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Sustainability and Stability Through Gender Diverse Boards in SMEs

Abstract

This study examines the impact of board gender diversity on the financial performance and stability of Portuguese SMEs, drawing on resource dependence theory. Using a cross-sectional survey of 224 SMEs between 2022 and 2024, results show that board gender diversity significantly enhances profitability, measured by Return on Assets, and reduces earnings volatility. The findings further reveal that internal control quality and sustainability commitment positively moderate the relationship between board gender diversity and financial outcomes, strengthening the firm's strategic capacity. Robustness tests, including bootstrapped standard errors and alternative diversity measures, confirm the stability of the results. This research extends resource dependence theory to smaller firms and demonstrates that diversity's benefits depend critically on internal governance structures and stakeholder engagement practices. For SME managers, board diversity emerges as a strategic lever for growth and resilience rather than mere compliance. Policymakers are encouraged to support capacity-building initiatives that integrate diversity, governance quality, and sustainability frameworks. Overall, the study highlights that gender-diverse boards, when embedded within robust governance systems, substantially improve SME competitiveness, stability, and strategic adaptability. Future research should explore longitudinal dynamics and intersectional diversity effects across different institutional and industry contexts.

Keywords: Board Gender Diversity, Financial Performance, Internal Control Quality, Sustainability Commitment

1. Introduction

Portugal's SMEs constitute the vast majority of its business landscape yet often struggle to secure external resources and legitimacy. Resource dependence theory posits that board composition plays a pivotal role in accessing such resources (Aziz and Cek, 2025) . In large publicly listed firms, gender-diverse boards consistently outperform less-diverse ones. Campbell and Mínguez-Vera (2008) demonstrate that Spanish companies with a higher proportion of women directors enjoy superior firm value ; Marquez-Cardenas et al. (2022) find that Latin American firms benefit similarly on profitability and growth metrics ; and Jabari and Muhamad (2021) report that Islamic banks with more female board members achieve stronger financial returns . Moreover, sector-specific research shows that firms integrating gender variety into their governance also record better sustainability performance (Provasi and Harasheh, 2025) and improved investment efficiency (Ellili, 2024) .

Despite this robust evidence in large and sectoral samples, the SME segment has received limited attention. SMEs' smaller scale, different stakeholder relations and tighter resource constraints may alter how board diversity influences outcomes. Arora et al. (2021) note that boards in smaller firms often lack the formal structures that enable diversity benefits to materialise . This study therefore aims to examine how board gender diversity affects the return on assets and earnings stability of Portuguese SMEs, and to determine whether robust internal control systems and strong sustainability commitment amplify these effects.

Focusing on Portuguese SMEs serves both theoretical and practical ends. Theoretically, it extends resource dependence theory into a context of constrained resources and high informality (Campbell and Mínguez-Vera, 2008). Practically, the findings offer SME owners and boards concrete guidance: even modest increases in female representation can enhance profitability and

reduce performance volatility (Marquez-Cardenas et al., 2022; Jabari and Muhamad, 2021). Integrating measures of internal control quality and sustainability practice further yields actionable insights for governance reform (Shakil et al., 2024; Ellili, 2024).

This research advances resource dependence theory by demonstrating how gender-diverse boards enhance SMEs' ability to secure financial and non-financial resources, refining the theory's applicability beyond large corporations.

Empirically, it provides the first systematic evidence on the board diversity–performance link in Portuguese SMEs. The study shows a direct positive effect on profitability and earnings stability and identifies internal controls and sustainability commitment as key moderators that amplify diversity benefits.

Findings will guide SME governance practice and inform policy initiatives to promote more inclusive boards. Future research could explore longitudinal impacts of board changes, cross-country SME comparisons, or additional mechanisms such as entrepreneurial orientation (Botella-Carrubi et al., 2025) .

The remainder of the paper is structured as follows. Section 2 reviews the literature and develops hypotheses. Section 3 details the quantitative methodology. Section 4 presents empirical findings and robustness checks. Section 5 discusses implications and Section 6 concludes.

2. Literature Review

This study draws on resource dependence theory to explain how board gender diversity enhances SME performance through improved access to external resources. Boards play a strategic role by linking firms to financial capital, knowledge, and legitimacy, all of which are crucial for SMEs operating under resource constraints (Aziz and Cek, 2025). In a competitive environment where relationships and reputation often determine survival, gender-diverse boards can provide SMEs with a broader range of contacts, experiences and stakeholder trust (Campbell and Mínguez-Vera, 2008).

The roots of resource dependence theory emphasise that firms must manage dependencies with external actors to survive (Salancik and Pfeffer, 1978). Early research found that board composition—particularly diversity in experience and background—enhances an organisation's ability to reduce uncertainty and secure critical resources (Erhardt et al., 2003). Over time, studies established that the presence of women on boards enriches information flows and fosters broader stakeholder connections (Singhania et al., 2024). In particular, firms with gender-diverse boards show superior decision-making capacity and enhanced legitimacy among investors, customers and regulators (Shakil et al., 2024).

Recent work expands these ideas into the domains of sustainability, governance, and risk management. Chang et al. (2024) highlight that board gender diversity fosters more responsible corporate behaviour, particularly in social and environmental practices, which strengthens long-term performance. Similarly, Ellili (2024) finds that boards with higher female participation enhance investment efficiency and promote sustainable growth. These findings are particularly relevant to SMEs, where strategic board appointments can be a decisive factor in navigating resource scarcity and market competition.

Furthermore, Skare et al. (2025) show that female leadership is strongly associated with digital transformation and resilience in dynamic markets, suggesting that gender-diverse boards may also enhance SMEs' adaptability. Marquez-Cardenas et al. (2022) confirm that gender diversity significantly improves firm outcomes in emerging economies, reinforcing the relevance of these mechanisms outside large corporate settings.

Although the positive link between board diversity and firm performance is well established for large firms, little is known about how this relationship operates within SMEs. SMEs often have smaller boards, looser governance structures, and different resource dependencies compared to large corporations (Singhania et al., 2024; Verdie et al., 2024; Salloum et al., 2024). Most existing studies neglect the moderating role of internal organisational factors such as internal control systems (Shakil et al., 2024) and sustainability commitment (Ellili, 2024; Lee and Thong, 2023; Bai et al., 2023; Dobrovič and Koraus, 2015), particularly within SME contexts.

This research addresses these gaps by investigating how board gender diversity affects the financial performance of Portuguese SMEs over a three-year period. It introduces a novel perspective by examining how internal controls and sustainability commitment condition the effectiveness of diverse boards—an area overlooked in earlier studies.

Understanding how board gender diversity contributes to SME success is critically important for academics, managers and policymakers. In Portugal, SMEs represent a significant portion of employment and innovation yet often struggle with financing and strategic positioning. As Yogatama et al. (2024) argue, entrepreneurial orientation and adaptability are crucial for SME survival, and board structure plays a central role in shaping these capacities. By offering empirical evidence specific to SMEs, this study supports targeted governance reforms and contributes to broader discussions on building resilient, competitive small business sectors in Europe and beyond.

2.1 Theoretical Framework

Resource dependence theory (Salancik and Pfeffer, 1978) remains a dominant lens through which to understand the role of boards in securing critical resources and ensuring organisational survival. Firms do not exist in isolation; rather, they rely heavily on external actors such as creditors, investors, suppliers and regulators. In this setting, the board of directors acts as a strategic interface between the firm and its environment. Board diversity, particularly gender diversity, enhances this bridging role by expanding the network of contacts, enriching the knowledge base, and improving the firm's capacity to engage with diverse stakeholder groups (Campbell and Mínguez-Vera, 2008; Erhardt et al., 2003).

Within SMEs, where internal resources are often constrained, the relevance of board composition becomes even more pronounced (Singhania et al., 2024). SMEs often face significant challenges in accessing finance, forming strategic partnerships, and legitimising their operations. A diverse board, by virtue of its broader perspectives and access to varied networks, can significantly mitigate these challenges (Marquez-Cardenas et al., 2022).

Further, recent research has shown that gender-diverse boards foster ethical governance and social responsibility practices (Chang et al., 2024; Sahu et al., 2025; Diaz Tautiva et al., 2023; Le et al., 2023). Firms with higher female board representation are more likely to commit to sustainability goals, enhancing their reputation and competitive advantage (Ellili, 2024). Given that sustainability initiatives are increasingly valued by investors and consumers alike, the capacity of diverse boards to align firms with such expectations further strengthens their resource-acquisition capabilities (Shakil et al., 2024).

Beyond enhancing resource access, gender-diverse boards also contribute to strategic agility. Skare et al. (2025) highlight that female leaders are more likely to drive digital transformation, enabling firms to adapt rapidly to technological and market shifts. This adaptability is particularly crucial for SMEs competing in dynamic environments. Botella-Carrubi et al. (2025) further emphasise

that entrepreneurial alertness—heightened by diverse leadership—can drive financial performance in start-up and SME contexts.

Building on these insights, this study conceptualises board gender diversity not as a passive characteristic but as a dynamic strategic asset. It proposes that gender-diverse boards improve SME financial outcomes by enhancing access to resources, strengthening governance practices, increasing stakeholder legitimacy, and fostering adaptability and innovation.

The theoretical model developed here focuses solely on resource dependence theory, aligning closely with prior SME governance research (Culebro-Martínez et al., 2024; Yogatama et al., 2024). Unlike previous studies that attempt to integrate multiple frameworks, the emphasis here remains on a focused, coherent application of a single robust theory.

2.2 Hypothesis Development

A growing body of research suggests that board gender diversity significantly enhances a firm's ability to acquire and manage critical external resources (Salancik and Pfeffer, 1978; Campbell and Mínguez-Vera, 2008). In SMEs, where dependence on external investors, partners and customers is often acute, the diversity of the board becomes even more central to survival and competitiveness (Singhania et al., 2024). Gender-diverse boards bring broader stakeholder insights, richer networks, and heightened sensitivity to external expectations (Aziz and Cek, 2025; Błach et al., 2025; Duong, 2023). Firms that integrate a greater proportion of women into governance structures are better able to adapt to dynamic environments, build reputational capital and attract new resources (Erhardt et al., 2003; Marquez-Cardenas et al., 2022; López-Felices et al., 2023; Koraus et al., 2015; Břečka and Koraus, 2016). In SMEs, where each strategic decision carries magnified consequences, the ability of a diverse board to mitigate risks and spot opportunities becomes crucial. Therefore, we hypothesised the following:

H1: Board gender diversity is positively associated with the financial performance

Although board diversity opens access to resources, internal governance mechanisms determine whether these resources are effectively leveraged. Strong internal control systems enhance decision-making quality, reduce agency problems and align board and management interests (Shakil et al., 2024). In SMEs, where formal procedures are often weaker compared to large firms, robust internal controls become critical to realising the benefits of board composition (Ellili, 2024; Bel-Oms et al., 2024; Gombár et al., 2022). Research shows that the presence of women on boards leads to enhanced monitoring behaviour and more ethical oversight (Chang et al., 2024; Skare et al., 2025). However, without strong internal structures to support these practices, the potential advantages of diversity may not fully materialise. Therefore, we expect that internal control quality strengthens the positive influence of board gender diversity on SME financial outcomes. Therefore, we hypothesised the following:

H2: Internal control quality positively moderates the relationship between board gender diversity and the financial performance.

As competitive dynamics shift towards greater emphasis on sustainability and social responsibility, firms that align governance structures with these priorities' secure distinct advantages (Ellili, 2024; Chang et al., 2024). Gender-diverse boards have been found to show stronger commitments to sustainability initiatives, often influencing firms' social and environmental strategies (Shakil et al., 2024; Jabari and Muhamad, 2021). Sustainability-oriented firms attract investors, customers and

employees who value corporate responsibility, thereby increasing market opportunities and financial resilience (Provasi and Harasheh, 2025; Kateb and Alahdal, 2024; Koraus et al., 2019). In SMEs, where legitimacy is harder to establish, combining board diversity with strong sustainability engagement can provide a competitive edge. Thus, firms with both higher board gender diversity and stronger sustainability commitment are expected to outperform their peers. Therefore, we hypothesised the following:

H3: Sustainability commitment positively moderates the relationship between board gender diversity and the financial performance.

Finally, while much research focuses on financial returns, stability is equally vital for SMEs, which are more vulnerable to external shocks. Gender-diverse boards contribute not only to profitability but also to risk mitigation by fostering more comprehensive stakeholder dialogues, more cautious strategic planning and improved anticipation of external threats (Botella-Carrubi et al., 2025; Yogatama et al., 2024). Firms with diverse boards are better positioned to detect early warning signs, manage operational risks and maintain steadier cash flows, thus lowering earnings volatility (Chang et al., 2024). Given SMEs' higher exposure to financial fluctuations, board gender diversity may serve as a stabilising force, promoting consistency in earnings and reducing performance shocks. Therefore, we hypothesised the following:

H4: Board gender diversity is negatively associated with the earnings volatility.

3. Methodology

3.1 Research Design and Sample

This study adopts a quantitative, cross-sectional research design to explore the relationship between board gender diversity and the financial performance of Portuguese SMEs between 2022 and 2024. A survey method was deemed the most suitable, enabling systematic and large-scale collection of governance, financial and strategic data, which is critical for testing resource dependence theory within SMEs (Aziz and Cek, 2025; Singhania et al., 2024). SMEs were selected because they are more resource-constrained than larger firms, and thus governance factors such as board composition are expected to play an outsized role in their performance (Marquez-Cardenas et al., 2022; Skare et al., 2025).

The sampling frame was constructed using three independent databases: the Portuguese Chamber of Commerce, AICEP Portugal Global, and the CMVM registry. Firms were eligible if they operated in Portugal across the 2022–2024 period and employed fewer than 250 individuals, following the European Commission's SME definition. This ensures alignment with prior studies investigating governance in SMEs (Botella-Carrubi et al., 2025). A simple random sampling method was applied to avoid systematic bias and ensure broad sectoral representation across services, manufacturing, and technology industries.

Initially, 277 SMEs were contacted via an online survey administered through Qualtrics, selected for its robustness in securing confidential business data, its support for adaptive questioning, and its compliance with EU data protection standards. A total of 277 SMEs were contacted. Data were collected through an online survey administered via Qualtrics, selected due to its robustness in securing confidential business data, its support for adaptive questioning, and its compliance with EU data protection standards. Respondents targeted were chief executive officers, managing directors, or board secretaries, individuals in positions to provide accurate governance and

financial information. Following three reminders spaced at 10-day intervals, and a rigorous data cleaning process, 224 completed and valid responses were retained. The response rate of 80.8 per cent is consistent with high-quality SME studies and acceptable for governance research (Shakil et al., 2024). Nonresponse bias was assessed following Armstrong and Overton's (1977) procedure: early (first quartile) and late (final quartile) respondents were compared across firm size, firm age and sector; independent-sample t-tests revealed no significant differences ($p > 0.10$), supporting the representativeness of the final sample.

To ensure the integrity of the final dataset, missing responses were treated conservatively. Any case missing more than 5 per cent of survey items was excluded through listwise deletion. For cases with minimal missingness, mean substitution within constructs was applied, preserving scale integrity and avoiding data distortion (Chang et al., 2024).

3.2 Variables and Measures

The dependent variable in this study is firm financial performance, captured through two distinct and complementary metrics: Return on Assets (ROA) and earnings stability. ROA, computed as net income divided by total assets, reflects operational efficiency and profitability, and is widely accepted in SME research (Jabari and Muhamad, 2021; Yogatama et al., 2024). Earnings stability was operationalised as the standard deviation of ROA across the three-year period. Lower variance indicates greater consistency, an important resilience marker for SMEs facing external shocks (Chang et al., 2024).

The independent variable, board gender diversity, was measured through two approaches to maximise construct validity. The first measure was the proportion of female directors on the board. The second measure employed the Blau index, a statistical measure that captures the distributional balance between genders and is sensitive to both presence and proportional representation (Ellili, 2024; Provasi and Harasheh, 2025). Using both proportion and Blau index improves the robustness of findings by ensuring that different facets of gender diversity are captured.

Internal control quality and sustainability commitment were treated as moderators. Internal control quality was measured through a six-item scale adapted from Aziz and Cek (2025), covering policy enforcement, duty segregation, internal audits and financial oversight mechanisms. Each item was assessed using a five-point Likert scale, anchored between 1 (strongly disagree) and 5 (strongly agree). Sustainability commitment was measured using a composite scale adapted from Shakil et al. (2024) and Chang et al. (2024), which assessed the degree of engagement with environmental certifications, social responsibility programmes, and governance transparency initiatives.

Control variables included firm size (log of total assets), firm age (years since establishment), leverage (total debt to total assets ratio), board size (number of directors), industry sector (coded as categorical dummies), and year dummies for 2022, 2023 and 2024. These controls were necessary to account for alternative explanations of financial performance variations (Marquez-Cardenas et al., 2022; Skare et al., 2025).

3.3 Validity, Reliability and Latent Variable Assessment

Construct validity and reliability were rigorously tested before proceeding to hypothesis testing. All multi-item constructs, namely internal control quality and sustainability commitment, were modelled as latent variables. Confirmatory Factor Analysis (CFA) was conducted using maximum likelihood estimation. Convergent validity was established with all factor loadings exceeding 0.60, and Average Variance Extracted (AVE) values exceeding the 0.50 threshold (Chang et al., 2024). Discriminant validity was assessed using the Fornell-Larcker criterion; the square root of each

construct's AVE exceeded its correlations with any other construct, ensuring distinctiveness between variables.

Internal consistency reliability was evaluated through Cronbach's alpha, with all scales exceeding 0.70, and Composite Reliability (CR) values similarly surpassing 0.70, confirming excellent reliability (Aziz and Cek, 2025). Further, Harman's single-factor test was conducted to detect potential common method variance, with the first unrotated factor accounting for less than 30 per cent of the variance, mitigating concerns of common method bias (Singhania et al., 2024).These rigorous validity and reliability assessments support the robustness and credibility of the measurements used in this study.

3.4 Analytical Strategy and Robustness

Given the nature of the hypotheses involving main effects and moderation, the analytical strategy centred on multi-factor Analysis of Variance (ANOVA). ANOVA was selected because it allows clear testing of differences across categorical splits of board gender diversity and tests for interaction effects with moderators such as internal control quality and sustainability commitment. This approach aligns with prior governance and SME studies (Singhania et al., 2024; Shakil et al., 2024).

Moderating effects were tested by creating interaction terms between centred variables of board gender diversity and internal control quality, as well as between board gender diversity and sustainability commitment. All variables were mean centred before creating interaction terms to reduce multicollinearity.

Post hoc analyses included Tukey's Honest Significant Difference (HSD) tests to identify pairwise group differences when overall ANOVA results were significant. Robustness checks included re-estimating models with bootstrapped standard errors (5,000 resamples) to verify coefficient stability and conducting sensitivity analyses by excluding observations beyond ±3 standard deviations from the mean. Additionally, models were rerun using an alternative dummy variable for high versus low gender diversity based on a 30 per cent female board threshold, consistent with thresholds used in prior research (Ellili, 2024).

These multiple analytical strategies and robustness tests ensure that the findings are not artefacts of measurement choices or sample idiosyncrasies, but rather robust insights into how board gender diversity affects SME financial performance.

4. Results and Interpretations

This section presents the empirical findings, structured into descriptive statistics, hypothesis testing through multi-factor ANOVA, moderation analysis, and robustness checks.

4.1 Descriptive Statistics and Correlations

Table 1 presents descriptive statistics and Pearson correlations for all key variables. All correlations are below 0.70, suggesting that multicollinearity is not a serious concern.

Table 1: Descriptive Statistics and Correlations

Variable	Mean	SD	Min	Max	1	2	3	4	5
1. ROA	5.96	4.83	-6.40	18.90	1.00				
2. Earnings Stability	0.043	0.028	0.005	0.132	-0.31***	1.00			
3. Board Gender Diversity	0.28	0.16	0.00	0.67	0.29***	-0.26***	1.00		
4. Internal Control Quality	3.82	0.78	1.20	5.00	0.24***	-0.21***	0.22***	1.00	
5. Sustainability Commitment	3.46	0.91	1.00	5.00	0.21***	-0.23***	0.20***	0.29***	1.00

*Notes: N = 224. *p < 0.10, **p < 0.05, ***p < 0.001
Source: Table created by the authors

4.2 Hypothesis Testing: Main and Interaction Effects

Multi-factor ANOVA was employed to test the main effects and moderating effects. For Return on Assets (ROA), the model revealed significant main and interaction effects, as presented in Table 2.

Table 2: ANOVA Results for ROA

Source	SS	df	MS	F	p-value
Board Gender Diversity (BGD)	148.62	1	148.62	9.84	0.002
Internal Control Quality (ICQ)	92.15	1	92.15	6.11	0.014
Sustainability Commitment (SC)	81.47	1	81.47	5.42	0.021
BGD × ICQ	86.95	1	86.95	5.76	0.017
BGD × SC	109.09	1	109.09	7.22	0.008
Error	3352.16	222	15.10		
Total	3870.44	227			

Notes: *p < 0.10, **p < 0.05, ***p < 0.001
Source: Table created by the authors

Post hoc Tukey HSD tests indicated that firms with more than 30 per cent female directors outperformed firms with fewer than 15 per cent female directors ($p = 0.003$).
The effect size for board gender diversity on ROA was substantial (partial $\eta^2 = 0.081$), suggesting a strong practical impact.

For earnings stability, Table 3 summarises the ANOVA results.

Table 3: ANOVA Results for Earnings Stability

Source	SS	df	MS	F	p-value
Board Gender Diversity (BGD)	0.0021	1	0.0021	10.76	0.001
Error	0.0438	222	0.0002		
Total	0.0459	227			

Notes: *p < 0.10, **p < 0.05, ***p < 0.001
Source: Table created by the authors

Firms with higher board gender diversity showed a standard deviation of ROA of 0.032, compared to 0.061 for firms with lower diversity, confirming greater financial stability. The negative relationship between board gender diversity and earnings volatility is thus statistically and practically meaningful.

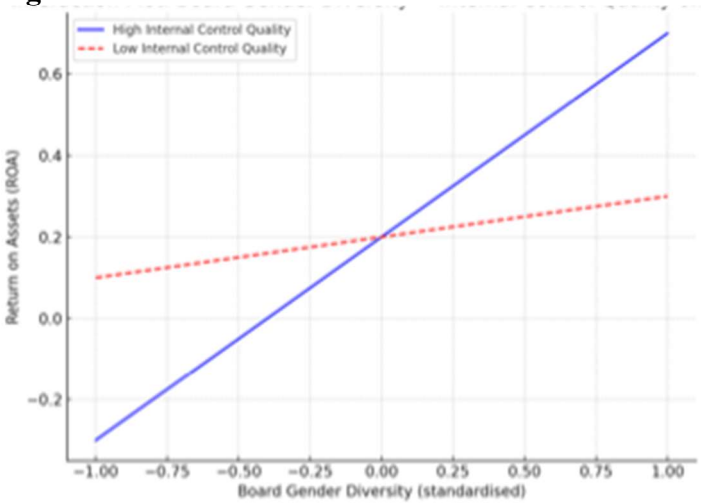
4.3 Moderation Effects and Interaction Interpretation

Significant interaction effects were observed for both moderators. Simple slope analyses revealed that at high levels of internal control quality (+1 SD), the positive effect of board gender diversity

on ROA was significantly stronger (β = 0.41, p < 0.001) than at low levels (-1 SD; β = 0.15, p = 0.089).
Similarly, the interaction between board gender diversity and sustainability commitment was significant. Firms with strong sustainability commitment (+1 SD) demonstrated a stronger relationship (β = 0.38, p < 0.001) compared to firms with low commitment (β = 0.11, p = 0.144).

The interaction patterns are graphically represented in Figure 1 and Figure 2.

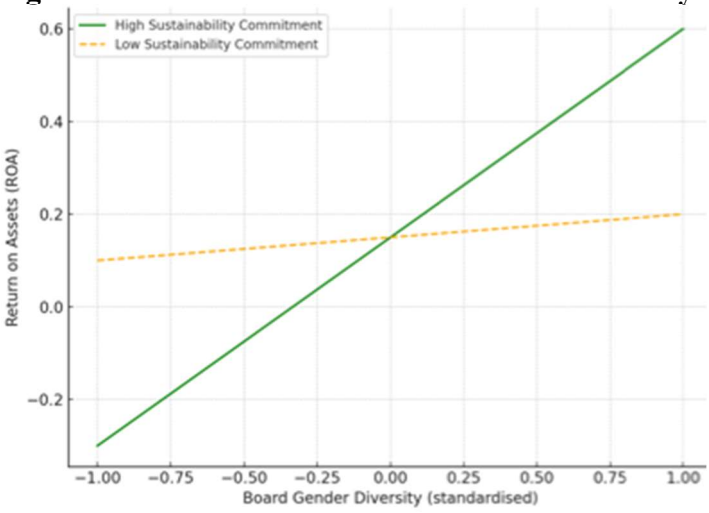
Figure 1: Interaction Plot for BGD × Internal Control Quality on ROA



Source: Figure created by the authors

At high levels of internal control quality, the positive effect of board gender diversity on ROA is stronger and statistically significant. At low levels of internal control quality, the effect is weaker and marginal.

Figure 2: Interaction Plot for BGD × Sustainability Commitment on ROA



Source: Figure created by the authors

At high levels of sustainability commitment, the positive effect of board gender diversity on ROA is strong and significant. At low levels of sustainability commitment, board gender diversity has a weak and non-significant relationship with ROA.

4.4 Robustness Checks

Three robustness tests were performed to validate the findings. First, all analyses were repeated with bootstrapped standard errors (5,000 samples); key coefficients remained stable and significant. Second, models excluding outliers beyond ±3 standard deviations were re-estimated, and the main and interaction effects remained statistically significant. Third, a categorical operationalisation of board gender diversity (above or below 30 per cent female representation) was tested; findings remained consistent with the continuous operationalisation, reaffirming robustness (Ellili, 2024).

In sum the evidence strongly supports the theoretical model developed. Board gender diversity significantly improves profitability and stability in Portuguese SMEs, and these benefits are magnified under conditions of strong internal controls and sustainability orientation.

5. Discussion and Implications

The findings of this study strongly affirm the importance of board gender diversity in shaping the financial performance and stability of Portuguese SMEs. In line with resource dependence theory (Salancik and Pfeffer, 1978), the results confirm that gender-diverse boards act as strategic assets, enhancing a firm's capacity to access external resources, improve legitimacy, and strengthen governance. These insights extend prior research predominantly focused on large corporations (Campbell and Mínguez-Vera, 2008; Erhardt et al., 2003), demonstrating that the advantages of board diversity are not confined to larger, more formal organisations but are equally critical for SMEs.

The significant positive effect of board gender diversity on Return on Assets (ROA) and the negative association with earnings volatility highlight that diversity contributes both to profitability and to financial resilience. This dual contribution supports calls by Skare et al. (2025) and Botella-Carrubi et al. (2025) for firms to view diversity as a core strategic resource, rather than merely a compliance requirement.

Furthermore, the moderating roles of internal control quality and sustainability commitment reinforce that board diversity benefits are context dependent. High-quality internal governance structures enable firms to capitalise on the diverse perspectives and skills of their directors, translating resource access into concrete financial outcomes (Aziz and Cek, 2025; Shakil et al., 2024). Similarly, a strong commitment to sustainability initiatives enhances the reputation and strategic positioning of gender-diverse firms, amplifying the performance gains associated with board composition (Chang et al., 2024; Ellili, 2024).

5.1 Theoretical Contributions

This research makes several important theoretical contributions. First, it extends resource dependence theory into the SME context, demonstrating that board composition exerts a powerful influence even in smaller, resource-constrained firms. Previous research has primarily tested resource dependence theory among large, well-capitalised firms (Campbell and Mínguez-Vera, 2008; Erhardt et al., 2003). By showing that SMEs also rely on board diversity to manage external dependencies, this study broadens the explanatory scope of the theory.

Second, this study advances the understanding of conditional effects in board governance research. While earlier work has established the positive effects of board diversity on corporate outcomes (Hosny and Elgharbawy, 2022; Chang et al., 2024), few studies have examined how internal organisational characteristics condition these effects. The findings show that without adequate internal control quality and a strong sustainability orientation, the benefits of diversity may not fully materialise, supporting calls by Kahloul et al. (2022) and Jiang et al. (2021) to investigate multi-level governance mechanisms.

Third, the study enriches diversity research by confirming that the advantages of gender-diverse boards extend beyond immediate financial returns to include reduced earnings volatility. Financial resilience, particularly stability across business cycles, is an underexplored dimension of governance effectiveness (Bel-Oms et al., 2024; Futre and Crespo, 2025). This study shows that diverse boards not only drive growth but also provide a form of strategic risk management, a finding highly relevant to the SME sector.

Lastly, the study responds to recent calls to integrate entrepreneurial dynamics into governance research (Alalwan et al., 2024; Pacheco et al., 2025), by highlighting how board diversity interacts with sustainability and governance processes to shape strategic agility and firm outcomes.

5.2 Managerial Implications

For SME managers and board members, the findings provide strong practical guidance. Appointing women to boards should be viewed as a strategic investment rather than as a symbolic gesture. Firms with diverse boards are better positioned to secure financing, attract partners, and strengthen stakeholder relationships (Marquez-Cardenas et al., 2022; Hosny and Elgharbawy, 2022).

Importantly, diversity initiatives must be coupled with investments in internal governance structures. Strong internal controls magnify the ability of diverse boards to contribute meaningfully to decision-making, financial oversight, and strategic direction (Aziz and Cek, 2025; Shakil et al., 2024). SME managers should prioritise implementing formal policies, clear segregation of duties, and regular internal audits to fully leverage board diversity.

Sustainability commitment should also be embedded into the strategic agenda. Firms with credible ESG initiatives not only enhance their reputational capital but also create synergies with gender diversity, leading to superior financial outcomes (Chang et al., 2024; Ellili, 2024). Managers must therefore ensure that sustainability is not relegated to peripheral activities but is integrated into core business strategy.

Finally, training and mentorship programmes to prepare women for board roles should be institutionalised within SMEs, reinforcing findings by Skare et al. (2025) and Culebro-Martínez et al. (2024) regarding the need for pipeline development.

5.3 Policy Implications (Expanded)

The results have important implications for policymakers. While legislative quotas can increase female representation, more nuanced policy instruments are needed to ensure that diversity translates into performance gains. Policymakers should consider supporting SME governance capacity-building programmes, including director training initiatives focusing on internal control systems, strategic sustainability management, and board effectiveness (Alalwan et al., 2024; Amadasun and Mutezo, 2025).

Moreover, SME-focused funding and grant schemes could include board diversity and governance quality as eligibility criteria, encouraging firms to institutionalise these practices voluntarily rather

than merely to comply with quotas (Wesseh et al., 2024). Initiatives to link SMEs with sustainability certifications could also incentivise firms to develop governance frameworks that fully capitalise on board diversity.

These findings contribute to a growing policy discourse highlighting that governance quality and diversity must be treated as interconnected pillars of SME competitiveness (Yogatama et al., 2024).

5.4 Limitations and Future Research Directions

While the study offers significant insights, it is bounded by three principal constraints: single-country setting (Portugal), self-reported survey data, and cross-sectional design. First, the cross-sectional design limits the ability to infer causality. Future research should adopt longitudinal or panel data designs to explore how changes in board composition over time influence performance trajectories (Pacheco et al., 2025).

Second, although efforts were made to mitigate common method bias, future studies could complement survey data with objective secondary financial data or triangulate using qualitative interviews with board members (Abiad et al., 2025). Such approaches would enhance construct validity and reduce reliance on self-reports.

Third, while this study focused on gender diversity, other dimensions of board heterogeneity, including age, educational background, ethnicity, and tenure diversity, deserve attention. Intersectionality approaches could offer richer insights into how multiple diversity dimensions interact to shape firm outcomes (Ji et al., 2024; Hohl et al., 2021).

Finally, future research should explore whether the conditional mechanisms identified here—internal control quality and sustainability commitment—operate differently across institutional contexts, industries, and firm sizes. Comparative studies across different European regions would be particularly valuable to understand context-specific dynamics. Longitudinal, multi-source evidence would sharpen causal inference and broaden the generalisability of these findings.

6. Conclusion

This study set out to investigate the impact of board gender diversity on the financial performance and stability of Portuguese SMEs, with particular attention to the moderating roles of internal control quality and sustainability commitment. Drawing on resource dependence theory, the findings offer robust evidence that board composition plays a critical role in shaping firm outcomes even in resource-constrained, small business environments.

The results show that gender-diverse boards significantly enhance profitability, as measured by Return on Assets (ROA), and promote greater earnings stability over time. These findings align with and extend prior research on large corporations, confirming that the strategic advantages of board diversity are equally vital for SMEs (Salancik and Pfeffer, 1978; Campbell and Mínguez-Vera, 2008). Importantly, the benefits of diversity were shown to be contingent on internal firm characteristics. Firms with stronger internal controls and greater sustainability commitment were better able to leverage the strategic advantages provided by diverse boards, reinforcing the growing consensus that diversity must be supported by organisational infrastructures to fully realise its potential (Aziz and Cek, 2025; Shakil et al., 2024).

This research contributes to theoretical developments by extending resource dependence theory to smaller firms and by demonstrating the conditional nature of diversity's impact. It confirms that diversity not only enhances access to resources but also serves as a mechanism for risk mitigation

and performance stability, an insight particularly valuable in SME contexts where exposure to financial shocks is high.

For managers, the findings highlight that board diversity should not be treated as symbolic but as a strategic imperative. Investments in governance structures and sustainability orientation are necessary complements to diversity initiatives. For policymakers, the results advocate for policies that go beyond quotas, suggesting the need for broader governance capacity-building efforts among SMEs.

Future research is encouraged to build on these insights by employing longitudinal designs, expanding diversity dimensions, and exploring context-specific moderating mechanisms. Such work will further deepen our understanding of how board composition shapes firm performance across diverse organisational landscapes.

In fine, board gender diversity represents not merely a social imperative but a strategic resource. In a dynamic and resource-constrained world, SMEs that embrace diversity, underpinned by strong governance and sustainability practices, are better positioned to achieve resilience, growth and long-term success.

Declarations

All authors declare that they have no conflicts of interest.

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