ejila, S. A. (2023). Banks’ credit to private sector and economic growth in an emerging digitalized economy: Empirical evidence from Nigeria. *International Journal of*

Economics, Commerce and Management, 11(4), 1–17.

- Amin, A., Ali, R., Naseem, M. A., & Ahmad, M. I. (2022). Female presence in corporate governance, firm performance, and the moderating role of family ownership. *Economic Research-Ekonomska Istraživanja*, 35(1), 929–948.
- Amin, H. M. G., Mohamed, E. K. A., Abdallah, A. S., & Elamer, A. A. (2025). National culture, formal institutions and structure of board of directors: theory and empirical evidence. *Journal of Financial Reporting and Accounting*.
- Amin, H. M., & Yahaya, O. A. (2025). The effects of board characteristics and institutional ownership on corporate social responsibility. *Journal of Finance and Management*, 18(4), 114–136.
- Andrews, R. (2025). Board gender diversity in municipally owned corporations: A resource dependence perspective. *International Review of Administrative Sciences*, 91(1), 60–76.
- Arafat, M. (2025). Corporate Governance and Firm Profitability: Comparative Evidence from Diverse Institutional Enforcement, Cultural, and Power Contexts. *Cultural, and Power Contexts*.
- Ardiansyah, M. (2024). Integrating corporate social responsibility into business strategy: creating sustainable value. *Involvement International Journal of Business*, 1(1), 29–42.
- Arvanitis, S. E., Varouchas, E. G., & Agiomirgianakis, G. M. (2022). Does board gender diversity really improve firm performance? Evidence from Greek listed firms. *Journal of Risk and Financial Management*, 15(7), 306.
- Asare, N., Muah, P., Frimpong, G., & Anyass, I. A. (2023). Corporate board structures, financial performance and stability: Evidence from banking markets in Africa. *Journal of Money and Business*, 3(1), 43–59.
- Asri, M. (2024). Exploring the impact of committee structure and composition on corporate governance practices. *Advances in Managerial Auditing Research*, 2(1), 26–39.

- Atinc, G., Srivastava, S., & Taneja, S. (2022). The impact of gender quotas on corporate boards: a cross-country comparative study. *Journal of Management and Governance*, 26(3), 685–706.
- Attia, E. F., Yassen, S., Chafai, A., & Qotb, A. (2024). The impact of board gender diversity on the accrual/real earnings management practice: evidence from an emerging market. *Future Business Journal*, 10(1), 24.
- Attwal, K., & Singh, A. (2024). Exploring SPSS statistics for data mining and statistical modeling. *International Journal of Statistics and Applied Mathematics*, 9(3), 9–16.
- Awa, H. O., Etim, W., & Ogbonda, E. (2024). Stakeholders, stakeholder theory and corporate social responsibility (CSR). *International Journal of Corporate Social Responsibility*, 9(1), 11.
- Awalakki, M. (n.d.). *THEORETICAL FOUNDATIONS AND CONTEMPORARY PERSPECTIVES ON ESG INVESTING: INTEGRATING FINANCIAL THEORIES, ETHICAL PRINCIPLES, AND MARKET PRACTICES*.
- Awwad, B. S., Binsaddig, R., Kanan, M., & Al Shirawi, T. (2023). Women on boards: an empirical study on the effects on financial performance and corporate social responsibility. *Competitiveness Review: An International Business Journal*, 33(1), 147–160.
- Babafemi, O. E. (2024). Opportunities and barriers to leadership for female finance leaders in the UK. *European Journal of Human Resource Management Studies*, 7(2).
- Balp, G., & Strampelli, G. (2022). Institutional investor ESG engagement: The European experience. *European Business Organization Law Review*, 23(4), 869–904.
- Banda, M. (2023). Corporate governance: A conceptual analysis. *Corporate Governance*, 14(17), 156.
- Banwo, A. O., Onokala, U., & Momoh, B. (2022). Organizational climate–institutional environment nexus: why context matters. *Journal of Global Entrepreneurship Research*,

12(1), 357–369.

- Barkhuizen, E. N., Masakane, G., & van der Sluis, L. (2022). In search of factors that hinder the career advancement of women to senior leadership positions. *SA Journal of Industrial Psychology*, 48, 1986.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Basile, V., Serino, L., Ambra, A. D., & Campanella, F. (2026). Board characteristics and effects on ESG performance: Empirical evidence from the European banking system. *Quality & Quantity*, 60(1), 2121–2138.
- Becchetti, L., Bobbio, E., Prizia, F., & Semplici, L. (2022). Going Deeper into the S of ESG: A Relational Approach to the Definition of Social Responsibility. *Sustainability*, 14(15), 9668. <https://doi.org/10.3390/su14159668>
- Beckmann, M., Hielscher, S., & Pies, I. (2014). Commitment Strategies for Sustainability: How Business Firms Can Transform Trade-Offs Into Win-Win Outcomes. *Business Strategy and the Environment*, 23(1), 18–37. <https://doi.org/10.1002/bse.1758>
- Behlau, H., Wobst, J., & Lueg, R. (2024). Measuring board diversity: A systematic literature review of data sources, constructs, pitfalls, and suggestions for future research. *Corporate Social Responsibility and Environmental Management*, 31(2), 977–992.
- Benichou, M. (2024). Audit committee and board of directors: A synergy for effective corporate governance. *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev.*, 9(12), 4.
- Berger, A. N., & Bouwman, C. H. S. (2013). How does capital affect bank performance during financial crises? *Journal of Financial Economics*, 109(1), 146-176.
- Berger, A. N., & DeYoung, R. (1997). Problem loans and cost efficiency in commercial banks. *Journal of Banking & Finance*, 21(6), 849-870.

- Bhardwaj, S., Morgan, D., & Elms, N. (2024). Why women on corporate boards are more than just tokens: an Indian perspective. *Gender in Management: An International Journal*, 39(6), 745–760.
- Bhuiyan, F., Rana, T., Baird, K., & Munir, R. (2023). Strategic outcome of competitive advantage from corporate sustainability practices: Institutional theory perspective from an emerging economy. *Business Strategy and the Environment*, 32(7), 4217–4243.
- Blau, P. M. (1977). *Inequality and heterogeneity: A primitive theory of social structure*. Free Press.
- Boachie, R., Aawaar, G., & Domeher, D. (2023). Relationship between financial inclusion, banking stability and economic growth: a dynamic panel approach. *Journal of Economic and Administrative Sciences*, 39(3), 655–670.
- Bogdan, V., Popa, D.-N., & Beleneși, M. (2022). The complexity of interaction between executive board gender diversity and financial performance: A panel analysis approach based on random effects. *Complexity*, 2022(1), 9559342.
- Buallay, A., Hamdan, R., Barone, E., & Hamdan, A. (2022). Increasing female participation on boards: Effects on sustainability reporting. *International Journal of Finance & Economics*, 27(1), 111–124.
- Burinskienė, A., Grybaitė, V., & Lapinskienė, G. (2025). The Link Between ESG Factors and Corporate Profitability: Evidence from Resource-Intensive Industries in Europe and the USA. *Sustainability*, 17(23), 10714.
- Cambrea, D. R., Paolone, F., & Cucari, N. (2023). Advisory or monitoring role in ESG scenario: which women directors are more influential in the Italian context? *Business Strategy and the Environment*, 32(7), 4299–4314.
- Campopiano, G., Gabaldón, P., & Gimenez-Jimenez, D. (2023). Women directors and corporate social performance: an integrative review of the literature and a future research

- agenda. *Journal of Business Ethics*, 182(3), 717–746.
- Cantero-Saiz, M., Polizzi, S., & Scannella, E. (2024). ESG and asset quality in the banking industry: The moderating role of financial performance. *Research in International Business and Finance*, 69, 102221.
- Challoumis, C. (2024). The Impact of Regulatory Policies on the Flow of Money in the Banking System. *SSRN Electronic Journal*.
- Chang, Y., Wu, K.-T., Lin, S.-H., & Lin, C.-J. (2024). Board gender diversity and corporate social responsibility. *International Journal of Corporate Social Responsibility*, 9(1), 7.
- Chatterjee, C., & Nag, T. (2022). Do women on boards enhance firm performance? Evidence from top Indian companies. *International Journal of Disclosure and Governance*, 20(2), 155.
- Chen, H., Ju, P., Feng, C., & Zhang, X. (2025). The Configuration Analysis of Corporate Social Responsibility: A Multi-Theory Framework. *Corporate Social Responsibility and Environmental Management*, 32(4), 5676–5688.
- Chen, S., Song, Y., & Gao, P. (2023). Environmental, social, and governance (ESG) performance and financial outcomes: Analyzing the impact of ESG on financial performance. *Journal of Environmental Management*, 345, 118829.
- Chopra, S. S., Senadheera, S. S., Dissanayake, P. D., Withana, P. A., Chib, R., Rhee, J. H., & Ok, Y. S. (2024). Navigating the challenges of environmental, social, and governance (ESG) reporting: The path to broader sustainable development. *Sustainability*, 16(2), 606.
- Chronopoulos, D. K., Yilmaz, M. H., & Wilson, J. O. S. (2023). Stakeholder orientation and bank payout policy: evidence from US constituency statutes. *British Journal of Management*, 34(3), 1440–1458.
- Cinciulescu, D. (2024). Developments and perspectives on corporate environmental risk management. A comprehensive analysis of ESG integrations. *Revista de Științe Politice*.

Revue Des Sciences Politiques, 81, 83–91.

Clément, A., Robinot, É., & Trespeuch, L. (2025). The use of ESG scores in academic literature:

A systematic literature review. *Journal of Enterprising Communities: People and Places in the Global Economy*, 19(1), 92–110.

Cohen, G. (2023). The impact of ESG risks on corporate value. *Review of Quantitative Finance and Accounting*, 60(4), 1451–1468.

Conca, L., Toma, P., Colamartino, C., & Campobasso, F. (2026). Assessing resilience in banking: the influence of ESG on credit risk during economic crises. *Measuring Business Excellence*, 1–16.

Cristofaro, M., Bao, Y. J., Chiu, S., Hernández-Lara, A. B., & Perez-Calero, L. (2023). Affect and cognition in upper echelons' strategic decision making: Empirical and theoretical studies for advancing corporate governance. In *Frontiers in Psychology* (Vol. 13, p. 1081095). Frontiers Media SA.

Daruwala, Z. (2023). Influence of financial leverage on corporate profitability: Does it really matter. *International Journal of Economics and Financial Issues*, 13(4), 37–46.

Dicuonzo, G., Donofrio, F., Iannuzzi, A. P., & Dell'Atti, V. (2022). The integration of sustainability in corporate governance systems: an innovative framework applied to the European systematically important banks. *International Journal of Disclosure and Governance*, 19(3), 249–263.

Dimes, R., & Molinari, M. (2024). Non-financial reporting and corporate governance: a conceptual framework. *Sustainability Accounting, Management and Policy Journal*, 15(5), 1067–1093.

Dimingu, H., & Mogaji, I. M. (2024). The role of board dynamics in organizational transformation: A corporate governance perspective. *Open Journal of Business and Management*, 12(2), 1209–1227.

- Ding, L., Cui, Z., & Li, J. (2024). Risk management and corporate ESG performance: The mediating effect of financial performance. *Finance Research Letters*, 69, 106274.
- Dmuchowski, P., Dmuchowski, W., Baczewska-Dąbrowska, A. H., & Gworek, B. (2023). Environmental, social, and governance (ESG) model; impacts and sustainable investment—Global trends and Poland’s perspective. *Journal of Environmental Management*, 329, 117023.
- Duffy, D. (2025). *The Role of Bank Board of Directors in Risk-Taking and Credit Provision*. Case Western Reserve University.
- Dzreke, S. S., & Dzreke, S. E. (2025). Competitive intelligence and profitability: A meta-analysis of strategic positioning dynamics in digital markets. *International Journal of Research in Marketing Management and Sales*, 7(2), 331–345.
- Efunniyi, C. P., Abhulimen, A. O., Obiki-Osafiele, A. N., Osundare, O. S., Agu, E. E., & Adeniran, I. A. (2024). Strengthening corporate governance and financial compliance: Enhancing accountability and transparency. *Finance & Accounting Research Journal*, 6(8), 1597–1616.
- Eke, C., Olatinsu, O., & Uwakwe, A. Q. (2025). Withholding tax frameworks in developing countries: A critical review of structure, compliance, and enforcement mechanisms. *International Journal of Research in Finance and Management*, 8(1), 863–872.
- Elmaghrabi, M., Hassanein, A., & Diab, A. (2025). How do firm-level and country-level sustainability governance shape corporate sustainability? Insights from environmentally-sensitive industries. *Social Responsibility Journal*, 21(5), 1086–1110.
- Emeka-Okoli, S., Nwankwo, T. C., Otonnah, C. A., & Nwankwo, E. E. (2024). Corporate governance and CSR for sustainability in oil and gas: Trends, challenges, and best practices: A review. *World Journal of Advanced Research and Reviews*, 21(3), 78–90.
- Erben Yavuz, A., Kocaman, B. E., Doğan, M., Hazar, A., Babuşcu, Ş., & Sutbayeva, R. (2024).

- The impact of corporate governance on sustainability disclosures: A comparison from the perspective of financial and non-financial firms. *Sustainability*, 16(19), 8400.
- Esposito De Falco, S., Coniglio, G., Dalipi, E., & Giannetti, V. (2026). The Moderating Role of the Legal Context Between ESG Controversies, Economic Performance and Board of Directors. *Corporate Social Responsibility and Environmental Management*, 33(3), 3208–3224.
- Farooq, M., Noor, A., & Ali, S. (2022). Corporate governance and firm performance: empirical evidence from Pakistan. *Corporate Governance: The International Journal of Business in Society*, 22(1), 42–66.
- Fasua, K. O. (2025). Financial performance indicators and market value of listed firms. *Tijara: Journal of International Trade and Economics in Central Asia*, 1(1), 26–40.
- Fengju, X., & Wubishet, A. (2024). Analysis of the impacts of financial development on economic growth in East Africa: How do the institutional qualities matter? *Economic Analysis and Policy*, 82, 1177–1189.
- Ferrary, M. (2024). The French approach to promoting gender diversity in corporate governance. *European Management Journal*, 42(4), 445–451.
- Fisch, J. (2022). Promoting corporate diversity: the uncertain role of institutional investors. *Seattle UL Rev.*, 46, 367.
- Galletta, S., Mazzù, S., Naciti, V., & Vermiglio, C. (2022). Gender diversity and sustainability performance in the banking industry. *Corporate Social Responsibility and Environmental Management*, 29(1), 161–174.
- García-Meca, E., & Martínez-Ferrero, J. (2025). Understanding the role of gender diversity in ESG misconduct. The moderating effect of gender equality policies. *Sustainability Accounting, Management and Policy Journal*, 16(3), 816–844.
- Garcia-Torea, N. (2023). Board diversity and gender quotas. In *Encyclopedia of Sustainable*

- Management* (pp. 336–340). Springer.
- Garefalakis, A., Despoina, K., Angelaki, E., Papademetriou, C., & Passas, I. (2026). Navigating ESG Challenges: The Role of Chartered Accountants in Corporate Sustainability. *Risks*, 14(3), 47.
- Ghabri, Y. (2022). Legal protection systems, corporate governance and firm performance: a cross-country comparison. *Studies in Economics and Finance*, 39(2), 256–278.
- Ghanad, A. (2023). An overview of quantitative research methods. *International Journal of Multidisciplinary Research and Analysis*, 6(08), 3794–3803.
- Gissay, A., & Majid, R. M. (2025). Impact of ESG Performance in Mitigating Non-Performing Loans in Kenya's Commercial Banks. *Accounting Analysis Journal*, 14(2), 119–131.
- Githaiga, P. N., & Kosgei, J. K. (2023). Board characteristics and sustainability reporting: a case of listed firms in East Africa. *Corporate Governance: The International Journal of Business in Society*, 23(1), 3–17.
- Githaiga, P. N., Muturi Kabete, P., & Caroline Bonareri, T. (2022). Board characteristics and earnings management. Does firm size matter? *Cogent Business & Management*, 9(1), 2088573.
- Guedes, R., Neves, M. E., & Vieira, E. (2025). Bridging governance gaps: politically connected boards, gender diversity and the ESG performance puzzle in Iberian companies. *Business Process Management Journal*, 31(1), 365–389.
- Gugan, S. S., Steward, J. J., & Subhashini, A. (2024). The role of women in economic development. *Journal of Economics*, 12(2), 94–103.
- Guo, P., Wu, Z., Yao, Q., & Chen, Y. (2025). Female CEOs and earnings management: examining risk aversion versus social identity theories. *Applied Economics*, 57(36), 5486–5506.
- Gupta, N., & Chanchal, A. (2022). Mainstreaming ESG and Role of the Board. *J. on*

- Habib, A., & Khan, M. A. (2025). Bank financing and green financing: The influence of sustainable practices on investment sensitivity. *Sustainable Futures*, 10, 100775.
- Haidari, M. N. (2023). Impact of decision-making on investment performance: A comprehensive analysis. *Journal of Asian Development Studies*, 12(4), 980–990.
- Haleem, F., Farooq, S., Cheng, Y., & Waehrens, B. V. (2022). Sustainable management practices and stakeholder pressure: a systematic literature review. *Sustainability*, 14(4), 1967.
- Hamplová, E., Janeček, V., & Lefley, F. (2022). Board gender diversity and women in leadership positions—are quotas the solution? *Corporate Communications: An International Journal*, 27(4), 742–759.
- Hanif, M., & Bajuri, N. H. (2026). Corporate Performance Measures and Shareholder Value Creation: Empirical Evidence from the Capital-intensive Sectors of Pakistan. *Institutions and Economies*, 137–163.
- Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed.). Guilford Press.
- Hazaea, S. A., Al-Matari, E. M., Farhan, N. H. S., & Zhu, J. (2023). The impact of board gender diversity on financial performance: a systematic review and agenda for future research. *Corporate Governance: The International Journal of Business in Society*, 23(7), 1716–1747.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations* (2nd ed.). Sage Publications.
- Hosny, K., & Elgharbawy, A. (2022). Board diversity and financial performance: empirical evidence from the United Kingdom. *Accounting Research Journal*, 35(4), 561–580.
- Hossain, M. Z., Hasan, L., & Hasan, M. H. (2024). Corporate governance as a global

- phenomenon: evolution, theoretical foundations, and practical implications. *Journal of Financial Risk Management*, 13(2), 342–375.
- Hyun, S., Kim, J. M., Han, J., & Anderson, M. (2022). Female executive leadership and corporate social responsibility. *Accounting & Finance*, 62(3), 3475–3511.
- Ingersoll, A. R., Glass, C., & Cook, A. (2024). Institutional isomorphic pressures: the impact for women on boards. *Corporate Governance: The International Journal of Business in Society*, 24(4), 865–881.
- Intonti, M. (2025). *Sustainable financial system: the ESG banking and finance, between current challenges and future prospects*.
- Islam, R., French, E., & Ali, M. (2022). Evaluating board diversity and its importance in the environmental and social performance of organizations. *Corporate Social Responsibility and Environmental Management*, 29(5), 1134–1145.
- Ismawati, K., Trihatmoko, R. A., & Ratnaningrum, R. (2024). Financial Report Compliance: Timelines Evidence of FMCG Indonesian Companies. *Calitatea*, 25(203), 152–161.
- Issa, A., & Hanaysha, J. R. (2023). Breaking the glass ceiling for a sustainable future: the power of women on corporate boards in reducing ESG controversies. *International Journal of Accounting & Information Management*, 31(4), 623–646.
- Issa, A., Zaid, M. A. A., & Hanaysha, J. R. (2022). Exploring the relationship between female director's profile and sustainability performance: Evidence from the Middle East. *Managerial and Decision Economics*, 43(6), 1980–2002.
- Issa, A., Zaid, M. A. A., Hanaysha, J. R., & Gull, A. A. (2022). An examination of board diversity and corporate social responsibility disclosure: evidence from banking sector in the Arabian Gulf countries. *International Journal of Accounting & Information Management*, 30(1), 22–46.
- Jallali, S., & Zoghlami, F. (2022). Does risk governance mediate the impact of governance and

- risk management on banks' performance? Evidence from a selected sample of Islamic banks. *Journal of Financial Regulation and Compliance*, 30(4), 439–464.
- Janani, S., Christopher, R. M., Nikolov, A. N., & Wiles, M. A. (2022). Marketing experience of CEOs and corporate social performance. *Journal of the Academy of Marketing Science*, 50(3), 460–481.
- Jasni, N. S., & Zulkifli, A. (2024). The moderating role of sector risk in the relationship between ESG and financial performance: Evidence from top companies in Malaysia. *Edelweiss Applied Science and Technology*, 8(2), 59–72.
- Jin, T., Wu, Y., Lu, M., & Wang, J. (2026). Green vision, steady minds: the impact of corporate ESG performance on managerial perception of uncertainty. *Chinese Management Studies*, 20(3), 561–590.
- Joecks, J., Pull, K., & Vetter, K. (2013). Gender diversity in the boardroom and firm performance: What exactly constitutes a critical mass? *Journal of Business Ethics*, 118(1), 61–72.
- Johansson, S., & Wictorin, S. (2023). *A qualitative study exploring the role of formal networks on the career advancement of female leaders: Insights from the technology sector*.
- Jonsdottir, B., Sigurjonsson, T. O., Johannsdottir, L., & Wendt, S. (2022). Barriers to using ESG data for investment decisions. *Sustainability*, 14(9), 5157.
- Junaedi, J. (2024). Understanding the role of finance in sustainable development: A qualitative study on environmental, social, and governance (ESG) practices. *Golden Ratio of Finance Management*, 4(2), 113–130.
- Kalaoglu, E. E., & Dumanli Gok, G. (2024). Comparison of acceptability of orthodontic appliances in children in mixed dentition treated with removable acrylic appliances and Invisalign first: a cross-sectional study. *BMC Oral Health*, 24(1), 1270.
- Kalra, P. (2024). Corporate social responsibility and stakeholder theory: An integrated review.

Journal of Management & Entrepreneurship, 10.

- Kampoowale, I., Kateb, I., Salleh, Z., & Alahdal, W. M. (2025). Board gender diversity and ESG performance: pathways to financial success in Malaysian emerging market. *International Journal of Emerging Markets*, 20(11), 4666–4688.
- Kanadli, S. B., Alawadi, A., Kakabadse, N., & Zhang, P. (2022). Do independent boards pay attention to corporate sustainability? Gender diversity can make a difference. *Corporate Governance: The International Journal of Business in Society*, 22(7), 1390–1404.
- Kandpal, V., Jaswal, A., Santibanez Gonzalez, E. D. R., & Agarwal, N. (2024). Corporate social responsibility (CSR) and ESG reporting: redefining business in the twenty-first century. In *Sustainable energy transition: Circular economy and sustainable financing for environmental, social and governance (ESG) practices* (pp. 239–272). Springer.
- Kanter, R. M. (1977). Some effects of proportions on group life: Skewed sex ratios and responses to token women. *American Journal of Sociology*, 82(5), 965–990.
- Kanwal, Z., Audi, M., & Alam, M. (2025). *Corporate Tax Strategy, Risk, And Long-Term Value Creation: Insights from Technology, Pharmaceutical, And Manufacturing Sectors*.
- Kaszowska-Mojša, J. (2026). *Financial Instability and Systemic Risk: From the Global Financial Crisis and Beyond*. Taylor & Francis.
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The Worldwide Governance Indicators: Methodology and analytical issues. *Hague Journal on the Rule of Law*, 3(2), 220–246.
- Kauppi, K. (2022). Institutional theory. In *Handbook of theories for purchasing, supply chain and management research* (pp. 320–334). Edward Elgar Publishing.
- Kavadis, N., & Thomsen, S. (2023). Sustainable corporate governance: A review of research on long-term corporate ownership and sustainability. *Corporate Governance: An International Review*, 31(1), 198–226.
- Keisse, H. H., & Jaafar, A. (2025). The impact of ESG engagement and gender diversity on

- corporate investment efficiency: evidence from European listed firms. *Journal of Financial Reporting and Accounting*.
- Khan, H., Khan, S., & Zuojun, F. (2022). Institutional quality and financial development: Evidence from developing and emerging economies. *Global Business Review*, 23(4), 971–983.
- Khan, M. A., Haddad, H., Odeh, M., Haider, A., & Khan, M. A. (2022). Institutions, culture, or interaction: what determines the financial market development in emerging markets? *Sustainability*, 14(23), 15883.
- Khatib, S. F. A., Abdullah, D. F., Elamer, A., Yahaya, I. S., & Owusu, A. (2023). Global trends in board diversity research: a bibliometric view. *Meditari Accountancy Research*, 31(2), 441–469.
- Khoiriah, T., Rokhim, R., & Wibowo, B. (2026). Basel III capital and conservation buffers: Implications for the credit risk and financial stability of Indonesian banks. *Journal of Risk and Financial Management*, 19(4), 291.
- Konrad, A. M., Kramer, V., & Erkut, S. (2008). Critical mass: The impact of three or more women on corporate boards. *Organizational Dynamics*, 37(2), 145-164.
- Kowsar, M. M. (2022). A systematic review of credit risk assessment models in emerging economies: A focus on Bangladesh's commercial banking sector. *American Journal of Advanced Technology and Engineering Solutions*, 2(01), 1–31.
- Krause, R., Withers, M. C., & Waller, M. (Mara) J. (2025). Reducing bias through board decision-making: An information-processing model of board decision synergy. *Academy of Management Review*, 50(4), 788–810.
- Kulova, I., & Nikolova-Alexieva, V. (2023). ESG strategy: Pivotal in cultivating stakeholder trust and ensuring customer loyalty. *E3S Web of Conferences*, 462, 3035.
- Kumar, S. (2025). Obstacles and Transformative Impact of Women's Involvement in Indian

- Family Businesses. *Journal of Marketing & Supply Chain Management*. SRC/JMSCM-205. DOI: Doi. Org/10.47363/JMSCM/2025 (4), 173, 2–4.
- Kusi, B. A., Agbloyor, E. K., Simplice, A. A., & Abor, J. (2022). Foreign bank and banking stability in Africa: does strong and weak corporate governance systems under different regulatory regimes matter? *Journal of Financial Economic Policy*, 14(2), 207–241.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1998). Law and finance. *Journal of Political Economy*, 106(6), 1113-1155.
- Laique, U., Abdullah, F., Rehman, I. U., & Sergi, B. S. (2023). Two decades of research on board gender diversity and financial outcomes: Mapping heterogeneity and future research agenda. *Corporate Social Responsibility and Environmental Management*, 30(5), 2121–2144.
- Landi, G. C., Iandolo, F., Renzi, A., & Rey, A. (2022). Embedding sustainability in risk management: The impact of environmental, social, and governance ratings on corporate financial risk. *Corporate Social Responsibility and Environmental Management*, 29(4), 1096–1107.
- Lee, S. P. (2023). Board monitoring effectiveness and corporate sustainability performance: do legal system and CEO non-duality matter? *Review of Managerial Science*, 17(4), 1243–1267.
- Lefley, F., & Janeček, V. (2024). Board gender diversity, quotas and critical mass theory. *Corporate Communications: An International Journal*, 29(2), 139–151.
- Lim, W. M. (2024). A typology of validity: content, face, convergent, discriminant, nomological and predictive validity. *Journal of Trade Science*, 12(3), 155–179.
- Lin, Y. (2024). The role of ESG strategy implementation in long-term value creation for companies. *Journal of Social Science and Cultural Development*, 1(2).
- Liu, C., & Wu, Y. W. (2023). Gender diversity and bank risk-taking: female directors and

- executives. *Managerial Finance*, 49(5), 761–788.
- Liu, J., & Xie, J. (2024). The effect of ESG performance on bank liquidity risk. *Sustainability*, 16(12), 4927.
- Liu, Y., Kim, C. Y., Lee, E. H., & Yoo, J. W. (2022). Relationship between sustainable management activities and financial performance: Mediating effects of non-financial performance and moderating effects of institutional environment. *Sustainability*, 14(3), 1168.
- Liu, Y., Osterrieder, J., Misheva, B. H., Koenigstein, N., & Baals, L. (2023). Navigating the environmental, social, and governance (ESG) landscape: constructing a robust and reliable scoring engine-insights into data source selection, indicator determination, weighting and aggregation techniques, and validation processes for comprehensive ESG scoring systems. *Open Research Europe*, 3, 119.
- Luh, P. K. (2025). Gendered leadership and reporting timeliness: examining the effect of female leadership and the role of board gender diversity. *Journal of Applied Accounting Research*, 26(5), 1006–1027.
- Ma, L., Yuan, X., Lu, J., Li, Y., Gao, W., Yan, H., & Zhang, X. (2024). The ESG performance influence mechanism analysis-based on empirical analysis. *Plos One*, 19(5), e0295548.
- Ma, N. (2023). Integration of ESG factors in portfolio management: international trends and practices. *Integration*, 12(2), 2023.
- Ma, S., Kor, Y. Y., & Seidl, D. (2022). Top management team role structure: A vantage point for advancing upper echelons research. *Strategic Management Journal*, 43(8), O1–O28.
- Ma, T., & Liu, Q. (2025). Building success: Top-level governance strategies for transport megaprojects. *Research in Transportation Business & Management*, 62, 101449.
- Maji, S. G., & Saha, R. (2024). Female directors and firms' financial performance: an empirical application of Kanter's theory in the Indian context. *Corporate Governance: The*

- International Journal of Business in Society*, 24(4), 882–899.
- Makridou, G., Doumpou, M., & Lemonakis, C. (2024). Relationship between ESG and corporate financial performance in the energy sector: empirical evidence from European companies. *International Journal of Energy Sector Management*, 18(4), 873–895.
- Marchini, P. L., Tibiletti, V., Mazza, T., & Gabrielli, G. (2022). Gender quotas and the environment: environmental performance and enforcement. *Corporate Social Responsibility and Environmental Management*, 29(1), 256–272.
- Mardini, G. H., & Elleuch Lahyani, F. (2024). Female directors' representation and intellectual capital efficiency: does institutional ownership matter? *Journal of Applied Accounting Research*, 25(3), 397–419.
- Martin, J. L. (2022). *Corporate Governance and Women on the Board of Directors: the Legal Framework towards a Minimum Harmonisation in the European Union*. Université Paris-Saclay.
- Martins, L. L., & Sohn, W. (2022). How does diversity affect team cognitive processes? Understanding the cognitive pathways underlying the diversity dividend in teams. *Academy of Management Annals*, 16(1), 134–178.
- Mateev, M., Sahyouni, A., & Moudud-Ul-Huq, S. (2026). Connecting the ESG factors to banks' financial performance and sustainability: the need for strategic alignment. *Cogent Business & Management*, 13(1), 2645274.
- Mazumder, M. M. M. (2025). An empirical analysis of SDG disclosure (SDGD) and board gender diversity: insights from the banking sector in an emerging economy. *International Journal of Disclosure and Governance*, 22(1), 47–63.
- Mehzabin, S., Shahriar, A., Hoque, M. N., Wanke, P., & Azad, M. A. K. (2023). The effect of capital structure, operating efficiency and non-interest income on bank profitability: new evidence from Asia. *Asian Journal of Economics and Banking*, 7(1), 25–44.

- Meiden, C., & Silaban, A. (2023). Exploring the measurement of environmental performance in alignment with environmental, social, and governance (ESG): a qualitative study. *Information Sciences Letters*, 12(9), 2287–2297.
- Meng, T., Yahya, M. H. D. H., Ashhari, Z. M., & Yu, D. (2023). ESG performance, investor attention, and company reputation: Threshold model analysis based on panel data from listed companies in China. *Heliyon*, 9(10).
- Menicucci, E. (2025). ESG risks into the risk management framework. In *ESG Integration in the Banking Sector: Navigating Regulatory Frameworks and Strategic Challenges for Financial Institutions* (pp. 53–84). Springer.
- Menicucci, E., & Paolucci, G. (2022a). Board diversity and ESG performance: evidence from the Italian banking sector. *Sustainability*, 14(20), 13447.
- Menicucci, E., & Paolucci, G. (2022b). Gender diversity and bank risk-taking: an empirical investigation in Italy. *Corporate Governance: The International Journal of Business in Society*, 22(2), 317–339.
- Mirza, N., Afzal, A., Umar, M., & Skare, M. (2023). The impact of green lending on banking performance: Evidence from SME credit portfolios in the BRIC. *Economic Analysis and Policy*, 77, 843–850.
- Mirza, N., Umar, M., Lobont, O.-R., & Safi, A. (2025). ESG lending, technology investment and banking performance in BRICS: navigating sustainability and financial stability. *China Finance Review International*, 15(2), 324–336.
- Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *American Economic Review*, 48(3), 261-297.
- Moussa, A. S., Elmarzouky, M., & Shohaieb, D. (2024). Green governance: How ESG initiatives drive financial performance in UK firms? *Sustainability*, 16(24), 10894.
- Muhammad, H. (2025). Strategic Change Through Governance: A Gender Diversity

- Perspective. *Business Strategy & Development*, 8(3), e70206.
- Muhammad, H., Migliori, S., & Mohsni, S. (2023). Corporate governance and firm risk-taking: the moderating role of board gender diversity. *Meditari Accountancy Research*, 31(3), 706–728.
- Müller-Horn, F., Fourné, S. P. L., Arndt, F., & Obembe, D. (2024). Cognition and gender diversity in top management teams: what do we know and where do we go? *Management Review Quarterly*, 74(2), 567–596.
- Najaf, R., Najaf, K., Wahba, K., & Khlie, K. (2025). How Female Director Attributes Drive Governance and Firm Performance Through Critical Mass Theory. *Business Strategy & Development*, 8(4), e70248.
- Nájera-Sánchez, J.-J., Martínez-Canas, R., García-Haro, M.-Á., & Martínez-Ruiz, M. P. (2022). Exploring the knowledge structure of the relationship between value co-creation and customer satisfaction. *Management Decision*, 60(12), 3366–3387.
- Naseer, M. M., Guo, Y., & Zhu, X. (2025). Short-term costs and long-term gains of ESG initiatives in high-risk environments: Evidence from UK firms. *Development and Sustainability in Economics and Finance*, 7, 100075.
- Nirmala, G., Sinouvassane, N., Gnanapreetha, K. P., Juno Jasmine, J., & Thomas, A. A. (2026). Social Issues in Management. In *Empowering Business Through Technology: Innovations Shaping Our Future* (pp. 867–874). Springer.
- Nyamae, S. (2024). Relationship between gender diversity in leadership and corporate social responsibility practices. *American Journal of Leadership and Governance*, 9(1), 56–67.
- Olanrewaju, O. I. K., Daramola, G. O., & Babayeju, O. A. (2024). Transforming business models with ESG integration: A strategic framework for financial professionals. *World Journal of Advanced Research and Reviews*, 22(3), 554–563.
- Oyewo, B. M. (2024). *Impact of corporate governance mechanisms on environmental, social*

- and governance (ESG) performance. University of Southampton.
- Spence, M. (1973). Job market signaling. *Quarterly Journal of Economics*, 87(3), 355-374.
- Torchia, M., Calabro, A., & Huse, M. (2011). Women directors on corporate boards: From tokenism to critical mass. *Journal of Business Ethics*, 102(2), 299-317.
- Öztürk, O., & Bağış, M. (2025). Bridging resource dependence theory and resource-based view: a theoretical synthesis. *Management Decision*.
- Palmieri, E., & Geretto, E. F. (2024). ESG innovation in the financial industry. In *Adapting to change: ESG and alternative finance in shaping the bank-firm relationship* (pp. 63–95). Springer.
- Pandey, A., Srivastava, N., & Gambhir, V. (2024). Mitigating Cognitive Biases in Organizational Decision-Making for Enhanced Effectiveness. *Journal of Asia Entrepreneurship and Sustainability*, 20(1), 129–180.
- Pandey, N., Andres, C., & Kumar, S. (2023). Mapping the corporate governance scholarship: Current state and future directions. *Corporate Governance: An International Review*, 31(1), 127–160.
- Pandey, S., & Kumar, D. (2020). Customer-to-customer value co-creation in different service settings. 23(1), 123–143. <https://doi.org/10.1108/QMR-09-2018-0106>
- Peng, X., Song, Y., & Yeung, D. (2022). Does Board Gender Diversity Improve Environmental Disclosure of Multinational Corporations? A Cross-Cultural Analysis. *Polish Journal of Environmental Studies*, 31(5).
- Pinho, M., & Gaunt, R. (2024). Biological essentialism, gender ideologies, and the division of housework and childcare: Comparing male carer/female breadwinner and traditional families. *The Journal of Social Psychology*, 164(1), 59–75.
- Piříke, R., & Gaile-Sarkane, E. (2025). The Synthesis of Diversity Management Concept and Upper Echelons Theory. *ENVIRONMENT. TECHNOLOGY. RESOURCES. Proceedings*

- of the International Scientific and Practical Conference, 1*, 439–446.
- Primacintya, V. A., & Kusuma, I. W. (2025). Environmental, social and governance (ESG) performance and earnings management: the role of gender diversity. *Asian Journal of Accounting Research, 10*(3), 294–314.
- Putri, N. A. A. (2025). THE CONCEPTUAL OF THEORETICAL AND OPERATIONAL DEFINITIONS OF VARIABLES. *Quantitative Research in English Language Teaching: Concepts and Applications, 74*.
- Pyka, I., Karkowska, R., & Nocoń, A. (2025). ESG activities and their influence on commercial banks' profitability and financial stability. *Journal of Entrepreneurship, Management and Innovation, 21*(4), 54–75.
- Qawasmeh, R., Samara, H., Alslaibi, N., Farha, E. K. K. A., & Elamer, A. A. (2026). Between Virtue and Risk: ESG Dynamics and the Strategic Role of Gender-Diverse Boards. *Corporate Social Responsibility and Environmental Management*.
- Qiu, K. (2024). Achieving sustainable development through ESG integration: a comprehensive analysis. *2024 10th International Conference on Humanities and Social Science Research (ICHSSR 2024)*, 116–122.
- Ramadan, M. M., & Hassan, M. K. (2022). Board gender diversity, governance and Egyptian listed firms' performance. *Journal of Accounting in Emerging Economies, 12*(2), 279–299.
- Raouf, H., & Ahmed, H. (2022). Risk governance and financial stability: A comparative study of conventional and Islamic banks in the GCC. *Global Finance Journal, 52*, 100599.
- Rataj, O., Alcorta, L., Raes, J., Yilmaz, E., Riccardo, L. E., & Sansini, F. (2025). Sustainability vs profitability: Innovating in circular economy financing practices by European banks. *Sustainable Production and Consumption, 53*, 1–16.
- Rau, P. R., & Yu, T. (2024). A survey on ESG: investors, institutions and firms. *China Finance Review International, 14*(1), 3–33.

- Risi, D., Vigneau, L., Bohn, S., & Wickert, C. (2023). Institutional theory-based research on corporate social responsibility: Bringing values back in. *International Journal of Management Reviews*, 25(1), 3–23.
- Rixom, J. M., Jackson, M., & Rixom, B. A. (2023). Mandating diversity on the board of directors: do investors feel that gender quotas result in tokenism or added value for firms? *Journal of Business Ethics*, 182(3), 679–697.
- Rosario, S., & Mavuri, S. (2026). From Risk to Returns: An Analysis of Asset Quality, Financial Ratios, and Market Valuation in Indian Banks. *Risks*, 14(1), 16.
- Saleh, M. W. A., Alshdaifat, S. M., Shubita, M. F., Mansour, M., & Lutfi, A. (2025). Gender diversity and environmental, social, and governance: unlocking solutions to corporate risk. *Business Strategy & Development*, 8(1), e70097.
- Salem, M. R. M., Shahimi, S., & Alma'amun, S. (2024). Does mediation matter in explaining the relationship between ESG and bank financial performance? A scoping review. *Journal of Risk and Financial Management*, 17(8), 350.
- Salihi, A. A., Ibrahim, H., & Baharudin, D. M. (2024). Gender diversity, corporate social responsibility and real earnings management for policy management decision: evidence from emerging market. *Journal of Science and Technology Policy Management*, 15(6), 1247–1265.
- Salim, S. (2023). Promoting firm performance via board of directors effectiveness: A study of financial services companies In New Orleans. *Journal Of Management, Accounting, General Finance And International Economic Issues*, 3(1), 16–31.
- Samans, R., & Nelson, J. (2022). Corporate governance and oversight. In *Sustainable Enterprise value creation: Implementing stakeholder capitalism through full ESG integration* (pp. 103–140). Springer.
- Sancha, C., Gutierrez-Gutierrez, L., Tamayo-Torres, I., & Gimenez Thomsen, C. (2023). From

- corporate governance to sustainability outcomes: the key role of operations management. *International Journal of Operations & Production Management*, 43(13), 27–49.
- Santucci, C., López-Valcarcel, B. G., Avendaño-Solá, C., Bautista, M. C., Pino, C. G., García, L. L., Martín-Perez, E., & López, P. G. (2023). Gender inequity in the medical profession: the women doctors in Spain (WOMEDS) study. *Human Resources for Health*, 21(1), 77.
- Sarhan, A. A., & Al-Najjar, B. (2023). The influence of corporate governance and shareholding structure on corporate social responsibility: The key role of executive compensation. *International Journal of Finance & Economics*, 28(4), 4532–4556.
- Sari, R. (2023). Enhancing corporate governance through effective oversight and accountability. *Advances: Jurnal Ekonomi & Bisnis*, 1(6), 344–356.
- Schimperna, F., & Loizzo, T. (2022). ESG disclosure: regulatory framework and challenges for Italian banks. *Bank of Italy Occasional Paper*, 744.
- Schoonjans, E., Hottenrott, H., & Buchwald, A. (2024). Welcome on Board? Appointment Dynamics of Women as Directors: E. Schoonjans et al. *Journal of Business Ethics*, 192(3), 561–589.
- Shaikh, A. S. (2024). The Role of Organizational Culture in Shaping Corporate Governance Practices: A Case Study Approach. *Journal Of Business And Management Research*, 3(4), 1–20.
- Shanmugam, J. K., Saidon, I. M., Said, R. H., & Noor, M. M. (2025). Navigating Risk and Returns: Unraveling the Impact of Accounting Conservatism on Corporate Performance through Strategic Decision-Making. *3rd International Conference on Business, Finance, Management and Economic (BizFAME 2024)*, 283–296.
- Shohaieb, D., Elmarzouky, M., & Albitar, K. (2022). Corporate governance and diversity management: evidence from a disclosure perspective. *International Journal of Accounting & Information Management*, 30(4), 502–525.

- Singh, R., Gupta, C. P., & Chaudhary, P. (2024). Defining Return on Assets (ROA) in empirical corporate finance research: a critical review. *Empirical Economics Letters*.
- Singhanian, M., & Saini, N. (2023). Institutional framework of ESG disclosures: comparative analysis of developed and developing countries. *Journal of Sustainable Finance & Investment*, 13(1), 516–559.
- Singhanian, M., Saini, N., Shri, C., & Bhatia, S. (2024). Cross-country comparative trend analysis in ESG regulatory framework across developed and developing nations. *Management of Environmental Quality: An International Journal*, 35(1), 61–100.
- Siow, O. (2023). What constitutes substantive representation, and where should we evaluate it? *Political Studies Review*, 21(3), 532–538.
- Siraj, M. L., Syarifuddin, S., Tadampali, A. C. T., Zainal, H., & Mahmud, R. (2024). Understanding financial risk dynamics: Systematic literature review inquiry into credit, market, and operational risks:(A long-life lesson from global perspective to Indonesia market financial strategy). *Atestasi: Jurnal Ilmiah Akuntansi*, 7(2), 1186–1213.
- Smith, S. G., & Sinkford, J. C. (2022). Gender equality in the 21st century: Overcoming barriers to women's leadership in global health. *Journal of Dental Education*, 86(9), 1144–1173.
- Srivastava, A. (2023). Governance in financial institutions: Key elements and preventing the failures. *Asian Journal of Economics and Banking*, 7(3), 424–434.
- Sulkowski, A., & Jebe, R. (2022). Evolving ESG reporting governance, regime theory, and proactive law: Predictions and strategies. *American Business Law Journal*, 59(3), 449–503.
- Suprabha, K. R., Sreepriya, J., & Prasad, K. (2025). The impact of ESG disclosure on mitigating financial distress: exploring the moderating role of firm life cycle. *International Journal of Disclosure and Governance*, 22(3), 577–590.
- Suryadarma, F. R., & Pujiyono, P. (2025). Implementation of prudential principles in risk

- management in digital banking business models. *Devotion: Journal of Research and Community Service*, 6(1), 19–29.
- Szewczyk, Ł., & Szustak, G. (2023). Disclosure of Non-Financial Information in Banks-an ESG Perspective. Regulatory Requirements and Banking Practice. *Annales Universitatis Mariae Curie-Skłodowska, Sectio H-Oeconomia*, 57(2), 157–174.
- Taparia, M., & Lenka, U. (2022). An integrated conceptual framework of the glass ceiling effect. *Journal of Organizational Effectiveness: People and Performance*, 9(3), 372–400.
- Temizhan, E., Mirtagioglu, H., & Mendes, M. (2022). Which correlation coefficient should be used for investigating relations between quantitative variables. *Acad. Sci. Res. J. Eng. Technol. Sci*, 85(1), 265–277.
- Tessaro, M. (2022). *The role of numbers, power and status of female corporate directors on gender diversity below the board*. Cranfield University.
- Thompson, R. M., & Alleyne, P. (2023). Role of a board of directors and corporate governance in a state-owned enterprise. *Corporate Governance: The International Journal of Business in Society*, 23(3), 478–492.
- Thu Quang, L., & Linh, N. D. (2026). ESG Performance and Bank Financial Risk: The Moderating Role of Economic Policy Uncertainty in Vietnam. *Asian Journal of Applied Economics*, 33(1), 1–19.
- Tildesley, R., Lombardo, E., & Verge, T. (2022). Power struggles in the implementation of gender equality policies: the politics of resistance and counter-resistance in universities. *Politics & Gender*, 18(4), 879–910.
- Tipu, W. A., & Yousaf, T. (2022). Agency theory in public-private partnership projects. *Administrative and Management Sciences Journal*, 1(1), 71–78.
- Tran, H. S., Nguyen, T. D., & Nguyen, T. L. (2023). Market structure, institutional quality and bank stability: evidence from emerging and developing countries. *Competitiveness Review*:

An International Business Journal, 33(6), 1046–1068.

- Trireksani, T., Djajadikerta, H. G., Kamran, M., & Butt, P. (2024). The impact of country characteristics on board gender diversity and sustainability performance: a global perspective. *Sustainability*, 16(7), 3057.
- Trivedi, G., Bhagat, M., & Sharma, K. (2024). Corporate governance and financial performance: the role of management practices in enhancing shareholders' value. *Educational Administration: Theory And Practice*, 30(4), 8699–8704.
- Tubik, D., & Herberger, T. A. (2024). How endogeneity problems are addressed in analyzing the relationship between diversity in top management teams and company financial performance—a systematic literature review. *Management Review Quarterly*, 1–30.
- Tutar, H., Štreimikienė, D., & Mutlu, H. T. (2025). The Relationship Between ESG and Financial Performance in Global Firms: A Multidimensional Study Across Sectors and Regions for the Period 2015–2025. *Corporate Social Responsibility and Environmental Management*, 32(6), 8280–8294.
- Umar, U. H., Al-Faryan, M. A. S., & Osemy, A. Z. Z. (2024). Does financial expertise influence Islamic bank risk-taking? *Managerial Finance*, 50(12), 2011–2030.
- Vătavu, S. (2015). The impact of capital structure on financial performance in Romanian listed companies. *Procedia Economics and Finance*, 32, 1314–1322.
- Vieira, E., Madaleno, M., & Lobão, J. (2022). Gender diversity in leadership: A bibliometric analysis and future research directions. *International Journal of Financial Studies*, 10(3), 53.
- Wali, K., van Paridon, K., & Darwish, B. K. (2023). Strengthening banking sector governance: challenges and solutions. *Future Business Journal*, 9(1), 95.
- Wang, B., & Yang, Y. (2025). The impact of female board representation on corporate environmental, social and governance performance: A dual perspective based on

- institutional environment and market competition. *Corporate Social Responsibility and Environmental Management*, 32(3), 3802–3813.
- Wasiuzzaman, S., & Subramaniam, V. (2023). Board gender diversity and environmental, social and governance (ESG) disclosure: is it different for developed and developing nations? *Corporate Social Responsibility and Environmental Management*, 30(5), 2145–2165.
- Widarko, A., & Anwarodin, M. K. (2022). Work motivation and organizational culture on work performance: Organizational citizenship behavior (OCB) as mediating variable. *Golden Ratio of Human Resource Management*, 2(2), 123–138.
- Wirba, A. V. (2024). Corporate social responsibility (CSR): The role of government in promoting CSR. *Journal of the Knowledge Economy*, 15(2), 7428–7454.
- Wong, S. L. (2024). The impact of female representation and ethnic diversity in committees on environmental, social and governance performance in Malaysia. *Society and Business Review*, 19(2), 207–229.
- Wright, C., & Nyberg, D. (2024). Corporations and climate change: An overview. *Wiley Interdisciplinary Reviews: Climate Change*, 15(6), e919.
- Wu, J., Richard, O. C., Triana, M. del C., & Zhang, X. (2022). The performance impact of gender diversity in the top management team and board of directors: A multiteam systems approach. *Human Resource Management*, 61(2), 157–180.
- Wu, X., Zhu, Z., Yan, A., & Zhang, K. (2026). Aligning governance mechanisms and firm capabilities for omnichannel integration in manufacturing. *Journal of Manufacturing Technology Management*, 37(3), 681–703.
- Yahaya, O. A. (2025). Board gender diversity and earnings quality. *Available at SSRN 5216585*.
- Yahaya, O. A. (2026a). Employee welfare practices and organizational financial performance: A panel study. *Journal of Accounting and Finance*, 8(2), 100–142.

- Yahaya, O. A. (2026b). Impact of Female Representation in Nigerian Audit Committees and Corporate Governance Quality. *Journal of Management Studies*, 2(2), 1–31.
- Yahaya, O. A. (2026c). Institutional quality and corporate governance effectiveness of Nigerian listed firms. *Journal Of*.
- Yahaya, O. A. (2026d). Regulatory frameworks and financial stability of Nigerian banks: An empirical investigation of Basel III and CBN Regulations on capital adequacy and non-performing loans. *Journal of Economics and Management Studies*, 23(2), 42–65.
- Yakubu, I. N., & Oumarou, S. (2023). Boardroom dynamics: The power of board composition and gender diversity in shaping capital structure. *Cogent Business & Management*, 10(2), 2236836.
- Yang, M., Chen, L., Wang, J., Msigwa, G., Osman, A. I., Fawzy, S., Rooney, D. W., & Yap, P.-S. (2023). Circular economy strategies for combating climate change and other environmental issues. *Environmental Chemistry Letters*, 21(1), 55–80.
- Yousuf, A., & Aldamen, H. (2021). Female representation on the board of directors and accrual quality within the context of cultural dimensions and accounting values. *Managerial Auditing Journal*, 36(4), 535–563.
- Yu, Z., Farooq, U., Alam, M. M., & Dai, J. (2024). How does environmental, social, and governance (ESG) performance determine investment mix? New empirical evidence from BRICS. *Borsa Istanbul Review*, 24(3), 520–529.
- Yuan, D., Gazi, M. A. I., Harymawan, I., Dhar, B. K., & Hossain, A. I. (2022). Profitability determining factors of banking sector: Panel data analysis of commercial banks in South Asian countries. *Frontiers in Psychology*, 13, 1000412.
- Yue, S., Khatib, S. F. A., Bajuri, N. H. B., Lee, Y., & Sulimany, H. G. H. (2026). Institutional ownership and corporate environmental innovation: the moderating role of board gender diversity. *International Journal of Emerging Markets*, 21(5), 1346–1372.

- Zairis, G., Liargovas, P., & Apostolopoulos, N. (2024). Sustainable finance and ESG importance: A systematic literature review and research agenda. *Sustainability*, 16(7), 2878.
- Zaman, R., Asiaei, K., Nadeem, M., Malik, I., & Arif, M. (2024). Board demographic, structural diversity, and eco-innovation: International evidence. *Corporate Governance: An International Review*, 32(3), 374–390.
- Zhang, G., Jia, Z., & Yan, S. (2022). Does gender matter? The relationship comparison of strategic leadership on organizational ambidextrous behavior between male and female CEOs. *Sustainability*, 14(14), 8559.