



# Examining ESG Disclosure and Financial Performance: The Role of Board Gender Diversity in Saudi Arabia

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## Abstract

This study analyzes how board gender diversity mediates the link between Environmental, Social, and Governance Disclosure (ESGD) and financial performance. We examined 540 observations from 135 Saudi non-financial listed firms. ESGD is monitored across environmental, governance, and social pillars, while financial success is measured by ROA and ROE. Structural equation modeling assessed mediation after direct and mediating effect models in panel data analysis. Higher ESGD disclosure lowers company performance by lowering ROA and ROE. Board gender diversity improves financial performance, but not significantly. Financial performance is greater for larger enterprises, although leverage lowers ROA but not ROE. Audit committee expertise and CSR sustainability committee ratings also lower financial performance. However, board gender diversity may mediate whether ESGD disclosure openness improves long-term financial success. Policymakers, investors, and board members may learn about board success in sustainable company initiatives. For ESG and financial balance, firms should have gender-diverse leadership. This study examines board gender diversity as a mediator of the ESGD-performance link, filling a vacuum in corporate governance and sustainability literature. This emphasizes gender diversity in business sustainability.

**Keywords:** Environmental Disclosure; Governance Disclosure; Social Disclosure; ESGD Disclosure; Board Gender Diversity; Financial Performance.

## 1. Introduction

Corporate disclosures have historically focused on financial performance, although ESG reporting has gained in importance. This tendency is supported by increased institutional and global transparency about social and environmental impacts. The demand for sustainable business strategies has enhanced the importance of non-financial disclosures. Over the last two decades, there has been an increasing demand for sustainability in business operations, particularly among publicly traded enterprises.

CSR has progressed from individual involvement to a collaborative response to global concerns such as social inequality and climate change. ESG issues must be addressed by executives, politicians, investors, and researchers. Environmental responsibility (climate action and emissions management), social issues (employee welfare, diversity, ethical practices, and supply chain accountability), and governance are all addressed in ESG reporting.

Companies are reporting more ESG since it reduces capital expenses and improves financial performance. Financial institutions and asset owners expect extensive ESG disclosures from firms. Strong ESG disclosures boost equity capital, demonstrating how environmental openness benefits enterprises (Cao et al., 2023; Aladwey & Alsudays, 2023; Matar & Saeed, 2022). However, uniform reporting and selective disclosures diminish comparability and reliability (Aladwey & Alsudays, 2023; Park et al., 2021).

Several variables contribute to discrepancies. Standardised ESG reporting precludes comparisons, making business sustainability ratings less accurate. Some firms use ESG reports to conceal their true behaviour, undermining trust and transparency. Stakeholders struggle to determine data availability and consistency. Selective ESG disclosure lowers reliability and widens reporting gaps (Aladwey & Alsudays, 2023; Li & Zhang, 2022). Academics continue to investigate internal and external ESG disclosure factors. Internal governance and managerial objectives influence disclosure practices just as much as external regulation and stakeholder pressure (Aladwey & Diab, 2023; Alsudays, 2023; Ramcharran et al., 2022).

Gender diversity on boards varies. Some studies imply that female board representation increases ESG transparency and corporate responsibility, while others say it is dependent on company culture and governance. Gender diversity, particularly ESG and sustainability, has dominated corporate governance discourse. Female directors are occasionally associated with increased corporate disclosure, but increasing gender representation without removing structural impediments to meaningful participation is unlikely (Bear et al., 2022; Perez, 2021; Hillman, 2023).

Women on boards are considered positive governance indicators in Europe and the United States. The discussion asks for additional ESG disclosure and boardroom diversity research. Saudi Arabia significantly supports such research. Vision 2030 promoted gender equality in leadership and sustainability. Despite the unknown impact of gender diversity on ESG disclosure, female board representation has increased (Aladwey and Alsudays, 2023; Yasser and Iqbal, 2021; Matar and Saeed, 2022). Cultural and legislative changes influence how women

make environmental project business decisions. Gender diversity on Saudi boards has the potential to impact worldwide company sustainability, governance, and culture. Board gender diversity is favourably connected to ESG disclosures. Companies' sustainability reporting became more transparent as more women joined boards. This demonstrates how gender diversity promotes corporate responsibility and ESG (Aladwey & Alsudays, 2023; Alsaadi & Ahmed, 2022; Gupta & Arora, 2023; Matar & Saeed, 2022)

This study broadens non-financial disclosure studies by assessing board gender diversity and ESG reporting. Corporate governance considerations such as independence, scale, and leadership duality have received greater attention than female directors' ESG disclosure impact. Data from a rising market indicate that social and environmental sustainability is receiving global attention (Hassan et al., 2022; Wang et al., 2022; Matar & Saeed, 2022). The majority of ESG research is conducted in industrialised nations such as the United States, the United Kingdom, and Canada. Western results may not apply to Saudi Arabia due to economic, political, and regulatory variations between established and emerging markets. This study looks at Saudi ESG disclosure policies and how governance changes impact corporate sustainability programs (Tayeb et al., 2021; Aladwey & Alsudays, 2023).

Finally, Bloomberg and Refinitiv are examples of modern ESG grading techniques that use public data to assess transparency. Evaluation standards influence ESG ratings, reducing their reliability. These challenges inspired this study to develop a bespoke ESG disclosure index based on global and Saudi laws. This method improves the accuracy and application of ESG evaluations in business sustainability assessments (Aladwey & Alsudays, 2023; Alsaadi & Ahmed, 2022; Matar & Saeed, 2022).

## 2. Institutional Background in Saudi Arabia

Saudi Arabia has one of the most prosperous economies in the Middle East, relying heavily on oil and gas. Since its inception, the Kingdom has been a significant energy player and OPEC member. Oil has increased GDP, government revenues, and exports. However, global oil price volatility and a growing emphasis on renewable energy and sustainability have compelled Saudi Arabia to diversify its economy (Aladwey and Alsudays, 2023; Khan et al., 2021). The 2016 development plan, Vision 2030, launched this economic revolution. Vision 2030 aims to expand the Kingdom's economy beyond oil by promoting tourism, finance, renewable energy, and manufacturing (Matar and Saeed, 2022; Al-Ghamdi & Al-Juhani, 2022). Saudi Arabia's culture values hierarchical enterprises, low female representation, and shareholder-centric governance. ESG reporting has declined as firms focus on financial and non-financial disclosures (Chambers & Partners, 2024; Aladwey & Diab, 2023). However, Vision 2030 prioritises inclusivity, sustainability, and openness, resulting in new ESG disclosure concerns and opportunities in gender diversity, stakeholder involvement, and CSR activities (Aladwey & Alsudays, 2023; Al-Ghamdi & Al-Juhani, 2022).

Saudi Arabia's regulatory measures have codified ESG reporting and tied business operations to global sustainability norms. The Saudi Stock Exchange's (Tadawul) ESG Disclosure Guidelines are a significant legislative milestone that requires firms to declare their ESG performance. Listed companies must disclose ESG data to ensure corporate reporting uniformity, comparability, and transparency (Saudi Exchange). The Saudi Capital Market Authority's (CMA) Corporate Governance Regulations require sustainability risk disclosure, governance frameworks, and board diversity. To build investor trust, companies must provide the CMA with comprehensive ESG disclosures that accurately reflect their sustainability plan (Aladwey & Diab, 2023). ESG disclosures are overseen by the Saudi Central Bank (SAMA) in accordance with ESG Risk Management guidelines. These standards require financial institutions to report on climate risk, corporate governance, and ethical investing. Finally, Saudi Arabia's ESG disclosure regulations have evolved in response to political and cultural changes. Vision 2030 supports economic diversification and sustainability; yet, the CMA Corporate Governance Regulations, Tadawul ESG Guidelines, and SAMA ESG Risk Management Guidelines all have an impact on business ESG disclosure. Saudi corporate governance is evolving as a result of institutional ownership and regulatory restrictions that encourage gender diversity and sustainability.

## 3. Theoretical Framework and Hypotheses Development

Freeman's 1984 stakeholder theory provides a detailed understanding of organizational management and business ethics. According to the theory, stakeholders should consider morality when making organizational decisions. This is critical for investigating ESGD aspects used in investment decisions (Donaldson and Preston, 1995; Freudenreich et al., 2020). Donaldson and Preston (1995) divide this theory into three perspectives: normative, instrumental, and descriptive. While stakeholders may have an impact on company value, the normative approach views them as goals in themselves, emphasizing their inherent value and rights. However, the instrumental approach suggests that stakeholders may assist a company in achieving its objectives and that stakeholder management can improve strategic and financial outcomes. The descriptive technique understands that ESGD has a demonstrable impact on corporate operations and financial performance. According to stakeholders, businesses that avoid ESGD risks and focus on possibilities perform better financially.

Agency theory, which investigates principal-agent connections (Fama & Jensen, 1983; Jensen & Meckling, 1976), provides insight into how board gender diversity influences business financial performance. BGD may assist the board in effectively controlling management, lowering agency costs, and improving firm performance (Bathala & Rao, 1995; Hillman & Dalziel, 2003). ESGD influences FP and is described by stakeholder theory. To argue that BGD mediates the relationship between ESGD and FP, this study employs stakeholder and agency theory. This study examines ESGD transparency, board gender diversity, and business performance using the arguments. When these interactions are combined into a more comprehensive model, BGD may operate as a mediator between ESGD disclosure and business performance. This study is noteworthy since it incorporates empirical research and the development of mediation models.

### 3.1. ESGD disclosure and firm performance

Studies have yielded mixed results regarding the correlation between Environmental, Social, and Governance Disclosure (ESGD) and firm performance (FP). Qiu et al. (2016) saw no significant effect; however, Yoon et al. (2018) propose that ESGD may elevate expenses, hence undermining a firm's competitive edge. Conversely, value-enhancing theory posits that ESGD enhances company performance, competitiveness, and shareholder value (Bernardi & Stark, 2018; Li et al., 2018). According to Yoon and Li (2018), ESGD has the potential to enhance operational efficiency and capital market performance. Stakeholder theory suggests that effective ESGD practices may fulfil the needs of investors, employees, consumers, and regulators, hence enhancing corporate success (Tantalo & Priem, 2016). Effective governance and ESGD practices enable organisations to fulfil stakeholder expectations and enhance performance (Aboud & Diab, 2018). Stakeholder theory endorses the favourable correlation between ESGD and corporate success (Aboud & Diab, 2018; Yoon et al., 2018); however, certain studies suggest neutral or adverse consequences attributable to costs (Qiu et al., 2016).

Research indicates both positive and negative relationships between ESGD and financial performance. Enhanced reputation, stakeholder contentment, and sustained financial performance are frequently referenced. Additional studies indicate that ESGD may elevate operational expenses, particularly in smaller businesses or sectors with constrained resources (Qiu et al., 2016; Yoon et al., 2018). Management may promote ESGD for personal reputation rather than long-term shareholder gain, hence impacting profitability, as per agency theory. ESGD and FP in Saudi Arabia may vary due to cultural, legislative, and commercial influences. The economy of Arabia is influenced by state-owned enterprises and the oil sector, in contrast to Western markets, where investor expectations and regulatory mechanisms govern ESGD. Saudi Vision 2030 promotes sustainability; nonetheless, the adoption of ESGD is inferior to that in Western economies, potentially impacting outcomes.

This study posits that effective ESGD practices confer a competitive advantage, enhance reputation, and augment corporate success, grounded in stakeholder and agency theories. Owing to its distinctive market attributes, ESGD may influence business success in Saudi Arabia differently than in Western markets. The hypothesis posits that organisations practicing ESGD exhibit superior business success, competitive advantages, and enhanced reputation. Owing to cultural, regulatory, and commercial disparities, ESGD may influence corporate performance in Saudi Arabia distinctively compared to Western economies.

H1: There is a significant positive relationship between ESGD disclosure and firm performance

### 3.2. ESGD Disclosure and board gender diversity

The association between ESGD and corporate performance is ambiguous. According to Yoon et al. (2018), ESGD may elevate expenses, hence diminishing a firm's competitive edge. Qiu et al. (2016) noted no substantial effect. Conversely, value-enhancing theory posits that ESGD enhances corporate performance, competitiveness, and shareholder value (Bernardi & Stark, 2018; Li et al., 2018). According to Yoon and Li (2018), ESGD has the potential to enhance operational efficiency and capital market performance. Stakeholder theory posits that effective ESGD practices fulfil the expectations of investors, employees, consumers, and regulators, hence enhancing organizational performance (Tantalo & Priem, 2016). ESGD and effective governance assist organizations in fulfilling stakeholder expectations and enhancing performance (Aboud & Diab, 2018). Stakeholder theory associates ESGD with company success (Aboud & Diab, 2018; Yoon et al., 2018); however, several studies indicate that costs may yield neutral or adverse effects (Qiu et al., 2016).

Agency theory elucidates the impact of ESGD on business performance by analysing principals (shareholders) and agents (managers). Agency theory posits that managers may prioritize ESGD for reputational enhancement or stakeholder contentment rather than shareholder advantage. The implementation of ESGD may be motivated by corporate social responsibility rather than by long-term profitability (Jensen & Meckling, 1976). Agency theory elucidates the potential tension between managers pursuing non-financial objectives through ESGD and shareholder value.

Stakeholder theory emphasizes a firm's obligations to employees, customers, suppliers, and the community, in contrast to shareholder theory. By satisfying various stakeholders, firms can enhance their reputation, foster stakeholder loyalty, and achieve long-term success (Freeman, 1984). Stakeholder theory posits that ESGD transparency enables organizations to generate value for all stakeholders, rather than solely for shareholders. ESGD can enhance stakeholder engagement, corporate reputation, employee productivity, and overall performance (Tantalo & Priem, 2016).

Research indicates both favorable and unfavorable relationships between ESGD and FP. Numerous individuals cite enhanced reputation, stakeholder contentment, and sustained financial performance. Additional research suggests that ESGD may elevate operating expenses, particularly in smaller enterprises or sectors with constrained resources (Qiu et al., 2016; Yoon, 2018). Agency theory posits that management may prioritize ESGD for personal prestige at the expense of long-term shareholder value, hence jeopardizing profitability. The Saudi ESGD and FP may vary owing to cultural, regulatory, and commercial factors. In Saudi Arabia, state-owned firms and the oil sector propel ESGD, in contrast to investor expectations and legal frameworks prevalent in Western economies. Saudi Vision 2030 advocates for sustainability; yet the adoption of ESGD is inferior to that in Western economies, thereby hindering success. This study posits that robust ESGD practices enhance business performance, reputation, and competitiveness, grounded in stakeholder theory and agency theory. Due to its unique market characteristics, ESGD may influence company performance in Saudi Arabia differently than in Western markets. Consequently, the hypothesis:

Hypothesis 2. There is a significant positive relationship between ESGD disclosure and board gender diversity

### 3.3. BGD and firm performance

Several studies have demonstrated that gender diversity promotes organisational performance. Duppati et al. (2020) discovered that gender-diverse boards benefit Indian and Singaporean companies. Before the 2008 financial crisis, Agyemang-Mintah and Schadewitz (2017) found a link between female board members and UK banking sector performance. Women on boards had a positive impact throughout the crisis, particularly in finance. Ullah et al. (2019) discovered that gender diversity increases corporate governance and business success in Pakistan by boosting client communication and board effectiveness. Sori (2012) discovered that gender-diverse boards, particularly those with two or more female directors, performed better financially and made sound decisions. Tleubayev et al. (2019) discovered that three or more female directors improve firm performance.

Morenogómez et al. (2018) proposed that having more women in leadership positions boosts organisational success by boosting decision-making and performance. Not all evidence is positive. Some studies show that gender diversity has little or no impact on financial success, depending on industry, board structure, and business size. Gender diversity on boards may reduce agency costs by improving oversight and decision-making, according to agency theory. According to agent theory, managers may act in their own best interests rather than those of their shareholders. Diverse perspectives on boards may reduce managerial misalignment and encourage more responsible governance, resulting in improved business performance. However, stakeholder theory emphasises that companies should satisfy all stakeholders, not just shareholders. Employees, clients, vendors, and communities. Gender diversity on boards advances stakeholder theory by boosting representation and allowing for more informed decision-making.

Companies that prioritise different stakeholder groups have better relationships, reputations, and long-term success. Stakeholder theory highlights that effective governance, including gender diversity, aids organisational success by satisfying stakeholder needs. Gender diversity in Saudi Arabia may be influenced by cultural, legal, and economic factors. Saudi Arabia's Vision 2030 encourages gender equality; however, gender-diverse boards may take longer to implement than in Western markets, impacting the relationship between female board participation and corporate performance. Agency and stakeholder theories could explain the disparity. According to agency theory, Saudi enterprises may confront specific managerial obstacles while integrating gender diversity, whereas stakeholder theory focuses on cultural transformations and evolving stakeholder expectations.

Hypothesis 3. There is a significant positive relationship between the BGD and firm performance

### 3.4. BGD mediates the relationship between ESGD disclosure and FP

There is no existing research that connects ESGD and FP. The observed mismatch resulted from the study's emphasis on the direct connection while neglecting other variables (Rahman et al., 2023b). This limited focus has overlooked other factors that may influence the ESGD-FP relationship. Consequently, BGD may play a significant role in the interaction between ESGD and FP. The perspectives, experiences, and knowledge of board gender diversity highlight concerns related to ESGD (Freeman et al., 2018; Hillman & Dalziel, 2003). Diversity on boards enhances stakeholder knowledge and the response to Environmental, Social, and Governance Disclosures (Bear et al., 2010; Islam, 2022). Moreover, diversity and inclusion within the boardroom can enhance ESGD outcomes, which have a substantial impact on FP (Dong et al., 2023). Empirical studies regarding the connections between BGD and ESGD have yielded inconsistent results. Diverse boards exhibit a greater utilisation of ESGD (Islam et al., 2022; Katmon, 2019; Post, 2011). Context, institutional frameworks, and assessment significantly influence board diversity (Calabrese and Manello, 2021). According to Dong et al. (2023), diverse boards implement policies related to environmental sustainability and gender diversity. Diverse boards promote robust environmental, social, and governance norms. RDT indicates that BGD enhances the connection between ESGD and firm success (Dong et al., 2023; Hillman & Dalziel, 2003; Islam, 2022). Diverse boardrooms facilitate connections between companies and external resources (Pfeffer & Salancik, 1978). Increased boardroom resources enhance ESGD and contribute to business success (Dong et al., 2023; Freeman, 2018; Hillman and Dalziel, 2003). Agency theory posits that BGD mitigates management and large shareholder opportunism while enhancing supervisory efficiency, thereby reducing agency costs (Bathala & Rao, 1995). Leading monitoring firms will favour ESGD rather than engaging in greenwashing. BGD assists companies in utilising ESGD to meet stakeholder expectations, enhance relationships, and gain a competitive advantage (Hillman & Dalziel, 2003). Stakeholder theory posits that ESGD investment prioritises the interests of stakeholders over those of shareholders (Barnes & Rubin, 2010). According to Barnca and Rubin (2010), ESGD overinvestment has an impact on corporate value. Excessive investment in ESGD enhances the credibility of managers among stakeholders. Overinvestment incurs significant costs (Krüger, 2015). Excessive investment negatively impacts markets, companies, and overall investment outcomes (Li Li Wang & Xa 2000). Arouri et al. (2019), Brance and Rodrigues (2008), and Nguyen (2022) provide evidence that ESG policies enhance financial performance. ESG practices mitigate corporate risks, researcher forecast inaccuracies, and organisational information asymmetry (Dhaliwal et al., 2011). It diminishes equity, debt, and resource expenditures (Dhaliwal et al., 2011; Bhuiyan & Nguyen, 2020; Amel-Zadeh & Serafeim, 2018). According to Fatemi et al. (2015), ESGD enhances corporate value by securing cash flow and ensuring survival. Nguyen et al. (2022) demonstrated that ESGD enhances both financial and competitive performance in firms. The advantages of ESGD will eventually offset initial investment costs. Liang and Vansteenkiste (2022) suggest investigating the relationship between board gender diversity and profitability. Limited research has examined the effects of BGD on ESGD/FP. This study examines BGD's role in mediating ESGD-FP. This study investigates the impact of BGD performance on ESGD and overall company performance through the use of sustainability metrics. A diverse board comprising women enhances ESG performance and contributes to overall company success. The hypothesis of the study is as follows:

Hypothesis 4. BGD mediates the relationship between ESGD disclosure and fFP

#### 4.1. Data collection and sampling

Saudi Arabia is a central hub for ESGD research due to the establishment of its inaugural Corporate Social Reporting (CSR) Framework by Malaysian corporations in 2006 (Mohammad & Wasiuzzaman). This study examines the correlation between ESGD disclosure and financial performance, as well as the mediating effect of board gender diversity, across 135 publicly listed financial businesses in Saudi Arabia from 2019 to 2022, encompassing 540 firm-year data. The exclusion criteria encompassed financial organizations owing to their unique capital structure and legal constraints, along with corporations possessing inadequate data. The chosen years succeeded the implementation of obligatory ESGD reporting by the categorization system of the Saudi Exchange. This selection enables academics to analyse the effects of these policies after adoption, focusing on recent years to identify trends and corporate reactions to ESGD reporting mandates. The chosen era aligns with the evolution and maturation of ESGD disclosure procedures, providing an in-depth analysis of the mediating effect of board gender diversity on the link between ESGD disclosure and financial success within the Saudi context.

This strategy was selected to focus on businesses most pertinent to the study aims, enabling a more concentrated and significant investigation of ESG disclosure procedures. The interval from 2019 to 2023 signifies a pivotal stage in the execution of Saudi Vision 2030, initiated in 2016. By 2019, preliminary changes and policies had been enacted, enabling a more substantive evaluation of their impacts. This chronology reflects the expedited changes, especially concerning women's empowerment and corporate governance, which intensified in the years subsequent to the Vision 2030 declaration. This study utilizes secondary data from the annual reports of 200 publicly listed Saudi companies to evaluate the influence of female board involvement on ESG disclosure using content analysis. Content analysis, extensively utilized in non-financial disclosure research, facilitates the systematic and impartial evaluation of textual data, identifying essential disclosure patterns while accounting for context, intents, and meanings. This study employed a coding technique derived from Sharma et al. (2020) to enhance dependability. The initial sample for this research consists of 540 firm-year observations from 135 publicly listed businesses. Sixty observations were excluded due to the lack of annual reports, resulting in inadequate data. Information on gender diversity and ESG disclosure was manually extracted from the public annual reports of firms. Table 1 presents a detailed makeup of the research sample.

**Table 1:** Sample Composition

Sample selection	Number of firms	Total observations/ years
Total number of firms extracted from the Saudi Exchange (Tadawul) as of December 31, 2023	235	600
Less		
Firms with missing data	100	60
Final sample size	135	540

#### 4.2. Data analysis procedures

The current study employed statistical analysis for data characterization. We subsequently analysed the correlation matrix, which evaluated the relationships among each variable in the model. Subsequent to a fundamental introduction to the data's validity, the model was subjected

to multiple regression analysis to ascertain the pattern and amplitude of the relationships, followed by a series of robustness evaluations to confirm the resilience of the results.

### 4.3. Operational definition of variables

#### 4.3.1. Predicted variables

For measuring firm performance, we selected two key financial metrics: Return on Assets (ROA) and Return on Equity (ROE). ROA is calculated by comparing the income after taxes to the average total assets over a given fiscal period, and is expressed as a percentage. The average total assets are determined by taking the mean of the total assets at the beginning and end of the year. On the other hand, ROE assesses the income available to common shareholders, excluding extraordinary items, over the past twelve months, relative to the average common equity during that period. It is also expressed as a percentage, with the average common equity being the mean value at the start and end of the twelve months.

#### 4.3.2. Explanatory variables

We used the Environmental, Social, and Governance (ESGD) score to represent the level of ESGD disclosure. In addition, we separately assessed the scores for each of the three ESGD pillars: Environmental (ENV), Social (SOC), and Governance (GOV).

- The ESGD score is an overall rating that combines self-reported data across the environmental, social, and governance aspects to provide a comprehensive view of a company's performance.
- The Environmental Pillar score evaluates how a company impacts both living and non-living natural systems, including elements like water, air, land, and ecosystems. This score reflects the company's effectiveness in managing environmental risks and exploiting opportunities to create long-term value for shareholders.
- The Social Pillar score assesses how well a company fosters trust and loyalty among its employees, customers, and the wider society through effective management practices. It serves as a gauge of the company's reputation and operational license, both of which are essential for sustaining long-term shareholder value.
- The Governance Pillar score examines the company's governance structures and processes to ensure that board members and executives act in the best interest of long-term shareholders. This score reflects the company's ability to manage its rights and obligations, implement proper incentives, and maintain checks and balances, all of which contribute to increasing shareholder value.

#### 4.3.3. Mediating variables

Board gender diversity (BGD): Board gender diversity is assessed by the share of women on the board.

#### 4.3.4. Control variables

- Audit Committee Expertise (ACEXP): Does the company possess an audit committee consisting of a minimum of three members, including at least one individual meeting the criteria of a "financial expert" as defined by Sarbanes-Oxley?
- Board-specific skills, percent (BEXP): Board expertise is gauged by the percentage of board members who have either industry-specific experience or significant financial acumen.
- CSR Sustainability Committee Score (SUSCSCORE): Is there a committee or senior management team at either the board level or within senior management responsible for making decisions regarding the company's CSR strategy?
- Firm size (FSIZE): The size of the firm is indicated by the natural logarithm of its combined assets.
- Leverage (LEV): The leverage of firms is determined by the ratio of total debt to total assets.

#### 4.3.5. Econometric tools and model specification

This study followed a thorough methodology to derive its findings, utilizing several analytical steps such as hierarchical regression and panel data analysis. The analysis was carried out in two stages using hierarchical regression. The first stage involved testing the direct impact of the predictors, including board gender diversity, on ESGD disclosures. The second stage focused on estimating the mediating role of board gender diversity in the relationship between ESGD disclosure and financial performance. To further validate these results, structural equation modelling (SEM) was used as an additional test to assess both direct and indirect effects simultaneously. Lastly, a sensitivity analysis was performed to ensure the robustness of the findings, confirming that the results were not overly reliant on specific assumptions. As a result, the following research models were developed:

$$FP_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 BGND_{it} + \beta_3 ACEXP_{it} + \beta_4 BEXP_{it} + \beta_5 SUSC_{it} + \beta_6 FSIZE_{it} + \beta_7 LEV + \epsilon_{it} \quad (1)$$

Where;

$$FP_{it} = \alpha + \beta_1 ENV_{it} + \beta_2 BGND_{it} + \beta_3 ACEXP_{it} + \beta_4 BEXP_{it} + \beta_5 SUSC_{it} + \beta_6 FSIZE_{it} + \beta_7 LEV + \epsilon_{it} \quad (2)$$

$$FP_{it} = \alpha + \beta_1 GOV_{it} + \beta_2 BGND_{it} + \beta_3 ACEXP_{it} + \beta_4 BEXP_{it} + \beta_5 SUSC_{it} + \beta_6 FSIZE_{it} + \beta_7 LEV + \epsilon_{it} \quad (3)$$

$$FP_{it} = \alpha + \beta_1 SOC_{it} + \beta_2 BGND_{it} + \beta_3 ACEXP_{it} + \beta_4 BEXP_{it} + \beta_5 SUSC_{it} + \beta_6 FSIZE_{it} + \beta_7 LEV + \epsilon_{it} \quad (4)$$

## 4. Empirical Results and Discussion

### 5.1. Descriptive statistics

Table 1 presents the descriptive statistics for all variables used in the study based on 540 firm-year observations. The mean ESG disclosure score (ESGD) is 45.82, indicating a moderate level of sustainability disclosure among the sampled firms, with values ranging from 5.00 to 90.50, showing substantial variation in ESG practices.

Among the sub-dimensions of ESG, the social (SOC) and governance (GOV) scores show relatively higher means (47.32 and 44.10, respectively), suggesting that firms are more active in social and governance initiatives compared to environmental (ENV) disclosure, which has the lowest mean (34.65). The financial performance indicators, ROA (mean = 0.072) and ROE (mean = 0.131), display wide dispersion, as reflected by their standard deviations, implying varying profitability levels across firms.

The board gender diversity (BGD) averages around 22.18%, signifying limited female representation on boards, though some firms report more than 50%. The audit committee expertise (ACEXP) and board expertise (BEXP) show mean values of 0.63 and 0.65, indicating that a majority of firms possess experienced members in governance structures. The sustainability score (SUSCSCORE) has a mean of 48.62, reflecting moderate sustainability performance across the sample. Firm size (FSIZE) averages 9.52, while leverage (LEV) has a mean of 0.24, showing that most firms maintain a relatively balanced capital structure with moderate debt dependence.

Overall, the data suggest noticeable variability among firms in ESG engagement, financial outcomes, and governance characteristics, providing a robust foundation for further regression and mediation analyses.

**Table 2:** Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ESGD	540	45.82	18.94	5.00	90.50
ENV	540	34.65	22.73	0.00	91.20
GOV	540	44.10	21.85	0.00	96.80
SOC	539	47.32	21.54	1.00	95.70
ROA	540	0.072	0.098	-0.450	0.820
ROE	540	0.131	0.285	-2.980	2.020
BGD	539	22.18	11.45	0.00	55.00
ACEXP	540	0.63	0.48	0	1
BEXP	540	0.65	0.48	0	1
SUSCSCORE	540	48.62	22.94	0.00	72.00
FSIZE	540	9.52	0.71	7.40	11.30
LEV	540	0.24	0.18	0.00	0.90

### 5.2. Correlation analysis

Table 3 presents the Pearson correlation coefficients among the study variables, highlighting the relationships between ESG disclosure, firm performance, board characteristics, and control variables.

The results show that ESG disclosure (ESGD) is strongly and positively correlated with its three sub-dimensions: environmental (ENV) ( $r = 0.818$ ,  $p < 0.001$ ), governance (GOV) ( $r = 0.668$ ,  $p < 0.001$ ), and social (SOC) ( $r = 0.789$ ,  $p < 0.001$ ). This indicates internal consistency and a high degree of interdependence among the ESG components.

Regarding firm performance, both return on assets (ROA) and return on equity (ROE) show weak but positive correlations with ESGD ( $r = 0.085$  and  $r = 0.157$ , respectively). The relationship between ROE and ESGD is statistically significant at the 1% level, suggesting that higher ESG engagement may contribute to improved equity returns, though its impact on asset efficiency remains modest.

Board gender diversity (BGD) is moderately and positively correlated with ESGD ( $r = 0.345$ ,  $p < 0.001$ ) and all its dimensions (ENV, SOC, and GOV), implying that gender-diverse boards may encourage stronger ESG practices. Additionally, BGD is positively related to firm performance indicators ROA ( $r = 0.102$ ,  $p < 0.05$ ) and ROE ( $r = 0.182$ ,  $p < 0.001$ ), reflecting that firms with more female representation on boards tend to perform better financially.

The control variables also show meaningful associations. Audit committee expertise (ACEXP) and board expertise (BEXP) are highly correlated with each other ( $r = 0.953$ ,  $p < 0.001$ ), suggesting that more expert boards are likely to promote sustainability disclosures. Firm size (FSIZE) exhibits a positive relationship with ESGD ( $r = 0.476$ ,  $p < 0.001$ ), implying that larger firms disclose more ESG information, while leverage (LEV) is positively but weakly correlated with ESGD ( $r = 0.137$ ,  $p < 0.001$ ), suggesting that firms with higher debt levels may still engage in ESG activities.

Finally, ROA and ROE are strongly correlated ( $r = 0.712$ ,  $p < 0.001$ ), confirming that both metrics capture related aspects of profitability. Negative correlations between FSIZE and ROA ( $r = -0.212$ ,  $p < 0.001$ ) and between LEV and ROA ( $r = -0.386$ ,  $p < 0.001$ ) imply that larger and more leveraged firms may face efficiency challenges in asset utilization.

Overall, the correlation results suggest that ESG practices are positively associated with firm performance and board diversity, highlighting the interconnection between governance quality, sustainability engagement, and financial outcomes.

**Table 3:** Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	ESGD	ENV	GOV	SOC	ROA	ROE	BGD	ACEXP	BEXP	SUSCSCORE	FSIZE	LEV
ESGD	1											
ENV	0.818*	1										
GOV	0.668*	0.448**	1									
SOC	0.789*	0.705**	0.515**	1								
ROA	0.085	0.041	0.069	0.079	1							

ROE	0.157* **	0.117**	0.112**	0.133** *	0.712***	1						
BGD	0.345* **	0.294** *	0.308** *	0.316** *	0.102*	0.182* **	1					
ACEXP	0.556* **	0.518** *	0.525** *	0.563** *	0.013	0.054	0.299* **	1				
BEXP	0.545* **	0.507** *	0.516** *	0.549** *	0.026	0.064	0.284* **	0.953* **	1			
SUSCS CO RE	0.392* **	0.359** *	0.262** *	0.346** *	0.046	0.071	0.159* **	0.289* **	0.283* **	1		
FSIZE	0.476* **	0.557** *	0.319** *	0.397** *	0.212***	- 0.108* *	0.208* **	0.432* **	0.417* **	0.209***	1	
LEV	0.137* **	0.243** *	0.087*	0.092*	0.386***	- 0.134* **	0.049	0.172* **	0.158* **	0.031	0.524* **	1

\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

The findings show that ESGD disclosure is positively associated with most of the control variables, suggesting that companies with well-qualified audit committees tend to make better ESGD disclosures. Boards with diverse skills and backgrounds are more likely to foster accountability and transparency, which results in more comprehensive ESGD reporting. Additionally, businesses that prioritize sustainability are more inclined to keep their ESGD disclosures clear and transparent. Larger companies are also more likely to provide detailed information about their environmental, social, and governance activities. Similarly, financially stable firms tend to allocate more resources to ESGD disclosure efforts.

Furthermore, the environmental, social, and governance pillars of ESGD, scoring 0.82, 0.80, and 0.69, respectively, show a strong positive relationship with overall ESGD, emphasizing that these pillars collectively contribute to the quality of ESGD disclosures. On the other hand, firm size (FSIZE) and leverage (LEV) have a negative association with ROA and ROE, indicating that smaller firms tend to achieve higher ROA and ROE. Similarly, firms with lower financial stability or insufficient assets relative to their equity may experience higher ROA and ROE. In our analysis, we examined each variable individually to avoid potential multicollinearity issues, as very few correlations exceeded the threshold of 70.

### 5.3. Regression analysis

Table 3 presents the results of the hierarchical regression analysis, which was conducted to examine how various independent variables influence both return on assets (ROA) and return on equity (ROE). The analysis is broken down into two stages. In the first stage, the direct effects of variables, including board gender diversity (BGD), on firm performance (FP) are estimated. This is represented by eight models, with models 1 to 4 corresponding to ROA and models 5 to 8 associated with ROE. The findings show that ESGD has a negative and significant impact on both ROA and ROE, suggesting that greater ESGD disclosure is linked to lower profitability and returns. Similarly, when looking at the environmental, social, and governance (ESG) pillars separately, each factor also shows a negative but statistically insignificant impact on ROA.

The analysis further supports the widely accepted idea that a higher representation of women on boards could lead to better financial performance, as BGD has a positive, though insignificant, impact across all models. Additionally, the firm size (FSIZE) is found to have a significant positive impact on both ROA and ROE, with larger companies showing higher profitability and returns. This could be attributed to their operational efficiencies, economies of scale, and larger resources. On the other hand, leverage negatively affects ROA but only has an insignificant impact on ROE. This suggests that firms need to manage their leverage carefully to improve financial efficiency and sustain positive returns. Board expertise (BEXP) also shows a positive impact on both ROA and ROE, implying that boards with diverse skills and expertise can lead to better financial outcomes. However, the results show unexpected findings, with audit committee expertise and CSR sustainability committee scores having a negative effect on ROA and ROE, indicating that higher scores in these areas may not necessarily be linked to improved financial performance.

In Table 4, the second stage of the hierarchical regression analysis examines the role of BGD as a mediating factor in the relationship between ESGD disclosure and firm performance. Here, BGD is found to have a positive and significant effect on both ROA and ROE. Unlike in Table 3, where BGD as an independent variable had no significant impact, when BGD is considered as a mediating variable, it significantly improves both ROA and ROE, highlighting its crucial role in enhancing firm performance.

The empirical results reveal an apparent inconsistency between the direct and indirect effects of ESGD on firm performance. The hierarchical regression shows that ESGD has a negative direct effect on ROA and ROE, whereas the mediation model indicates that ESGD has a positive indirect effect on performance through board gender diversity (BGD). These findings are not contradictory; instead, they highlight two different mechanisms through which ESG disclosure affects firm outcomes.

The negative direct effect suggests that ESGD may impose short-term costs such as compliance expenditures, reporting burdens, and investments in sustainability initiatives that reduce immediate profitability. This pattern aligns with prior research indicating that ESG activities often require upfront resource commitments, especially in emerging markets where ESG systems are still developing.

In contrast, the mediation results show that ESGD can enhance performance indirectly by promoting greater female representation on boards, which improves monitoring quality, stakeholder engagement, and strategic decision-making. Through this governance channel, ESGD contributes to long-term value creation, offsetting the short-term costs captured in the direct models.

Therefore, the combined findings indicate that the direct effect: ESGD can reduce short-term financial performance due to increased costs. Indirect (mediated) effect: ESGD strengthens governance structures, particularly via BGD, which improves performance over the long term. By explicitly distinguishing these mechanisms, the results show that ESGD is a dual-impact process: it may lower immediate profitability but simultaneously enhances governance quality that ultimately supports improved firm performance through board gender diversity.

**Table 4:** Hierarchical Regression – Step 1 - Direct Effect Model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ROA	ROA	ROA	ROA	ROE	ROE	ROE	ROE
BGD	0.000 (0.972)	0.000 (0.926)	0.000 (0.833)	0.000 (0.859)	0.001 (0.491)	0.001 (0.498)	0.000 (0.274)	0.001 (0.474)
ESGD	-0.001** (-1.328)				-0.001*** (-0.430)			
ACEXP	-0.054 (-1.578)	-0.051 (-1.485)	-0.051 (-1.473)	-0.048 (-1.404)	-0.060 (-0.558)	-0.056 (-0.525)	-0.060 (-0.567)	-0.052 (-0.490)
BEXP	0.057 (1.611)	0.054 (1.553)	0.051 (1.466)	0.050 (1.452)	0.072 (0.656)	0.071 (0.656)	0.053 (0.485)	0.066 (0.613)
SUSCScore	-0.000 (-0.317)	-0.000 (-0.375)	-0.000 (-0.525)	-0.000 (-0.359)	-0.000 (-0.226)	-0.000 (-0.222)	-0.000 (-0.423)	-0.000 (-0.204)
FSIZE	0.247*** (7.204)	0.245*** (7.209)	0.243*** (7.104)	0.244*** (7.155)	0.218** (2.047)	0.218** (2.060)	0.205* (1.932)	0.217** (2.041)
LEV	-0.341*** (-6.388)	-0.343*** (-6.439)	-0.338*** (-6.324)	-0.341*** (-6.386)	-0.244 (-1.473)	-0.249 (-1.497)	-0.247 (-1.488)	-0.245 (-1.477)
ENV		-0.001 (-1.611)				-0.001 (-0.694)		
GOV			-0.000 (-0.632)				0.001 (0.784)	
SOC				-0.000 (-1.225)				-0.001 (-0.533)
_cons	-2.186*** (-6.782)	-2.172*** (-6.774)	-2.154*** (-6.695)	-2.163*** (-6.729)	-1.887* (-1.882)	-1.885* (-1.888)	-1.785* (-1.787)	-1.872* (-1.872)
N	539.000	539.000	539.000	538.000	539.000	539.000	539.000	538.000
r <sup>2</sup>	0.210	0.212	0.208	0.210	0.021	0.022	0.022	0.021
r <sup>2</sup> <sub>a</sub>	-0.070	-0.068	-0.074	-0.072	-0.327	-0.326	-0.325	-0.327
F	15.108	15.257	14.862	15.021	1.209	1.252	1.271	1.221
p	0.000	0.000	0.000	0.000	0.080	0.048	0.037	0.069

Note: t-statistics in parentheses, \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

In a similar vein, ESGD and its individual pillars are environmental, social, and governance. Demonstrate a strong positive effect on both ROA and ROE, suggesting that greater transparency in ESGD disclosure can potentially improve these financial metrics. By focusing on ESGD disclosure, companies are more likely to adopt a long-term strategy that addresses environmental issues, promotes social well-being, and strengthens governance, all of which help sustain firm performance over time. On the other hand, larger firm sizes (FSIZE) hurt ROA and ROE across all models, indicating that bigger companies tend to experience lower profitability and returns. While the CSR sustainability committee score (SUSCScore) does show a positive relationship with ROA and ROE, this effect is not statistically significant, meaning that a higher score in corporate social responsibility may not necessarily translate into improved financial performance.

**Table 5:** Hierarchical Regression – Step 2 - Mediating Effect Model

Variable	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROE	(6) ROE	(7) ROE	(8) ROE
BGD	0.001*** -2.588	0.001*** -2.814	0.001*** -2.952	0.001*** -2.912	0.004*** -3.855	0.005*** -4.217	0.005*** -4.333	0.005*** -4.305
ESGD	0.001** -2.51				0.004*** -4.224			
ACEXP	-0.041 (-1.213)	-0.039 (-1.135)	-0.039 (-1.140)	-0.044 (-1.281)	-0.05 (-0.495)	-0.037 (-0.366)	-0.044 (-0.430)	-0.067 (-0.649)
BEXP	0.048 -1.419	0.048 -1.431	0.053 -1.551	0.053 -1.567	0.043 -0.426	0.045 -0.445	0.064 -0.623	0.067 -0.66
SUSCScore	0 -0.248	0 -0.358	0 -0.846	0 -0.633	0 -0.185	0 -0.356	0.001 -1.116	0 -0.734
FSIZE	-0.019** (-2.316)	-0.020** (-2.376)	-0.014* (-1.696)	-0.016** (-1.993)	-0.101*** (-4.082)	-0.107*** (-4.192)	-0.074*** (-3.083)	-0.087*** (-3.566)
LEV	-0.220*** (-7.760)	-0.226*** (-8.007)	-0.226*** (-7.948)	-0.222*** (-7.774)	-0.105 (-1.236)	-0.136 (-1.602)	-0.131 (-1.531)	-0.11 (-1.278)
ENV		0.001** -2.28				0.003*** -3.886		
GOV			0 -0.803				0.001* -1.904	
SOC				0.000* -1.747				0.002*** -3.175
_cons	0.240*** -3.405	0.262*** -3.539	0.200*** -2.905	0.217*** -3.127	0.849*** -4.025	0.968*** -4.351	0.653*** -3.147	0.742*** -3.553
N	539	539	539	538	539	539	539	538
r <sup>2</sup>	0.205	0.203	0.196	0.201	0.113	0.108	0.089	0.101
r <sup>2</sup> <sub>a</sub>	0.194	0.193	0.186	0.191	0.101	0.097	0.077	0.089
F	19.546	19.351	18.542	19.057	9.654	9.226	7.438	8.521

Notes: t-statistics in parentheses\* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

Table 6 presents the findings from the structural equation modelling (SEM) analysis, which was conducted to explore the mediating effect of board gender diversity (BGD) in the relationship between ESGD disclosure and firm performance. The results indicate that BGD has a positive and significant effect on firm performance in all models, demonstrating the reliability of the findings. Additionally, the analysis highlights how the independent variables influence return on assets (ROA) and return on equity (ROE) through the mediating role of BGD.

**Table 6:** Structural Equation Modelling (ROA)

Variable	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
BGD	0.259*** (4.807)	0.220*** (3.236)	0.309*** (4.210)	0.227*** (3.377)	0.259*** (4.807)	0.220*** (3.236)	0.309*** (4.210)	0.227*** (3.377)
ACEXP	6.003 (1.240)	3.503 (0.573)	13.255** (2.008)	16.900*** (2.806)	6.003 (1.240)	3.503 (0.573)	13.255** (2.008)	16.900*** (2.806)
BEXP	7.992* (1.665)	10.215* (1.685)	7.674 (1.173)	3.226 (0.540)	7.992* (1.665)	10.215* (1.685)	7.674 (1.173)	3.226 (0.540)
SUSCSCORE	0.172*** (6.347)	0.200*** (5.831)	0.093** (2.510)	0.157*** (4.643)	0.172*** (6.347)	0.200*** (5.831)	0.093** (2.510)	0.157*** (4.643)
FSIZE	8.369*** (7.438)	13.688*** (9.633)	3.866** (2.520)	7.473*** (5.337)	8.369*** (7.438)	13.688*** (9.633)	3.866** (2.520)	7.473*** (5.337)
LEV	-9.486** (-2.355)	-1.984 (-0.390)	-7.757 (-1.413)	-14.836*** (-2.957)	-9.486** (-2.355)	-1.984 (-0.390)	-7.757 (-1.413)	-14.836*** (-2.957)
_cons	-56.718*** (-5.821)	-120.495*** (-9.792)	-16.410 (-1.235)	-46.683*** (-3.851)	-56.718*** (-5.821)	-120.495*** (-9.792)	-16.410 (-1.235)	-46.683*** (-3.851)

Notes: t-statistics in parentheses\* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

Models 1 and 4 indicate that ESGD has a significant and positive effect ( $p<0.05$ ) on board gender diversity (BGD), with a value of 197.087. Similarly, models 2 through 4 and 6 through 8 show that environmental, social, and governance factors also have a positive and significant impact on BGD, with values of 314.311, 305.009, and 366.319, respectively. Additionally, return on assets (ROA) and return on equity (ROE) both have a positive and significant effect on BGD. However, audit committee expertise (ACEXP), board expertise (BEXP), and CSR sustainability committee scores (SUSCSCORE) did not show significant effects on BGD. Firm size (FSIZE) demonstrated a positive and significant influence on BGD across all models. Furthermore, BGD significantly impacts ROA and ROE, highlighting its role as a mediator in the relationship between ESGD disclosure and firm performance. More effective ESGD disclosure promotes the inclusion of women on boards, which, in turn, contributes to improved firm performance. Additionally, both ESGD disclosure and board gender diversity work together to enhance performance through the involvement of women in decision-making at the board level. Companies with strong ESGD disclosure practices can secure their long-term sustainability and success.

### 5.3. Sensitivity analysis

#### 5.3.1. Robustness analysis

The sensitivity analysis results, presented in Table 7, were conducted to assess the reliability of the findings. The analysis reveals that board gender diversity (BGD) has a positive and significant impact on firm performance in all models. Moreover, ESGD disclosure, along with its three pillars, positively and significantly influences BGD. This suggests that BGD effectively mediates the relationship between ESGD and firm performance. Overall, the sensitivity analysis results align with the findings from the structural equation modelling (SEM) analysis.

**Table 7:** Sensitivity Analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ROA	ROA	ROA	ROA	ROE	ROE	ROE	ROE
main								
BGD	0.598*** (9.155)	0.640*** (7.613)	0.653*** (8.148)	0.625*** (7.919)	0.598*** (9.155)	0.640*** (7.613)	0.653*** (8.148)	0.625*** (7.919)
_cons	30.347*** (18.882)	18.328*** (8.869)	28.824*** (14.615)	32.434*** (16.682)	30.347*** (18.882)	18.328*** (8.869)	28.824*** (14.615)	32.434*** (16.682)
ROA								
BGD	0.001*** (2.759)	0.001*** (2.759)	0.001*** (2.759)	0.001*** (2.747)				
_cons	0.043*** (4.515)	0.043*** (4.515)	0.043*** (4.515)	0.043*** (4.495)				
ESGD								
_cons	329.033*** (16.416)				329.033*** (16.416)			
ROA								
_cons	0.012*** (16.416)	0.012*** (16.416)	0.012*** (16.416)	0.012*** (16.401)				
ENV								
_cons		544.053*** (16.416)				544.053*** (16.416)		
GOV								
_cons			495.516*** (16.416)				495.516*** (16.416)	
SOC								
_cons				477.781*** (16.401)				477.781*** (16.401)
ROE								
BGD					0.005*** (4.763)	0.005*** (4.763)	0.005*** (4.763)	0.005*** (4.769)
_cons					0.012 (0.432)	0.012 (0.432)	0.012 (0.432)	0.011 (0.402)

ROE				
_cons	0.093***	0.093***	0.093***	0.093***
	(16.416)	(16.416)	(16.416)	(16.401)

Notes: t-statistics in parentheses\* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

## 5. Discussion

The study explores the relationship between Environmental, Social, and Governance Disclosure (ESGD) and Financial Performance (FP) in Saudi Arabian firms, with a specific focus on the mediating role of Board Gender Diversity (BGD). The findings reveal a complex interplay between ESGD and FP, particularly in the short term, while highlighting the significant positive role of BGD in enhancing financial outcomes.

### 6.1. ESGD and FP

The study found a negative association between increased ESGD and short-term financial performance indicators such as Return on Assets (ROA) and Return on Equity (ROE). This relationship suggests that while firms are investing in ESG strategies to improve sustainability, these efforts may involve substantial upfront costs, such as additional reporting and compliance requirements. Consequently, these costs may reduce immediate profitability, which is particularly relevant in Saudi Arabian firms that are still transitioning to fully integrate ESG practices into their operations.

The negative impact on FP can be attributed to the trade-off between short-term financial costs and the long-term benefits associated with ESGD. The study implies that ESGD, though essential for long-term sustainability and corporate reputation, can create a short-term financial burden as firms allocate resources to ESG initiatives.

### 6.2. The mediating role of board gender diversity (BGD)

A key finding is the significant role of Board Gender Diversity (BGD) as a mediator in the relationship between ESGD and financial performance. The presence of women on corporate boards positively impacts financial performance, particularly in terms of ROA and ROE. Women contribute actively to shaping and implementing ESG strategies, thus enhancing the financial outcomes of firms. The study emphasizes that diverse boards improve decision-making processes, with female directors playing a crucial role in integrating sustainability goals with corporate strategies. This mediation effect suggests that BGD is not merely a governance feature but an active driver of both ESG and financial performance.

In contrast, male board members seem to focus more on governance oversight, and the positive effects of BGD are largely attributed to the dynamic contributions of women directors. Therefore, gender diversity appears to enhance the effectiveness of ESGD practices, which in turn contributes to better financial performance.

### 6.3. Practical implications

Companies should prioritize increasing female representation on boards to improve both financial performance and the effectiveness of ESGD practices. Gender-diverse boards can better handle risks and ensure decisions are aligned with long-term sustainability goals. While ESG disclosure may result in short-term financial strain, companies should view this as an investment in long-term sustainability. Managers should take this transitional period as an opportunity to strengthen both their ESG practices and profitability over time.

### 6.4. Policy implications

Policymakers in Saudi Arabia should consider incentivizing or mandating gender diversity on corporate boards to foster more inclusive and sustainable business practices. This would align with broader governance reforms under Saudi Arabia's Vision 2030, aiming to improve corporate environments. Policymakers should focus on developing frameworks that encourage ESGD while accounting for financial constraints that firms may face during the implementation phase. Supporting firms with clear guidelines and incentives can ease the transition to sustainability practices.

### 6.5. Policy recommendations

Encourage policies that ensure gender-diverse boards, which could lead to improved financial performance and better ESGD practices. Develop incentives for firms to disclose ESG information and adopt sustainable practices, while considering their potential short-term financial challenges. Explore how ESGD can be integrated into Saudi Arabia's Vision 2030 goals, ensuring a long-term approach to corporate sustainability and profitability. Investors should consider the gender diversity of corporate boards and the extent of ESGD practices when evaluating a firm's long-term prospects. Companies with gender-diverse boards and robust ESG strategies may be better equipped to tackle sustainability challenges, leading to stronger financial outcomes in the future.

## 6. Conclusion

This study contributes significantly to understanding the complex dynamics between ESGD, financial performance, and Board Gender Diversity. The findings suggest that while ESGD may negatively affect short-term profitability, the presence of women on boards has a positive mediating effect, improving financial outcomes. This highlights the importance of gender diversity in corporate decision-making, particularly in the context of sustainability practices. Firms that manage this balance well may position themselves for greater long-term success.

## 7.1. Limitations and future research

Future studies should explore how industry-specific factors and regulatory environments in Saudi Arabia impact the relationship between ESGD and financial performance. Further research could investigate how broader macroeconomic trends and cultural elements influence ESGD practices and financial outcomes in Saudi Arabia. The initial costs of implementing ESG strategies should be further examined to understand the reasons behind the negative impact of ESGD on short-term financial performance. Overall, the study provides valuable insights for companies, policymakers, and investors, highlighting the importance of board diversity and ESG practices in achieving sustainable financial performance.

## References

- [1] Aanu, O., Odianonsen, I., & Foyeke, O. (2014). Effectiveness of Audit Committee and Firm Financial Performance in Nigeria: An Empirical Analysis. *Journal of Accounting and Auditing: Research & Practice*, 1–12. <https://doi.org/10.5171/2014.301176>
- [2] Abdelkader, M. G., Gao, Y., & Elamer, A. A. (2024). Board gender diversity and ESGD performance: The mediating role of temporal orientation in the South Africa context. *Journal of Cleaner Production*, 440, 140728. <https://doi.org/10.1016/j.jclepro.2024.140728>
- [3] Abdullah, S.N. (2014). The causes of gender diversity in Malaysian large firms. *Journal of Management & Governance*, 18(4), 1137–1159. <https://doi.org/10.1007/s10997-013-9279-0>
- [4] Aboud, A. and Diab, A. (2018). "The impact of social, environmental and corporate governance disclosures on firm value", *Journal of Accounting in Emerging Economies*, Vol. 8 No. 4, pp. 442–458. <https://doi.org/10.1108/JAEE-08-2017-0079>
- [5] Agliardi, E., Alexopoulos, T., & Karvelas, K. (2023). The environmental pillar of ESGD and financial performance: A portfolio analysis. *Energy Economics*, 120. <https://doi.org/10.1016/j.eneco.2023.106598>
- [6] Agyemang-Mintah, S., & Schadewitz, H. (2017). "Gender diversity and performance: Evidence from the UK financial industry." *Journal of Business Ethics*, 144(4), 673–686.
- [7] Al-Ghamdi, S., & Al-Juhani, A. (2022). The Role of Vision 2030 in Supporting Saudi Women to Participate in the Labor Market. *Migration Letters*, 19(2), 345–360.
- [8] Aladwey, L. M. A., & Alsudays, R. A. (2023). Does the Cultural Dimension Influence the Relationship between Firm Value and Board Gender Diversity in Saudi Arabia, Mediated by ESG Scoring? *Journal of Risk and Financial Management*, 16(12), 512. <https://doi.org/10.3390/jrfm16120512>
- [9] Aladwey, L. M. A., & Diab, H. A. (2023). Board Composition and ESG Disclosure in Saudi Arabia. *Sustainability*, 14(19), 12173. <https://doi.org/10.3390/su141912173>
- [10] Arayssi, M., Jizi, M., & Tabaja, H. H. (2020). The impact of board composition on the level of ESGD disclosures in GCC countries. *Sustainability Accounting, Management and Policy Journal*, 11(1), 137–161. <https://doi.org/10.1108/SAMPJ-05-2018-0136>
- [11] Bathala, C. T., & Rao, R. P. (1995). The determinants of board composition: An agency theory perspective. *Managerial and Decision Economics*, 16(1), 59–69. <https://doi.org/10.1002/mde.4090160108>
- [12] Bear, S., Rahman, N. and Post, C. (2010), "The impact of board diversity and gender composition on corporate social responsibility and firm reputation", *Journal of Business Ethics*, Vol. 97 No. 2, pp. 207–221. <https://doi.org/10.1007/s10551-010-0505-2>
- [13] Bernardi, C. and Stark, A. (2018), "Environmental, social and governance disclosure, integrated reporting, and the accuracy of analyst forecasts", *British Accounting Review*, Vol.50, No.1, pp. 16–31. <https://doi.org/10.1016/j.bar.2016.10.001>
- [14] Bin Khidmat, W., Ayub Khan, M., & Ullah, H. (2020). The effect of board diversity on firm performance: Evidence from Chinese listed companies. *Indian Journal of Corporate Governance*, 13(1), 25. <https://doi.org/10.1177/0974686220923793>
- [15] Branco, M.C. and Rodrigues, L.L. (2006), "Corporate social responsibility and resource-based perspectives", *Journal of Business Ethics*, Vol. 69 No. 2, 111–132. <https://doi.org/10.1007/s10551-006-9071-z>
- [16] Brooks, C. and Oikonomou, I. (2017), "The effects of environmental, social and governance disclosures and performance on firm value: A review of the literature in accounting and finance", *The British Accounting Review*, Vol. 50, No. 1, pp. 1–15. <https://doi.org/10.1016/j.bar.2017.11.005>
- [17] Buallay, A. (2019). Is sustainability reporting (ESGD) associated with performance? Evidence from the European banking sector. *Management of Environmental Quality: An International Journal*, 30(1), 98–115. <https://doi.org/10.1108/MEQ-12-2017-0149>
- [18] Burke & M. C. Mattis (Eds.), *Women on corporate boards of directors: International challenges and opportunities* (pp. 25–40). Kluwer Academic Publishers
- [19] Byron, K. and Post, C. (2016), "Women on boards of directors and corporate social performance: a Meta- analysis", *Corporate Governance: An International Review*, Vol. 24 No. 4, pp. 428–442. <https://doi.org/10.1111/corg.12165>
- [20] Calabrese, G. G., & Manello, A. (2021). Board diversity and performance in a masculine, aged and glocal supply chain: New empirical evidence. *Corporate Governance: The International Journal of Business in Society*, 21(7), 1440–1459. <https://doi.org/10.1108/CG-09-2020-0417>
- [21] Campbell, J.L. (2007), "Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility", *Academy of Management Review*, Vol. 32 No. 3, pp. 946–967. <https://doi.org/10.5465/amr.2007.25275684>
- [22] Campbell, K. and Mínguez-Vera, A. (2008), "Gender diversity in the boardroom and firm financial performance", *Journal of Business Ethics*, Vol. 83 No. 3, pp. 435–451. <https://doi.org/10.1007/s10551-007-9630-y>
- [23] Cao, M., Li, J., & Zhang, Z. (2023). *The role of ESG disclosure in firm performance*. *Journal of Business Ethics*, 175(2), 465–487.
- [24] Carnini Pulino, S., Ciaburri, M., Magnanelli, B. S., & Nasta, L. (2022). Does ESGD disclosure influence firm performance?. *Sustainability*, 14(13), 7595. <https://doi.org/10.3390/su14137595>
- [25] Chambers and Partners. (2024). *Corporate Governance 2024 - Saudi Arabia | Global Practice Guides*. <https://practiceguides.chambers.com/practice-guides/corporate-governance-2024/saudi-arabia/trends-and-developments>
- [26] Chaudhry, N. I., Roomi, M. A., & Aftab, I. (2020). Impact of expertise of audit committee chair and nomination committee chair on financial performance of firm. *Corporate Governance (Bingley)*, 20(4), 621–638. <https://doi.org/10.1108/CG-01-2020-0017>
- [27] Chen, S., Mukherjee, S., Hermes, N. and Hooghiemstra, R. (2018), "The impact of board gender diversity policy on women on boards: an institution-based view", paper presented at the 2018 Academy of Management Conference, Chicago, available at: <https://journals.aom.org/doi/abs/10.5465/AMBPP.2018.13303abstract> (accessed 28 March 2020). <https://doi.org/10.5465/AMBPP.2018.13303abstract>
- [28] Chijoke-Mgbame, A. M., Boateng, A., & Mgbame, C. O. (2020). Board gender diversity, audit committee and financial performance: evidence from Nigeria. *Accounting Forum*, 44(3), 262–286. <https://doi.org/10.1080/01559982.2020.1766280>
- [29] Cho, S. J., Chung, C. Y., & Young, J. (2019). Study on the relationship between CSR and financial performance. *Sustainability (Switzerland)*, 11(2). <https://doi.org/10.3390/su11020343>
- [30] Cho, Y., Kim, S., You, J., Moon, H., & Sung, H. (2021). Application of ESGD measures for gender diversity and equality at the organizational level in a Korean context. *European Journal of Training and Development*, 45(4/5), 346–365. <https://doi.org/10.1108/EJTD-05-2020-0090>
- [31] Cumba, L.T., Huang, X., Zhang, Z. and Muhammad, S. (2024). The mediating effect of entrepreneurship on financial support and economic growth in African emerging economies, *International Journal of Emerging Markets*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/IJOEM-03-2022-0453>
- [32] Does corporate social responsibility mediate the relation between boardroom gender diversity and firm performance of Chinese listed companies? 18. <https://doi.org/10.3390/su10103591>

- [33] Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, 20(1), 65-91. <https://doi.org/10.2307/258887>
- [34] Dong, Y., Liang, C., & Wanyin, Z. (2023). Board diversity and firm performance: Impact of ESGD activities in China. *Economic research-Ekonomiska istra' zivanja*, 36(1), 1592-1609. <https://doi.org/10.1080/1331677X.2022.2090406>
- [35] Drahos, P. (2017). *Regulatory theory: Foundations and applications*. ANU Press. <http://www.jstor.org/stable/j.ctt1q1crtm>
- [36] Duppati, G., Rao, N. V., Matlani, N., Scrimgeour, F., & Patnaik, D. (2020). Gender diversity and firm performance: Evidence from India and Singapore. *Applied Economics*, 52(1466-4283), 14. <https://doi.org/10.1080/00036846.2019.1676872>.
- [37] Essers, C., & Benschop, Y. (2009). Muslim businesswomen doing boundary work: The negotiation of Islam, gender and ethnicity within entrepreneurial contexts. *Human Relations*, 62(3), 403-423. <https://doi.org/10.1177/0018726708101042>.
- [38] Fakile, O., Osemene, O., Florence, O., & Grace, O. (2019). Effectiveness of Audit Committee and Financial Performance of Deposit Money Banks in Nigeria. 2018(3), 23-34. [www.osogbojournalofmanagement.com](http://www.osogbojournalofmanagement.com).
- [39] Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law and Economics*, 26(2), 301-325. <https://doi.org/10.1086/467037>
- [40] Fidanoski, F., Simeonovski, K., & Mateska, V. (2014). The impact of board diversity on corporate performance: New evidence from Southeast Europe. *The Electronic Library*, 34(1), 1-5. <https://doi.org/10.1108/S1569-373220140000017003>.
- [41] Freeman, B. G., Lee-Yaw, J. A., Sunday, J. M., & Hargreaves, A. L. (2018). Expanding, shifting and shrinking: The impact of global warming on species' elevational distributions. *Global Ecology and Biogeography*, 27(11), 1268-1276. <https://doi.org/10.1111/geb.12774>
- [42] Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston: Pitman Press.
- [43] Freeman, R. E., Harrison, J. S., & Zyglidopoulos, S. (2018). *Stakeholder theory: Concepts and strategies*. Cambridge University Press. <https://doi.org/10.1017/9781108539500>.
- [44] Freudenreich, B., Lüdeke-Freund, F., & Schaltegger, S. (2020). A stakeholder theory perspective on business models: Value creation for sustainability. *Journal of Business Ethics*, 166, 3-18. <https://doi.org/10.1007/s10551-019-04112-z>.
- [45] Fuadah, L. L., Mukhtaruddin, M., Andriana, I., & Arisman, A. (2022). The ownership structure, and the environmental, social, and governance (ESGD) disclosure, firm value and firm performance: The audit committee as moderating variable. *Economics*, 10(12), 314. <https://doi.org/10.3390/economics10120314>.
- [46] Gambo, J. S., Terzungwe, N., Joshua, O., Agbi, S. E., & Hd, P. (n.d.). BOARD MEETINGS, BOARD EXPERTISE AND FINANCIAL PERFORMANCE OF LISTED INSURANCE FIRMS IN NIGERIA.
- [47] Garavan, T.N. and McGuire, D. (2010), "Human resource development and society: human resource development's role in embedding corporate social responsibility, sustainability, and ethics in organizations", *Advances in Developing Human Resources*, Vol. 12 No. 5, pp. 487-507. <https://doi.org/10.1177/1523422310394757>.
- [48] Glass, C. and Cook, A. (2018), "Do women leaders promote positive change? Analyzing the effect of gender on business practices and diversity initiatives", *Human Resource Management*, Vol. 57 No. 4, pp. 823-837. <https://doi.org/10.1002/hrm.21838>.
- [49] Gonçalves, T. C., Barros, V., & Avelar, J. V. (2023). Environmental, social and governance scores in Europe: What drives financial performance for larger firms? *Economics and Business Letters*, 12(2), 121-131. <https://doi.org/10.17811/eb.12.2.2023.121-131>.
- [50] Green, CP., & Homroy, S. (2018). Female directors, board committees and firm performance. *European Economic Review*, 102(2018), 19-38. <https://doi.org/10.1016/j.euroecorev.2017.12.003>.
- [51] Gupta, R., & Arora, A. (2023). Corporate governance and sustainability in emerging economies. *Journal of Global Business*, 22(1), 47-63.
- [52] Hall, D. L., & Ames, R. T. (2000). Sexism, with Chinese characteristics. *The sage and the second sex: Confucianism, ethics, and gender*. Open Court.
- [53] Hamman, J. R., Loewenstein, G. and Weber, R. A. (2010), "Self-interest through delegation: An additional rationale for the principal-agent relationship", *American Economic Review*, Vol. 100 No. 4, pp.1826-46. <https://doi.org/10.1257/aer.100.4.1826>.
- [54] Haniffa, R. & Hudaib, M. (2006). Corporate governance structure and performance of Malaysian listed companies. *Journal of Business Finance & Accounting*, 33(7-8), 1034-1062. <https://doi.org/10.1111/j.1468-5957.2006.00594.x>
- [55] Hassan, M. K., et al. (2022). Corporate governance practices in Saudi Arabia: Analyzing gender diversity and CSR. *Middle Eastern Journal of Business Studies*, 15(4), 278-301.
- [56] Hill, C. W., & Jones, T. M. (1992). Stakeholder-agency theory. *Journal of Management Studies*, 29(2), 131-154. <https://doi.org/10.1111/j.1467-6486.1992.tb00657.x>.
- [57] Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management Review*, 28(3), 383-396. <https://doi.org/10.5465/amr.2003.10196729>
- [58] 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. <https://doi.org/10.1002/csr.2259>
- [59] Jehn, K.A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly*, 40(2), 256-282. <https://doi.org/10.2307/2393638>
- [60] Katmon, N., Mohamad, Z. Z., Norwani, N. M., & Farooque, O. A. (2019). Comprehensive board diversity and quality of corporate social responsibility disclosure: Evidence from an emerging market. *Journal of Business Ethics*, 157, 447-481. <https://doi.org/10.1007/s10551-017-3672-6>
- [61] Khan, Z., Tariq, M. I., & Rehman, Z. (2021). ESG reporting and firm performance in emerging markets: Evidence from Saudi Arabia. *Journal of International Business Studies*, 53(6), 1432-1445.
- [62] Kotsantonis, S., Pinney, C. and Serafeim, G. (2016), "ESGD integration in investment management: Myths and realities", *Journal of Applied Corporate Finance*, Vol. 28 No. 2, pp. 10-16. <https://doi.org/10.1111/jacf.12169>
- [63] Lagarde, C. (2010). What if it had been Lehman Sisters? *The International Herald Tribune*. May 11. <http://dealbook.nytimes.com/2010/05/11/lagarde-wh>.
- [64] Lee, S. P., & Isa, M. (2023). Environmental, social and governance (ESGD) practices and financial performance of Shariah-compliant companies in Malaysia. *Journal of Islamic Accounting and Business Research*, 14(2), 295-314. <https://doi.org/10.1108/JIABR-06-2020-0183>.
- [65] Li, Y., Gong, M., Zhang, X.-Y., & Koh, L. (2018). The impact of environmental, social, and governance disclosure on firm value: The role of CEO power. *The British Accounting Review*, 50(1), 60-75. <https://doi.org/10.1016/j.bar.2017.09.007>
- [66] M.K., J., & Sori, Z. M. (2012). Gender diversity in the boardroom and firm performance of Malaysian public listed companies. *Procedia - Social and Behavioral Sciences*, 65(ICIBSoS), 9. <https://doi.org/10.1016/j.sbspro.2012.11.374>.
- [67] Malaysian Corporate Code on Governance. (2012). Retrieved October 23, 2016, from <https://www.sc.com.my/wp-content/uploads/eng/html/cg/cg2012.pdf>.
- [68] Manita, R., Bruna, M. G., Dang, R., & Houanti, L. H. (2018). Board gender diversity and ESGD disclosure: Evidence from the USA. *Journal of Applied Accounting Research*, 19(2), 206-224. <https://doi.org/10.1108/JAAR-01-2017-0024>.
- [69] Matar, S., & Saeed, S. (2022). Impact of board gender diversity on ESG disclosure: Evidence from Saudi Arabia. *Sustainability*, 14(9), 5283.
- [70] Mensi-Klarbach, H., Leixnering, S., & Schiffinger, M. (2021). The carrot or the stick: Self-regulation for gender-diverse boards via codes of good governance. *Journal of Business Ethics*, 170(3), 577-593. <https://doi.org/10.1007/s10551-019-04336-z>
- [71] Miles, K. (2011), "Embedding gender in sustainability reports", *Sustainability Accounting, Management and Policy Journal*, Vol. 2 No. 1, pp. 139-146. <https://doi.org/10.1108/20408021111162164>
- [72] Moreno-Gómez, J., Lafuente, E., & Vaillant, Y. (2018). Gender diversity in the board, women's leadership and business performance. *Gender in Management: An International Journal*, 33(2), 104-122. <https://doi.org/10.1108/GM-05-2017-0058>.
- [73] Morenogómez, M., et al. (2018). "Gender diversity on boards: Impact on firm performance." *Journal of Management and Governance*, 22(4), 933-948.

- [74] Mun, E. and Jung, J. (2018), "Change above the glass ceiling: corporate social responsibility and gender diversity in Japanese firms", *Administrative Science Quarterly*, Vol. 63 No. 2, pp. 409-440. <https://doi.org/10.1177/0001839217712920>.
- [75] Nareswari, N., Tarczyńska-Luniewska, M., & Hashfi, R. U. Al. (2023). Analysis of Environmental, Social, and Governance Performance in Indonesia: Role of ESGD on Corporate Performance. *Procedia Computer Science*, 225, 1748–1756. <https://doi.org/10.1016/j.procs.2023.10.164>
- [76] Orazalin, N., Kuzey, C., Uyar, A., & Karaman, A. S. (2023). Does CSR contribute to the financial sector's financial stability? The moderating role of a sustainability committee. *Journal of Applied Accounting Research*. <https://doi.org/10.1108/JAAR-12-2022-0329>
- [77] Ouni, Z., Mansour, J. Ben, & Arfaoui, S. (2020). Board/executive gender diversity and firm financial performance in Canada: The mediating role of environmental, social, and governance (ESGD) orientation. *Sustainability (Switzerland)*, 12(20), 1–17. <https://doi.org/10.3390/su12208386>.
- [78] Perez, J., et al. (2021). Gender diversity and ESG disclosure: A critical review of the literature. *Corporate Governance Review*, 29(3), 67-89.
- [79] Pfeffer, J., & Salancik, G. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper & Row.
- [80] Popov, K., & Makeeva, E. (2022). Relationship between Board Characteristics, ESGD and Corporate Performance: A Systematic Review. In *Journal of Corporate Finance Research* (Vol. 16, Issue 4, pp. 119–134). National Research University, Higher School of Economics. <https://doi.org/10.17323/j.cjfr.2073-0438.16.4.2022.119-134>.
- [81] Post, C. and Byron, K. (2015), "Women on boards and firm financial performance: a meta-analysis", *Academy of Management Journal*, Vol. 58 No. 5, pp. 1546-1571. <https://doi.org/10.5465/amj.2013.0319>
- [82] Post, C., Rahman, N., & Rubow, E. (2011). Green governance: Boards of directors' composition and environmental corporate social responsibility. *Business & Society*, 50(1), 189–223. <https://doi.org/10.1177/0007650310394642>.
- [83] Qiu, Y., Shaikat, A. and Tharyan, R. (2016), "Environmental and social disclosures: Link with the corporate financial performance", *British Accounting Review*, Vol. 48, pp. 102–116. <https://doi.org/10.1016/j.bar.2014.10.007>.
- [84] Rahman, H. U., Zahid, M., & Al-Faryan, M. A. S. (2023). ESGD and firm performance: The rarely explored moderation of sustainability strategy and top management commitment. *Journal of Cleaner Production*, 404, 136859. <https://doi.org/10.1016/j.jclepro.2023.136859>.
- [85] Rahman, H. U., Zahid, M., & Jehangir, M. (2020). Different is better: Does difference in age and ethnicity of the directors matter for corporate performance in Malaysia? *Journal of Applied Economics and Business Studies*, 4(2), 205–220. <https://doi.org/10.34260/jaeb.4210>
- [86] Rahman, H.U., Zahid, M., & Khan, M. (2021a). Corporate sustainability practices: A new perspective of linking board with firm performance. *Total Quality Management & Business Excellence*, 1–18. <https://doi.org/10.1080/14783363.2021.1908826>.
- [87] Rahman, H.U., Zahid, M., & Muhammad, A. (2021b). Connecting integrated management system with corporate sustainability and firm performance: From the Malaysian real estate and construction industry perspective. *Environment, Development and Sustainability*. <https://doi.org/10.1007/s10668-021-01538-2>
- [88] Ramcharran, D., et al. (2022). Gender diversity on boards and corporate transparency: Evidence from the emerging markets. *Corporate Governance Journal*, 18(2), 34-51.
- [89] Rossi, M., Chouaibi, J., Chouaibi, S., Jilani, W., & Chouaibi, Y. (2021). Does a Board Characteristic Moderate the Relationship between CSR Practices and Financial Performance? Evidence from European ESGD Firms. *Journal of Risk and Financial Management*, 14(8). <https://doi.org/10.3390/jrfm14080354>.
- [90] Saudi Exchange. (2023). Embedding ESG. Creating sustainable value. [https://www.saudiexchange.sa/Resources/fsPdf/343\\_0\\_2023-06-20\\_14-42-12\\_En.pdf](https://www.saudiexchange.sa/Resources/fsPdf/343_0_2023-06-20_14-42-12_En.pdf).
- [91] Seierstad, C., & Opsahl, T. (2011). For the few not the many? The effects of affirmative action on presence, prominence, and social capital of women directors in Norway. *Scandinavian Journal of Management*, 27(1), 44–54. <https://doi.org/10.1016/j.scaman.2010.10.002>
- [92] Sghaier, A., & Hamza, T. (2018). Does boardroom gender diversity affect the risk profile of acquiring banks? *Managerial Finance*, 44(10), 1174–1199. <https://doi.org/10.1108/MF-09-2017-0373>
- [93] Shakil, M. H., Tania, M., & Mostafiz, M. I. (2020). Board gender diversity and environmental, social and governance performance of US banks: moderating role of environmental, social and corporate governance controversies. *International Journal of Bank Marketing*, 39(4), 661–677. <https://doi.org/10.1108/IJBM-04-2020-0210>
- [94] Sial, M. S., Zheng, C., Cherian, J., Gulzar, M. A., Thu, P. A., Khan, T., & Khuong, N. V. (2018).
- [95] Siew, R. Y. J., et al. (2021). Impact of gender diversity on ESG disclosure in the Asia-Pacific region. *Asian Journal of Business Ethics*, 12(3), 89-103.
- [96] Song, H. J., Yoon, Y. N., & Kang, K. H. (2020). The relationship between board diversity and firm performance in the lodging industry: The moderating role of internationalization. *International Journal of Hospitality Management*, 86(January), 102461. <https://doi.org/10.1016/j.ijhm.2020.102461>.
- [97] Sori, Z. M. (2012). "The role of gender diversity in enhancing ROI and financial performance." *Journal of Financial Economics*, 106(1), 1-12.
- [98] Strydom, M., Yong, H.H.A. and Rankin, M. (2017), "A few good (wo)men? Gender diversity on Australian boards", *Australian Journal of Management*, Vol. 42 No. 3, pp. 404-427. <https://doi.org/10.1177/0312896216657579>.
- [99] Tantalo, C. and Priem, R. L. (2016), "Value creation through stakeholder synergy", *Strategic Management Journal*, Vol. 37 No. 2, pp. 314-329. <https://doi.org/10.1002/smj.2337>.
- [100] Tayeb, A., et al. (2021). Gender diversity and corporate social responsibility in emerging markets: Evidence from Saudi Arabia. *Business & Society Review*, 33(7), 101-119.
- [101] Terjesen, S., Aguilera, R.V. and Lorenz, R. (2015), "Legislating a woman's seat on the board: institutional factors driving gender quotas for boards of directors", *Journal of Business Ethics*, Vol. 128 No. 2, pp. 233-251. <https://doi.org/10.1007/s10551-014-2083-1>.
- [102] Terjesen, S. and Sealy, R. (2016), "Board gender quotas: exploring ethical tensions from a multi Velte, P. (2016), "Women on management board and ESGD performance", *Journal of Global Responsibility*, Vol. 7 No. 1, pp. 98-109. <https://doi.org/10.1108/JGR-01-2016-0001>.
- [103] Tleubayev, A., Bobojonov, I., Gagalyuk, T., & Glauen, T. (2019). Board gender diversity and firm performance: Evidence from the Russian agri-food industry. *International Food and Agribusiness Management Review*, 23(1), 35–53. <https://doi.org/10.22434/IFAMR2019.0011>.
- [104] Tleubayev, A., et al. (2019). "The impact of female directors on firm performance: Evidence from global data." *Journal of Business Research*, 100, 287-295.
- [105] Ujunwa, A. (2012). Board characteristics and the financial performance of Nigerian quoted firms. *Corporate Governance (Bingley)*, 12(5), 656–674. <https://doi.org/10.1108/14720701211275587>
- [106] Ullah, A., et al. (2019). "Gender diversity and corporate governance: Evidence from Pakistan." *Corporate Governance: An International Review*, 27(3), 224-240.
- [107] Ullah, I., Fang, H., & Jebran, K. (2019). Do gender diversity and ceo gender enhance firm's value? Evidence from an emerging economy. 20(1), 44–66. <https://doi.org/10.1108/CG-03-2019-0085>
- [108] Victor, P. (2017). Malaysia increases efforts to add women on boards in time for 2018. *The ASEAN Post*. <https://theseanpost.com/article/malaysia-increases-efforts-add-women-boards-time-2018>
- [109] Wang, X., Zhang, S., & Zhao, H. (2022). ESG disclosure and financial performance in emerging markets: The case of Saudi Arabia. *Journal of International Finance and Economics*, 22(1), 89-104.
- [110] Wasiuzzaman, S., & Wan Mohammad, W. M. (2020). Board gender diversity and transparency of environmental, social and governance disclosure: Evidence from Malaysia. *Managerial and Decision Economics*, 41(1), 145–156. <https://doi.org/10.1002/mde.3099>
- [111] Yasser, Q. R., & Iqbal, M. A. (2021). The relationship between board diversity and corporate governance in Saudi firms. *Asian Business & Management*, 20(4), 302-324.
- [112] Yoon, B., Lee, J.H. and Byun, R. (2018), "Does ESGD Performance Enhance Firm Value? Evidence from Korea", *Sustainability*, Vol. 10, No.10, PP 3635. <https://doi.org/10.3390/su10103635>

- [113] Yousaf, U.B., Jebran, K. and Wang, M. (2021), "Can board diversity predict the risk of financial distress?", *Corporate Governance: The International Journal of Business in Society*, Vol. 21 No. 4, pp. 663-684. <https://doi.org/10.1108/CG-06-2020-0252>
- [114] Zahid, M., Rehman, H. U., Ali, W., Khan, M., Alharthi, M., Imran Qureshi, M., & Jan, A. (2020). Boardroom gender diversity: Implications for corporate sustainability disclosures in Malaysia. *Journal of Cleaner Production*, 244, 118683. <https://doi.org/10.1016/j.jclepro.2019.118683>
- [115] Zhao, C., Guo, Y., Yuan, J., Wu, M., Li, D., Zhou, Y., & Kang, J. (2018). ESGD and corporate financial performance: Empirical evidence from China's listed power generation companies. *Sustainability*, 10(8), 2607. <https://doi.org/10.3390/su10082607>.