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BOARD GENDER DIVERSITY AND FIRM VALUE: DO WOMEN ON BOARDS MAKE A DIFFERENCE?

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Board Gender Diversity and Firm Value: Do Women on Boards Make a Difference?

Abstract

Gender diversity at the board level plays a vital role in shaping strategic decisions and governance outcomes in global corporations. As one of the most visible and measurable dimensions of diversity, gender representation has attracted increasing academic and institutional interest in recent years. This study investigates the relationship between board-level gender diversity and financial performance among global firms, focusing specifically on the financial sector. The analysis draws on cross-sectional data from 326 international financial institutions included in the 2022 Forbes Global 2000 list. Employing both correlation and multiple regression analyses, the study explores how female board representation correlates with key financial indicators, such as Return on Equity (ROE), Return on Assets (ROA), and market value. The results suggest that greater female participation on boards is positively associated with higher ROE, while the effects on ROA and market value appear to be weaker. These findings offer empirical support for enhancing gender diversity in corporate governance frameworks.

Keywords: Gender diversity, Women on boards, Corporate governance, Firm performance, Upper Echelon Theory

Yönetim Kurulu Cinsiyet Çeşitliliği ve Firma Değeri: Yönetim Kurulundaki Kadınlar Fark Yaratır mı?

Öz

Yönetim kurulu düzeyinde cinsiyet çeşitliliği, küresel şirketlerin stratejik kararlarını ve yönetişim sonuçlarını şekillendirmede hayati bir rol oynamaktadır. Çeşitliliğin en görünür ve ölçülebilir boyutlarından biri olan cinsiyet temsili, son yıllarda akademik ve kurumsal düzeyde artan bir ilgi görmektedir. Bu çalışma, küresel firmalar arasında yönetim kurulundaki cinsiyet çeşitliliği ile finansal performans arasındaki ilişkiyi incelemektedir ve özellikle finans sektörüne odaklanmaktadır. Analiz, 2022 Forbes Global 2000 listesinde yer alan 326 uluslararası finans kuruluşundan elde edilen kesitsel verilere dayanmaktadır. Korelasyon ve çoklu regresyon analizleri kullanılarak, kadın yönetim kurulu üyeliği ile özkaynak kârlılığı (ROE), varlık karlılığı (ROA) ve piyasa değeri gibi temel finansal göstergeler arasındaki ilişki incelenmiştir. Bulgular, yönetim kurullarında kadın temsilinin ROE üzerinde olumlu bir etkisi olduğunu, ancak ROA ve piyasa değeri üzerindeki etkilerin daha zayıf olduğunu göstermektedir. Bu sonuçlar, kurumsal yönetişim yapılarında cinsiyet çeşitliliğinin artırılmasına yönelik ampirik kanıtlar sunmaktadır.

Anahtar Kelimeler: Cinsiyet çeşitliliği, Yönetim kurulunda kadınlar, Kurumsal yönetim, Firma performansı, Üst Kademeler Teorisi

1. Introduction

There is a growing body of literature stating the importance of diverse teams, especially in the context of upper management. Team diversity enhances the decision-making process by bringing in varied perspectives. This, in turn, helps minimise groupthink. This assumption raises the question of whether gender diversity impacts corporate performance in various aspects of corporate governance.

In corporate organisations, the 'management board' (board of directors) is an important and critical decision-making authority that operates as the top-tier organ of an organisation. The management board assumes responsibilities that shape the strategic directions of the organisation. Given its relevance, board composition plays an important role in company performance. Accordingly, numerous research studies have examined this topic in context, especially board gender diversity.

Gender diversity is one of the important pillars in the environmental, social, and governance (ESG) framework. ESG has gained growing attention in academic research to explore its impact on corporate performance. Nguten & Rahman (2023) and Al-Shaeer & Zaman (2022) have found that corporate boards with gender-diverse compositions demonstrate better financial performance and ESG outcomes.

Corporate boards bring together top-ranking executives with various cognitive skills that shape the corporate decision-making process. Demographic characteristics determine cognitive skills. Pfeffer (1985) has found that individual board members influence the decision-making processes and corporate outcomes, and that eventually organisational demographics shape corporate governance. Therefore, each board member influences corporate strategy and outcomes.

Hambrick and Mason (1984) have contributed to the academic literature with their *Upper Echelon Theory*. This theory underlines top managers' demographic and cognitive

characteristics, forming corporate strategies and performance. Gender diversity is a key demographic factor that is researched extensively and is becoming significantly relevant in corporate governance. Garcia-Sanchez et al. (2022) have explored that board diversity increases governance quality and enhances board independence. In line with the *Upper Echelons Theory*, this study investigates gender as a key demographic factor.

The diversity of group members is best measured using homogeneity or heterogeneity indices (Pfeffer, 1985). These measures enable analysis of the impact of individual members on organisational dimensions (Wiersema & Bantel, 1992). Homogeneous teams share similar characteristics, whereas heterogeneous teams exhibit diverse attributes. In the context of gender diversity, the term refers to *management boards* composed of both female and male members. Until the 1980s, all-male boards were the predominant structure in corporate governance. However, factors such as globalisation, the evolution of ESG principles, shifting social norms, feminist movements, and regulatory reforms have contributed to a gradual shift toward more gender-diverse boards. This shift is reinforcing a diverse board structure, especially in global companies.

This study aims to analyse whether female board representation affects company performance. This research intends to prove whether board diversity plays a role in a company's performance concerning profitability, efficient use of its assets, and market value. Global companies usually have stringent corporate governance practices and demonstrate transparent reporting of board structure in terms of gender. Hence, one of the main questions that this research will answer is whether board diversity enhances company performance in global financial companies. As proposed by Hambrick and Mason (1984) in their *Upper Echelon Theory*, demographic and cognitive traits shape organisational outcomes. Thus, this research aims to find evidence that women board members increase corporate performance.

Our research focuses on companies listed in the 2022 Forbes Global 2000 within the financial sector. The dataset includes extensive board composition and financial information from these companies for the year 2022. Gender heterogeneity and female board representation serve as the primary variables of interest in this analysis.

Even though the impact of board gender diversity is extensively researched, empirical evidence on its specific financial implications, particularly on the global financial sector, remains inconclusive. This study aims to address this by focusing on gender diversity among board members and its impact on firm performance.

Tajfel & Turner's (1979) *Social Identity Theory* says that the presence of diverse group identities, such as gender, enhances group dynamics by facilitating a broader exchange of perspectives, mitigating groupthink, and enabling more balanced decision-making. In line with this theoretical framework, this study aims to offer empirical evidence supporting the hypothesis that gender-diverse boards have a positive impact on firm performance.

A recent study by Zhang & Li (2024) also explores possible effects of board gender diversity and various dimensions of firm performance, including innovation outcomes. Their findings indicate that gender-diverse boards may stimulate innovation by encouraging more balanced and deliberate approaches to risk-taking.

This study differs from previous research as it has a global perspective on the corporate performance of the world's largest financial companies that are scattered around the globe. It does not focus on one country or region. This research aims to add value to the literature by providing evidence on the relationship between the board gender diversity of the world's largest companies and company performance.

In the subsequent sections, first, we present a summary of the literature review and our hypotheses. Further on, we explain concepts of the management board and the gender gap,

followed by our model and methodology. In section 4, results are presented. In the final sections, we provide points for discussion and our conclusions.

2. Literature Review and Hypotheses

This literature review synthesises ESG-related research to validate the assumptions supporting this study, particularly regarding gender-diversity, decision-making processes, and key performance indicators for gender-diversity in ESG. It further examines the global gender gap and its key dimensions, along with core characteristics of management boards and evolving corporate governance practices.

2.1. Environmental, Social and Governance Framework

In terms of ethical business conduct and sustainability, ESG is becoming significantly important. Sustainable resource use, carbon emissions, and policies governing climate change are among the environmental components. Human rights, diversity, labour rights, and corporate social responsibility form the factors in the social pillar in ESG. Lastly, board diversity, ethical practices, transparency, and anti-corruption efforts define the governance pillar of ESG.

We can derive that former organisational theories have paved the way for ESG formulation. Freeman's *Stakeholder Theory* (1984) asserts that corporations should look out for the interests of other stakeholders (employees, customers, suppliers, society, and the environment) as well as shareholders. According to this theory, long-term corporate success is possible not only by financial performance but also by balancing the expectations of stakeholders.

The *Legitimacy Theory* underlines the expectation that companies are not only profit-seeking but also comply with both societal and legal rules. Legitimacy is critical for a company to be accepted by society and to conduct its activities accordingly. The theory is based on the principle that organisations will select the most suitable managers for their upper echelon.

Researchers have noted that companies that do not conform to the concept of legitimacy may experience financial risk (Dowling & Pfeffer, 1975).

The main idea expressed by Jensen and Meckling in the *Agency Theory* is the idea of a conflict of interest between the managers (agency) and the shareholders. Accordingly, mechanisms are required to ensure that the interests of both sides coincide (Jensen & Meckling, 1976). The ESG connection of the theory is the necessity of independent boards and transparent reporting within the framework of ESG.

As a core corporate governance perspective, there is evidence that women on boards strengthen decision-making processes. Women exhibit behaviour that is congruent with ethical leadership. This, in turn, increases shareholder trust. Those firms that have gender-diverse boards are likely to have more sustainable strategies and improve financial outcomes (Burke & Collins, 2001; Terjesen et al., 2009).

In a study done by Deloitte in 2020, it was found that more than 90% of companies listed on the Standard & Poor's 500 Index (S&P 500) have ESG reporting of gender diversity, which results in increased transparency and better financial results. There is also a positive relationship between ESG disclosures and financial performance (Pulino et al., 2022). Adams & Funk, in a recent study in 2024, found out that companies that have two or more women on the board experience higher market value after employing ESG requirements, especially when women hold top or strategically important roles.

Corporate governance structures are evolving to integrate gender diversity and ethical decision-making. Shareholder confidence is reinforced by governance reforms that promote inclusive leadership and board independence (United Nations, 2015). They are also manifested in the United Nations Sustainable Development Goals.

2.2. Gender Gap and Gender Diversity

From a general perspective, a gender gap refers to inequalities in opportunities, status, and access to resources between men and women. The World Economic Forum (WEF) has disclosed that the gender gap is apparent in economic participation, pay disparities, leadership opportunities, and career advancement. Even though females represent 50% of the world population, women are still underrepresented in the workforce, especially in executive leadership roles.

The International Labour Organisation (2023) has revealed that women earn, on average, 15–20% less than men for equivalent roles. This wage gap is a result of many factors, like unconscious biases, barriers to leadership positions, and caregiving responsibilities. Furthermore, women are explicitly underrepresented in STEM fields and executive leadership (OECD, 2022).

The WEF Global Gender Gap Report provides an annual assessment of gender disparities across 146 countries, focusing on four key areas. Gender gap scores in 2022 in these four key areas are presented below.

1. Economic participation and opportunity: 60,3%
2. Educational attainment: 94,4%
3. Health and survival: 95,8%
4. Political empowerment: 22%

As a forward-looking prognostication, achieving full gender equality in economic participation and political empowerment would take approximately 150 years. These findings emphasise the urgent need for stronger regulations, policy interventions, and diversity initiatives at both societal and organisational levels to accelerate progress toward gender equality.

The representation of female board members is a critical component of the ESG framework. It is observed that the percentage of women in leadership positions has moved up from 30% in

2016 to 36.9% in 2022 (WEF, 2022). Although this demonstrates a steady upward trend, the progress remains slow. Moreover, gender disparities vary significantly across industries. Women have the lowest representation in the infrastructure sector and the highest representation in non-governmental and membership organisations (WEF, 2022).

Globally, equal pay initiatives, corporate diversity programs, and political reforms are being adopted to promote gender equality. Additionally, an increasing number of companies are publishing gender equality indicators in financial reports as part of their ESG strategies. While these are encouraging developments, progress is still slow, highlighting the urgent need for long-term and sustainable transformations that ensure gender equality across all dimensions.

2.2.1. Key Performance Indicators for Gender Diversity in ESG

Gender diversity and inclusion efforts are measured using objective performance criteria, which provide insights into progress toward gender equality. The Diversity, Equity, and Inclusion (DEI) scores assess the level of diversity, equality, and participation across different levels of the organisation. The key pillars of DEI are described below.

- *Diversity:* Women's representation in the workforce, board, executive management, hiring practices, and promotion policies.
- *Equality:* Pay equity, access to promotion opportunities, benefits, and workplace accessibility.
- *Inclusiveness:* Inclusive corporate culture, anti-discrimination policies, prevention of sexual harassment, women’s networks, and leadership training programs.

Although DEI scores represent a positive step in measuring corporate gender equality, they are not yet fully integrated into key performance indicators as a metric. To enhance the effectiveness of DEI in governance, stronger policies, increased awareness, and better integration into ESG reporting are necessary.

2.3. Management Board

The Management Board (MB) is the highest-ranking decision-making body within an organisation, responsible for strategic planning, risk management, oversight of top management, and stakeholder engagement. The MB must maintain independence and objectivity in decision-making, ensuring transparency and corporate accountability, which will in turn minimise conflicts of interest between shareholders and executives.

The corporate bankruptcies of the 1970s in the United States highlighted the critical need for independent monitoring mechanisms in corporate governance. In response, the Securities and Exchange Commission (SEC) mandated in 1978 that each New York Stock Exchange (NYSE) listed company establish audit committees composed entirely of independent directors (SEC, 1978). This regulatory reform played a pivotal role in restoring investor confidence and reinforcing governance structures. Although widely accepted, scholars argue that further refinements in governance regulations remain necessary to enhance oversight effectiveness (Baysinger & Butler, 1985).

To ensure long-term corporate stability and regulatory compliance, MBs typically establish independent board committees dedicated to specialised oversight functions. Among the most common committees are the audit, remuneration and compensation, risk management, and ESG committees. Each of these committees serves to strengthen corporate governance by promoting financial integrity, risk mitigation, and sustainable business practices (OECD, 2023).

European countries have pioneered gender quotas to support women in board diversity. For example, Norway is the first country in Europe to enact such a regulation in 2003, enforcing 40% women's representation on corporate boards (Pande & Ford, 2012). Later in 2007, Spain adopted a similar practice. The Netherlands, Iceland, and France followed suit in 2010. This is a manifestation of studies finding that gender-diverse boards have an enhanced decision-making process and better company performance (Adams & Ferreira, 2009; Terjesen et al.,

2009). Mandatory gender quota practices in Europe reveal that women on corporate boards have a positive relationship with corporate performance only if female board members are assigned to their positions through sound governance and not through voluntary or symbolic gestures.

As corporate governance frameworks continue to evolve, maintaining board independence, gender diversity, and regulatory oversight remains crucial for enhancing transparency, strengthening investor confidence, and ensuring long-term corporate success (OECD, 2023).

2.4. Hypotheses

We targeted testing board diversity and its relation to corporate performance. Gender is a key factor in defining diverse teams (Hambrick & Mason, 1985). Female board members strengthen decision-making processes, which in turn contribute to higher corporate performance. Those firms that have gender-diverse boards are likely to have more sustainable strategies and improve financial outcomes (Burke & Collins, 2001; Terjesen et al., 2009). Accordingly, this study proposes three hypotheses that are in line with the aforementioned.

H1: The presence of women on the board positively impacts company performance, measured by return on equity (ROE).

H2: The presence of women on the board positively impacts company performance, measured by return on assets (ROA).

H3: The presence of women on the board positively impacts the company market value.

3. Methodology

3.1. Sample

This study examines global companies listed in the Forbes Global 2000 ranking to conduct a comprehensive analysis. Since 2003, Forbes Global 2000 has annually ranked the world's largest publicly traded companies based on four key financial indicators: sales, profits, assets,

and market value. The overall ranking is determined by a composite score derived from these metrics (Forbes, 2022).

The sample includes banks, investment firms, asset management companies, private equity firms, wealth management firms, and securities firms. From the 2000 companies listed in the Forbes Global 2000, a total of 326 companies were selected for analysis. Since the Forbes Global 2000 exclusively comprises publicly traded companies, financial reporting standards are stringent, ensuring the reliability and consistency of the collected data. Most of the financial and corporate governance data for this study were sourced from annual reports.

While some studies utilise multi-year datasets, others rely on single-year data. Notably, Ping (2007) and Richard & Shelor (2002) have conducted analyses based on data from a single year. In line with these studies, this research employs data from 2022 to maintain comparability and consistency across firms.

3.2. Dependent Variables

Auden (2006) argues that accounting-based ratios assess a company's past performance, whereas market-based ratios offer insights into its future performance. Accounting-based ratios are derived from balance sheets and income statements, reflecting historical financial performance. In contrast, market-based ratios incorporate data from income statements, stock dividends, and price fluctuations, providing a forward-looking evaluation of a company's financial outlook. Both approaches are widely used in financial analysis. This study employs a mixed-model approach, integrating indicators based on accounting and market, ensuring a comprehensive assessment of company performance.

This study employs Return on Assets (ROA) as a financial ratio to measure company performance. ROA measures income relative to total assets, reflecting the efficiency the firm utilises firm resources to generate profits (calculated by net income over total assets).

Additionally, Return on Equity (ROE) is used as another accounting-based ratio to evaluate financial performance (calculated by net income over total equity), providing insights into how effectively a company generates income from its equity base (Jones et al., 2000).

Beyond traditional accounting-based metrics, this study integrates market value as a forward-looking indicator of firm performance. Market value, commonly referred to as market capitalisation (the total number of outstanding shares multiplied by share price). Given that this research focuses on publicly listed global firms, all financial data were available in official annual reports. In addition, 2022 market value figures were obtained from the StockAnalysis.com database.

3.3. Independent Variables

Amongst the key metrics assessing board gender diversity, the number of women board members and the total number of directors have been employed in our research. Gender heterogeneity is also considered. The percentage of women board members relative to total board size is another important factor that is considered.

To measure board gender heterogeneity, we used Blau's Index (BI). BI is calculated as $BI = 1 - \sum Pi^2$. Pi represents the ratio of each gender within the respective board.

A BI value near 0 indicates a completely homogeneous board composition in terms of gender, whereas a value close to 1 signifies high gender heterogeneity, reflecting a more diverse board structure.

3.4. Control Variables

Two control variables are, respectively, 'employee headcount' and 'company age'. Employee headcount is widely recognised in academic research. Often, firm size is proxied by employee headcount, which has significant implications for efficiency, innovation capacity, financial

stability, and competitive strength. Larger firms benefit from economies of scale, enabling them to employ specialised experts and optimise resource allocation, thus enhancing innovation and operational efficiency (Penrose, 1959). As workforce specialisation increases, so does productivity, leading to improved organisational performance. Additionally, larger firms tend to exhibit greater financial stability due to diversified revenue streams and resource buffers, reducing their vulnerability to economic fluctuations (Chandler, 1990).

Human capital represents a strategic resource. It enhances a firm's capability to remain competitive. A larger workforce fosters innovation by incorporating diverse cognitive abilities and creative problem-solving skills, a concept well-established in absorptive capacity theory (Cohen & Levinthal, 1990). Consequently, larger firms are often better positioned to set industry standards, expand market share, and sustain long-term growth. Employee headcount is often employed within academic research, as it is a significant determinant of firm size (Carpenter & Fredrickson, 2001). Larger companies have the advantage of economies of scale, which in turn influence financial results. Altogether, this makes employee headcount an important factor in corporate performance analysis. However, firm size also shapes corporate culture and employee engagement in distinct ways. While smaller firms tend to be more agile, fostering close interpersonal relationships and swift decision-making, larger firms offer structured career development opportunities but may struggle with bureaucratic inefficiencies and organisational inertia, which can hinder adaptability (Sanders & Carpenter, 1998).

Years in business since establishment is another important indicator. This serves as a proxy for organisational learning and institutional know-how. Firm age is discussed as both a strategic indicator and a determinant of strategic orientation, endurance, and effective corporate governance (Hannan & Freeman, 1984). Younger firms often enjoy greater flexibility, innovation, and responsiveness to market dynamics because they are open to trying and experimenting with breakthrough technologies, as well as agile business models (Thornhill &

Amit, 2003). Older companies have the advantage of established corporate governance structures and operational stability. These help form better financial performance (Coad et al., 2018). Rajan & Zingales (1998) state that younger firms might face some challenges like scarcity of resources and volatility, even though they enjoy risk-taking and rapid innovation. On the other side, older firms have more freedom in terms of resources, and they enjoy accumulated know-how. The downside that older companies face is organisational inertia and corporate inefficiencies (Hall, 1987). Accordingly, Coad et al. (2018) suggest that a well-balanced set of these traits is necessary. Loderer & Waelchli (2010) employed company age as a control variable. This is due to its implications on corporate governance and organisational know-how. Long-term growth and corporate endurance are indicators of company age, influencing financial outcomes.

3.5. Analysis

We first conducted a correlation analysis using Pearson's r to test out our hypotheses and derive the strength and direction of the variables. It allowed us to identify potential statistical associations and determine the significance of these relationships.

After the correlation analysis, we performed a multiple regression analysis. This was done to examine how gender diversity, board size, and other firm characteristics influence company performance. We examined the impact of the number of female board members, board gender heterogeneity, and board size on key financial performance indicators of ROE, ROA, and market value. The regression model is formulated below.

$$Y=\beta 0+\beta 1X1+\beta 2X2+\beta 3X3+...+\beta nXn+\epsilon$$

Y= ROE, ROA, Tobin's Q

β0= Coefficient

β1= Coefficient

β2= Coefficient

β3= Coefficient

βn= Coefficient

X1= Gender diversity (heterogeneity)

X2= Number of women on the board

X3= Size of the board

X4= Proportion of female board members within the board

X5= Staff number

X6= Company age

ϵ = Error

By incorporating firm size (proxied by employee headcount) and company age as control variables, we targeted offsetting the potential confounding factors that may influence financial performance. This regression framework allowed us to assess whether gender diversity at the board level has a statistically significant impact on company performance while controlling for firm-specific characteristics.

4. Results

As summarised in the descriptive statistics presented in Table 1, a total of 326 companies were analysed. ROA ranged from –6.08% to 18.11%, with a mean of 1.29%, indicating a moderate level of return consistent with industry expectations for the financial sector. ROE averaged

11.01%, reflecting strong profitability overall. Notably, M&G plc recorded an ROE of –42.56% in 2022, which appears to be an anomaly specific to that year. All financial figures were converted to U.S. dollars using average exchange rates for 2022.

The mean market value of the analysed firms was $22.9 billion. However, this figure was significantly skewed due to the presence of large financial institutions such as JPMorgan Chase, which had a market value of $393.48 billion; this outlier substantially raised the overall mean.

Regarding board composition, the average number of female board members in our dataset was 2.63, while the average board size was 11.32 members. The average percentage of female board members relative to total board size was 22.83%, indicating that, despite growing awareness of gender diversity, women remain underrepresented on corporate boards. Board gender heterogeneity, calculated using Blau's Index, yields an average score of 0.31 that suggests moderate gender diversity at the board level. Although many firms have taken steps to improve representation, 32 companies in the sample still had no female board members in 2022. The number of employees varies significantly, ranging from 15 to 427,590 employees, with the latter corresponding to the Industrial and Commercial Bank of China (ICBC). The highest employee counts were observed among Chinese financial corporations, highlighting the scale of these institutions and the region's large population.

Finally, the average company age was 82.45 years, indicating that many firms in the sample are well established. European companies exhibited the highest average age at 116.19 years, followed by North American firms with an average of 113.76 years. These findings suggest that financial firms in these regions have a long history and well-developed corporate governance structures.

Table 1

Descriptive statistics of key variables (N = 326)

Variable	Min	Max	M	SD
ROA	–6.08	18.11	1.29	2.19
ROE	–42.56	92.57	11.01	10.58
Market Value (in bn USD)	0.05	393.48	22.90	40.85
Female Board Member (#)	0.00	8.00	2.63	1.79
Board Size	3.00	21.00	11.32	3.07
Board Gender Heterogeneity	0.00	0.50	0.31	0.15
Woman Board Percentage	0.00	0.60	0.23	0.14
Number of Employees	15.00	427,590.00	29,373.49	53,220.55
Company Age (years)	6.00	332.00	82.45	60.73

Note. M=Mean, SD=Standard Deviation. Market Value is expressed in billion USD. Values are rounded to two decimal places.

The correlation analysis results indicate several statistically significant relationships among board heterogeneity, company characteristics, and financial performance. The number of female board members is positively and significantly correlated with market value ($r = .242$, $p < .001$). Board gender heterogeneity shows a significant positive correlation with market value ($r = .175$, $p = .002$). Similarly, the percentage of women on the board demonstrates a significant positive correlation with market value ($r = .167$, $p = .002$). These findings suggest that companies with more gender-diverse boards tend to have higher market valuations. Employee headcount is strongly and positively correlated with market value ($r = .739$, $p < .001$), reinforcing the idea that larger firms tend to be more highly valued. Additionally, company age shows a moderate positive correlation with market value ($r = .202$, $p < .001$), indicating that older, more established companies generally achieve higher valuations.

In terms of financial performance, ROE is negatively correlated with board size ($r = –.110$, $p = .047$), suggesting that larger boards may be less efficient in generating returns on equity. However, none of the board gender diversity measures (number of women, Blau's Index, or

women on board percentage) showed significant correlations with ROE or ROA, indicating no clear linear relationship between board gender diversity and accounting-based profitability.

As expected, strong and statistically significant intercorrelations exist among the board gender diversity variables. The number of female board members is highly correlated with board gender heterogeneity ($r = .854$, $p < .001$) and with the percentage of women on the board ($r = .891$, $p < .001$), confirming consistency across different diversity indicators. Finally, company age is significantly and positively correlated with the number of women on the board ($r = .304$, $p < .001$), gender heterogeneity ($r = .257$, $p < .001$), and women percentage ($r = .293$, $p < .001$), suggesting that older firms are more likely to include women on their boards, potentially reflecting evolving governance practices over time.

These findings reinforce the relevance of board diversity and firm characteristics in shaping company valuation, while also highlighting the need for further investigation into the mechanisms linking gender composition to financial performance.

Table 2

Correlation analysis (N = 326)

	ROE	ROA	Market Value	Women Board Members	Board Size	Board Gender Heterogeneity	Women Board Percentage	Nr. Of Empl.	Comp. Age
ROE	1								
ROA	.458**	1							
Market Value	.058	.057	1						
Women Board Members	–.041	–.019	.242**	1					
Board Size	–.110*	–.070	.197**	.479**	1				
Board Gender Heterogeneity	–.043	.017	.175**	.854**	.148**	1			
Women Board Percentage	–.044	–.002	.167**	.891**	.107	.941**	1		
Number of Employees	.023	–.050	.739**	.152**	.163**	.086	.086	1	
Company Age	–.032	–.103	.202**	.304**	.073	.257**	.293**	.221**	1

Note. Values represent Pearson's *r* coefficients. $P < .05$ is indicated by *; $p < .01$ is indicated by **. All tests were two-tailed.

This study employed multiple regression analysis to evaluate the proposed hypotheses, examining the effects of female board representation and various firm-level characteristics on company financial performance. Standardised beta (β) coefficients were used to interpret the direction and magnitude of the relationships between independent and dependent variables, whereas p-values were utilised to assess their statistical significance. The coefficient of determination (R^2) reflects the proportion of variance in the outcome variables accounted for by the model.

Table 3

Multiple regression analysis predicting ROE from board and company characteristics

Predictor	B	SE	β	t	p	95% CI [LL, UL]
Constant	25.820	4.130	—	6.250	<.001	[17.69, 33.95]
Women on Board	4.090	1.360	0.693	3.010	0.003	[1.41, 6.77]
Board Size	-1.320	0.360	-0.382	-3.620	<.001	[-2.03, -0.60]
Board Gender Heterogeneity	2.600	11.900	0.036	0.220	0.827	[-20.81, 26.02]
Women Board Percentage	-48.670	19.670	-0.645	-2.480	0.014	[-87.36, -9.98]
Number of Employees	0.000	0.000	0.043	0.750	0.454	[0.000, 0.000]
Company Age	-0.008	0.010	-0.045	-0.760	0.446	[-0.028, 0.012]

Note. CI = Confidence Interval; SE = Standard Error; B = Unstandardized coefficient; β = Standardized beta coefficient; R^2 = .043; Adjusted R^2 = .025; Std. Error of the Estimate = 10.44.

Table 4

Multiple regression analysis predicting ROA from board and company characteristics

Predictor	B	SE	β	t	p	95% CI [LL, UL]
Constant	2.595	0.863	__	3.007	0.003	[0.898, 4.293]
Women on Board	0.307	0.284	0.251	1.078	0.282	[-0.253, 0.866]
Board Size	-0.120	0.076	-0.169	-1.582	0.115	[-0.269, 0.029]
Board Gender Heterogeneity	2.494	2.485	0.169	1.004	0.316	[-2.395, 7.382]
Women Board Percentage	-5.210	4.106	-0.334	-1.269	0.205	[-13.289, 2.869]
Number of Employees	-0.000	0.000	-0.022	-0.391	0.696	[0.000, 0.000]
Company Age	-0.004	0.002	-0.108	-1.804	0.072	[-0.008, 0.000]

Note. CI = Confidence Interval; SE = Standard Error; B = Unstandardized coefficient; β = Standardized beta coefficient; R^2 = .022; Adjusted R^2 = .004; Std. Error of the Estimate = 2.18.

Table 5

Multiple regression analysis predicting market value from board and company characteristics

Predictor	B	SE	β	t	p	95% CI [LL, UL]
Constant	-0.302	10.754	__	-0.028	0.978	[-21.461, 20.856]
Women on Board	4.934	3.545	0.216	1.392	0.165	[-2.040, 11.908]
Board Size	-0.257	0.946	-0.019	-0.271	0.786	[-2.118, 1.604]
Board Gender Heterogeneity	27.242	30.965	0.099	0.880	0.38	[-33.680, 88.164]
Women Board Percentage	-52.489	51.171	-0.180	-1.026	0.306	[-153.165, 48.186]
Number of Employees	0.001	0.000	0.715	18.662	0.0	[0.000, 0.001]
Company Age	0.005	0.027	0.007	0.189	0.851	[-0.048, 0.058]

Note. CI = Confidence Interval; SE = Standard Error; B = Unstandardized coefficient; β = Standardized beta coefficient; R^2 = .566; Adjusted R^2 = .557; Std. Error of the Estimate = 27.18.

4.1. Impact on ROE

The regression model for ROE yielded an R^2 of 0.043, indicating that 4.3% of the variance in return on equity is explained by the independent variables. Among these, the number of women board members emerged as a significant and positive predictor ($\beta = 0.693$, $p = .003$), suggesting that greater women board member representation on the board contributes positively to profitability. In contrast, board size showed a significant negative effect on ROE ($\beta = –0.382$, $p < .001$), indicating that larger boards may be associated with reduced financial efficiency. Interestingly, the percentage of women on the board exhibited a strong negative relationship with ROE ($\beta = –0.645$, $p = .014$), suggesting that while the presence of women is beneficial, higher proportional representation may interact differently with firm performance. Our hypothesis, H1: The presence of women on the board positively impacts company performance, measured by return on equity (ROE), has been partially supported. Other variables, including gender heterogeneity, employee number, and company age, did not show statistically significant effects on ROE.

4.2. Impact on ROA

The R^2 value was 0.022, indicating a weak model fit. None of the variables were statistically significant at the 5% level. Although the number of women board members (β = 0.251, p = .282) and gender heterogeneity (β = 0.169, p = .316) were positively associated with return on assets, these relationships were not significant. The percentage of women on boards (β = –0.334, p = .205) and board size (β = –0.169, p = .115) showed negative associations; however, this is not significant. Company age had a marginally significant negative effect on ROA (β = –0,108, p = .072), which may indicate that older firms tend to exhibit slightly lower operational efficiency. Our hypothesis, H2: The presence of women on the board positively impacts company performance, measured by return on assets (ROA), is not supported.

4.3. Impact on Market Value

The model predicting market value produced an R^2 of 0.566, indicating a strong fit, with 56.6% of the variance in market capitalisation explained by the independent variables. The number of employees was the most influential and statistically significant predictor (β = 0.715, p < .001), implying that larger firms tend to have higher market valuations. While the number of women board members (β = 0.216, p = .165) showed a positive effect on market value, it was not statistically significant in this model. Similarly, the percentage of women on boards (β = –0.180, p = .306), board gender heterogeneity (β = 0.099, p = .38), and board size (β = –0.019, p = .786) did not have significant effects on market value. Company age was also found to be unrelated to firm valuation (β = 0.007, p = .851). Our hypothesis, H3: The presence of women on the board positively impacts company market value, has not been supported with these findings.

Overall, the regression findings demonstrate that gender diversity on boards positively influences ROE when measured in terms of the number of female board members, while its

effects on ROA and market value are not significant. The negative relationship between board size and ROE supports the view that smaller boards may enhance decision-making efficiency. Furthermore, firm size, as captured by the number of employees, remains a critical determinant of market valuation. These insights contribute to the ongoing discussion on how board composition affects financial outcomes, emphasising the importance of considering both quantitative and qualitative aspects of diversity. Additionally, the models for ROE and ROA show low explanatory power (R^2 = 0.043 and 0.022, respectively), indicating that other unobserved firm- or board-level variables may influence accounting-based performance more strongly than gender diversity.

5. Discussion

The findings of this study indicate that women on corporate boards have a strong and statistically positive impact on ROE. On the contrary, a higher percentage of female representation on boards diminishes ROE. These contrary findings reveal that if women do not hold powerful roles with meaningful participation in corporate decisions, proportional representation might not be adequate. This can be an example of tokenism, pointing to the symbolic appointment of female board members to meet formal diversity requirements. In this case, women are not given real authority; they do not participate in key committees, meaning that they do not take part in influential decisions of a company. Such appointments make the role of a female board member symbolic, which does not bring the benefits of gender diversity. Therefore, meaningful inclusion is needed. This underlines the fact that meaningful participation is more beneficial than numerical representation to benefit from diverse cognitive skills.

The Blau index was not a statistically significant determinant of company performance. This outcome supports the view that the strategic positioning and influence of individual female directors may matter more than aggregate diversity indices. While this diverges from earlier

studies suggesting a strong link between heterogeneity and performance, it aligns with more recent research that questions the effectiveness of abstract diversity measures in the absence of meaningful engagement.

Additionally, board size negatively affected ROE, suggesting that larger boards may hinder agility and decision-making efficiency. This is consistent with the literature on governance effectiveness, which highlights the drawbacks of overly large or fragmented boards. Importantly, our finding that gender diversity has a limited impact on ROA echoes results from Adams & Funk (2024), who found stronger effects of gender diversity on market valuation than on accounting-based indicators.

Firm size, as proxied by the number of employees, positively influenced market value, likely reflecting economies of scale and resource advantages. Company age showed a positive but inconsistent effect across models. The varying influence of gender diversity metrics, with the number of women showing a positive effect and the percentage showing a negative one, highlights the need to distinguish between absolute and relative representation. This nuance reinforces the Upper Echelon Theory (Hambrick & Mason, 1984), which posits that executives' demographic and cognitive traits shape organisational outcomes, but only when they influence within the firm's power structure.

From a practical perspective, the findings of this study suggest that to fully leverage gender diversity, it is crucial that women are assigned to board committees that contribute to influential and high-impact decisions. This would hinder tokenism and facilitate the effective use of the diverse cognitive skills of the board.

The limitation of this research is the fact that it is based on the data set from the year 2022. Future research that utilises multi-year datasets could neutralise year-specific effects and ensure the reflection of time series dynamics. Additionally, the inclusion of other sectors could reinforce broader implications and more universal findings.

6. Conclusion

The findings outlined above align with and extend current research. Kobayashi and Yamamoto (2024) found a negative relationship between board gender diversity and firm performance in Japan, particularly in smaller firms and regulated industries. Their study, like ours, suggests that the benefits of diversity are context-dependent and that cultural and institutional factors must be considered. Furthermore, Le et al. (2024) emphasise that female board presence improves performance only when women hold executive roles or bring relevant expertise, underscoring the importance of strategic capacity over headcount.

From a practical perspective, these findings underscore the need for policies that promote both representation and participation. Global companies that aspire to strengthen their ESG framework and improve financial performance should embrace gender diversity as a structural governance priority, not only a compliance bureaucracy. Bel-Oms et al. (2024) found that company performance improves if gender diversity is exercised amongst other components of corporate governance. This reveals the inclination of an organisation's commitment to gender diversity.

This research employed cross-sectional data belonging to the year 2022. Longitudinal or panel data could help incorporate the changes over time into the variables of the research. We also think that incorporating Hofstede’s cultural dimensions or the World Bank’s equality indices could help explain the differences between the geographic regions.

The findings of this research provide theoretical and practical evidence. Board gender diversity should not be treated as a compliance requirement. Board gender diversity can enhance corporate governance and company performance, especially when female board members are assigned to influential and decision-making roles. The results support Upper Echelon Theory with empirical evidence. These insights contribute to the ongoing discussion on how board

composition affects financial outcomes, emphasising the importance of considering both quantitative and qualitative aspects of diversity. This research paves the way for future studies discovering the relationship between board diversity, company performance, and corporate strategy.

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Yazarlar herhangi bir çıkar çatışmaları olmadığını beyan ederler.

Declaration of Conflict of Interest

The authors declare that they have no conflicts of interest.

Katkı Oranı Beyanı

1. yazar çalışmaya %75, 2. yazar çalışmaya %15 ve 3. yazar çalışmaya %10 oranında katkı vermiştir.

Declaration of Contribution

Author 1 contributed 75% to the study, Author 2 contributed 15% to the study, and Author 3 contributed 10% to the study.

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