Board Gender Diversity and Financial Performance in State-Owned Enterprises: Does Firm Age Matter?

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Abstract

This study examines the association between board gender diversity and financial performance in state-owned enterprises in Zimbabwe and investigates whether firm age moderates this relationship. The study employs a quantitative archival design using longitudinal data from 12 commercially oriented Zimbabwean state-owned enterprises (SOEs) over the period 2015–2021, generating 84 firm-year observations. The study is grounded in agency theory and resource dependence theory, which suggest that female directors may strengthen monitoring, accountability, strategic deliberation, and access to valuable resources. Financial performance is measured by return on assets, while board gender diversity is measured as the proportion of female directors on the board. Firm age is examined as a moderating variable, with board size, non-executive director representation, political interference, firm size and leverage included as controls. In response to the longitudinal structure of the dataset, the revised analysis explicitly recognises the repeated observations within firms. It provides a clearer discussion of firm-specific heterogeneity, year effects, and dependence across observations. Although the result is statistically significant at the 10% level, it does not meet the conventional 5% significance threshold. The findings indicate a positive association between board gender diversity and financial performance. The interaction between board gender diversity and firm age is negative and statistically marginal at the 10% level, but it does not meet the conventional 5% threshold; therefore, the moderation evidence is interpreted as weak or suggestive rather than conclusive. This study contributes to the governance literature by extending board gender diversity research to SOEs in an emerging-market setting and by considering firm age as a potential organisational boundary condition.

Keywords: ***Board gender diversity; state-owned enterprises; financial performance; firm age; emerging markets; Zimbabwe***

1. Introduction

Board gender diversity has emerged as a central issue in contemporary corporate governance research because board composition increasingly determines the quality of monitoring, strategic judgement and institutional accountability expected from modern organisations (OECD, 2024). Across both developed and emerging economies, regulators have increasingly encouraged the appointment of female directors on the assumption that gender-diverse boards are more independent, more vigilant and better equipped to respond to complex stakeholder demands. This policy momentum reflects a broader governance expectation that female board participation can strengthen oversight quality, improve transparency and ultimately enhance organisational performance. (Laique et al., 2023; Amo et al., 2025)

Consistent with this view, a substantial body of accounting literature reports that female directors contribute positively to governance outcomes through stronger monitoring discipline, improved financial reporting quality, enhanced disclosure transparency and more balanced board deliberation. Prior studies show that women on boards are associated with lower managerial opportunism, higher earnings quality, and superior strategic responsiveness because diverse boards are less susceptible to homogeneous thinking and weak internal challenge (Adams and Ferreira, 2009; Post and Byron, 2015; Gul et al., 2011; Srinidhi et al., 2011). Nevertheless, despite the rapid growth of this literature, empirical evidence regarding the board gender diversity–performance relationship remains inconclusive. While some studies document positive financial consequences, others report weak, insignificant, or context-dependent effects, suggesting that the economic value of female board representation may not be universally transferable across all institutional settings (Torchia and Solarino, 2026).

An important source of these conflicting results can be attributed to the empirical orientation of past research on the subject matter. Previous studies have been primarily conducted on publicly traded corporations in the private sector with market-oriented corporate governance frameworks. Generally, such corporations tend to exhibit higher shareholder pressure, clearer profit maximization goals, and better institutional monitoring infrastructure. Relatively limited knowledge has been accumulated so far about how state-owned enterprises would perform in terms of governance benefits in the context of board gender diversity. As opposed to private corporations, state-owned enterprises operate in the framework of hybrid governance, requiring directors to take into account commercial objectives, political controls, administrative bureaucracy, and policy considerations. All these governance challenges are likely to have considerable implications for the efficiency of traditional board mechanisms, including gender diversity (OECD, 2024).

The exclusion of state-owned enterprises from the existing board diversity literature is also of theoretical significance. The efficacy of governance in public-sector entities tends to be limited by political appointments, bureaucratic inefficiencies, institutionally induced rigidities, and lack of manager accountability. Within this context, female board members could serve as an additional monitoring and ethics control mechanism, or their impact could be undermined by established bureaucratic processes restricting board performance. Therefore, the assumptions made in the existing private-sector board diversity literature cannot be applied automatically to politically affiliated public companies, especially in emerging countries with fragile institutions (Moreno-Enguix et al., 2026).

Beyond institutional settings, another major limitation in prior research is the tendency to treat board gender diversity as a uniformly effective governance mechanism while paying limited attention to organisational conditions that may shape its performance consequences. Recent governance scholarship increasingly suggests that board structures do not operate in isolation; rather, their effectiveness depends on the receptiveness and adaptability of the organisations within which they function. One particularly underexplored organisational condition is firm age. Older firms tend to exhibit accumulated routines, deeper hierarchical layers, stronger structural inertia and greater resistance to strategic renewal. Such maturity may reduce the board's ability to convert diverse perspectives into timely strategic action, thereby weakening the potential financial gains associated with board diversity. Despite its conceptual relevance, firm age has received minimal empirical attention as a boundary condition in the board diversity literature (Laique et al., 2023).

This study addresses these gaps by examining the association between board gender diversity and financial performance in Zimbabwean state-owned enterprises while further testing whether firm age moderates this relationship. Zimbabwe provides an especially relevant empirical context because many of its SOEs continue to operate under persistent governance challenges, including political intervention, bureaucratic inefficiencies, weak accountability structures, and constrained commercial performance. This institutional environment offers a robust setting for assessing whether the financial relevance of female board participation survives under governance conditions that differ substantially from those assumed in mainstream private-sector research (Kaunda and Pelser, 2022).

This study contributes to the accounting and corporate governance literature in three principal ways. First, it extends prior board diversity evidence beyond the dominant setting of private listed firms by providing empirical evidence

from SOEs in an emerging economy. Second, it introduces firm age as an organisational contingency that helps explain why prior studies report inconsistent financial outcomes from female board representation. Third, by jointly examining board diversity and organisational maturity within a politically embedded governance setting, the study offers a more context-sensitive explanation of how board composition shapes financial performance under constrained institutional conditions. The remainder of this paper is structured as follows. Section 2 reviews the materials and methods. Section 3 presents the results. Section 4 concludes with the study's implications, limitations and directions for future research.

2. Materials and Methods

Board gender diversity has received sustained attention in the accounting, finance and corporate governance literature due to the growing recognition that board composition materially shapes monitoring quality, strategic judgement and organisational accountability. The increasing inclusion of female directors has been widely promoted not merely as a social equity initiative, but as a substantive governance reform capable of improving board effectiveness and strengthening firm-level outcomes. Across multiple institutional settings, female board participation has been associated with more diligent oversight, stronger ethical sensitivity, broader stakeholder orientation and greater resistance to managerial opportunism, while also improving board legitimacy and decision quality through enhanced demographic heterogeneity (Carter et al., 2010). This governance-enhancing perspective is further reinforced by the systematic review of Post and Byron (2015), which concludes that board diversity frequently improves governance quality when supported by effective institutional monitoring structures (Torchia and Solarino, 2026).

Gender-diverse boards have been linked to improved earnings quality, stronger disclosure transparency, lower incidence of earnings manipulation and more informative reporting environments, suggesting that female directors contribute meaningfully to both strategic governance and financial accountability processes (Gul et al., 2011; Srinidhi et al., 2011; Arun et al., 2015). However, despite these favourable theoretical expectations, the empirical relationship between board gender diversity and firm performance remains far from settled. Recent studies continue to document inconsistent findings, with some reporting positive financial consequences while others identify weak, insignificant or highly context-dependent associations. Emerging evidence suggests that the governance value of female board participation may vary substantially according to institutional quality, regulatory discipline, board power structures and organisational readiness for strategic change (Brahma et al., 2021; Pham et al., 2025). These inconsistencies indicate that board gender diversity should not be treated as a universally homogeneous governance mechanism, but rather as a contingent board attribute whose financial consequences are shaped by the context within which the board operates.

A particularly important contextual omission in prior literature concerns SOEs. Most board diversity studies have focused on publicly listed private-sector firms operating in shareholder-oriented governance systems. In such firms, boards are primarily designed to protect investor interests, maximise profitability and discipline managerial behaviour under market scrutiny. SOEs, however, are governed by fundamentally different institutional logics (OECD, 2024). Their boards must balance commercial objectives with political mandates, public accountability expectations and bureaucratic administrative controls. Board appointments are often influenced by state priorities, and managerial incentives are frequently less aligned with profit-maximisation compared with private corporations. As a result, the effectiveness of conventional governance mechanisms may differ materially in this setting.

This distinction is particularly salient in emerging economies where institutional enforcement remains weak and political intervention is pervasive. Zimbabwean SOEs continue to face substantial governance challenges, including bureaucratic inefficiencies, politically connected appointments, weak financial accountability and constrained strategic autonomy. This is consistent with recent governance assessments showing that developing-economy SOEs continue to suffer from strategic inefficiency and weak accountability structures (Kaunda and Pelser, 2022). Such conditions create an especially demanding environment for board effectiveness. Within this context, female directors may provide additional monitoring vigilance, broader stakeholder legitimacy and stronger ethical oversight that partially offset governance weaknesses (Moreno-Enguix et al., 2026).

2.1 Board gender diversity and financial performance

The positive governance role of board gender diversity can be explained primarily through agency theory and resource dependence theory. Agency theory posits that boards serve as internal control mechanisms intended to reduce managerial self-interest, strengthen monitoring discipline and align executive behaviour with organisational objectives (Jensen and Meckling, 1976). In organisations characterised by weak accountability structures, diverse boards are often

viewed as more effective monitors because heterogeneous members are less likely to engage in passive consensus and more likely to challenge managerial decisions. Female directors, in particular, have been associated with stronger attendance, greater committee diligence, heightened ethical concern and more intensive oversight behaviour, thereby improving governance vigilance and reducing agency inefficiencies.

This agency-based argument is especially relevant in SOEs, where managerial opportunism may be intensified by diffuse ownership, political patronage and limited shareholder pressure. Under such conditions, female board participation may strengthen internal accountability by introducing more independent scrutiny and reducing the tendency toward unchecked managerial discretion (Maxfield and Wang, 2024).

Resource dependence theory offers a complementary explanation (Pfeffer and Salancik, 1978). Beyond monitoring, boards also function as providers of strategic resources, legitimacy, external linkages and reputational capital. Female directors may broaden access to professional networks, enhance stakeholder trust and contribute alternative cognitive perspectives that improve board deliberation and organisational problem-solving. In politically sensitive public-sector entities, these reputational and relational resources may be particularly valuable because governance credibility and stakeholder confidence often influence access to institutional support, strategic partnerships and public legitimacy. Empirical evidence broadly supports these theoretical expectations.

Studies consistently report that gender-diverse boards are associated with stronger financial reporting discipline, improved governance transparency and superior organisational outcomes, particularly where monitoring deficiencies are more pronounced (Terjesen et al., 2016; Brahma et al., 2021; Ojeyinka, 2025). Given the governance vulnerabilities commonly observed in Zimbabwean SOEs, the inclusion of female directors is expected to provide stronger strategic challenge, improved oversight quality and enhanced financial accountability. Accordingly, this study proposes the following hypothesis:

H1: Board gender diversity is positively associated with the financial performance of SOEs in Zimbabwe.

2.2 Moderating role of firm age

Although board gender diversity may enhance monitoring and strategic oversight, recent governance literature increasingly recognises that board mechanisms do not operate independently of organisational context. The extent to which diverse boards can translate broader perspectives into measurable performance improvements depends partly on the adaptability, openness and strategic responsiveness of the firms they govern. One particularly relevant but underexplored organisational condition is firm age.

Firm age reflects the maturity of organisational routines, the depth of hierarchical structures and the degree of embedded institutional practices accumulated over time (Bakker and Josefy, 2018). Older firms often exhibit stronger bureaucratic layering, more rigid operating procedures and greater resistance to strategic renewal. Such structural inertia can constrain organisational responsiveness, slow decision-making and weaken the implementation of new board-driven initiatives. In contrast, younger firms tend to be more flexible, more receptive to innovation and more responsive to changes in strategic direction.

This distinction is theoretically important because the strategic contributions of female directors such as broader perspectives, stronger monitoring and alternative viewpoints, require an organisational environment capable of absorbing and operationalising those inputs. In mature enterprises characterised by entrenched routines and bureaucratic rigidity, even effective board oversight may not easily translate into financial improvement because managerial systems are slower to adapt. Thus, while board gender diversity may remain governance-enhancing in principle, its observable financial benefits may diminish as organisational age increases.

This moderating logic is especially relevant in SOEs, many of which are historically established entities with deeply institutionalised procedures, administrative hierarchies and longstanding political influence. Zimbabwean SOEs often operate within mature bureaucratic systems where strategic transformation is slow and board-level reforms face implementation barriers. Under such conditions, the governance benefits generated by female board participation may be partially muted by organisational inertia. Accordingly, this study advances the following moderating hypothesis:

H2: Firm age negatively moderates the relationship between board gender diversity and the financial performance of SOEs in Zimbabwe.

Taken together, the two hypotheses suggest that the financial consequences of board gender diversity are expected to depend not only on the presence of female directors, but also on the organisational maturity of the enterprise within which board decisions are implemented. The study therefore conceptualises firm performance as the outcome of both board-level governance quality and organisational-level receptiveness.

2.3 Conceptual Framework

Figure 1 presents the integrated conceptual framework. The conceptual model proposes that board gender diversity functions as the principal governance predictor of financial performance, while firm age operates as an organisational contingency that may strengthen or weaken this relationship. Board-level controls and firm-level controls are incorporated to isolate alternative governance and financial influences on return on assets. The framework therefore allows this study to examine not only whether female board representation is financially relevant, but also whether this governance effect remains stable across firms at different stages of organisational maturity.

The proposed framework therefore recognises that financial performance is shaped not only by board composition but also by the organisational environment within which governance mechanism function. By jointly examining board gender diversity and firm age, this study offers a more contingent and institutionally sensitive understanding of governance effectiveness in emerging-market SOEs.

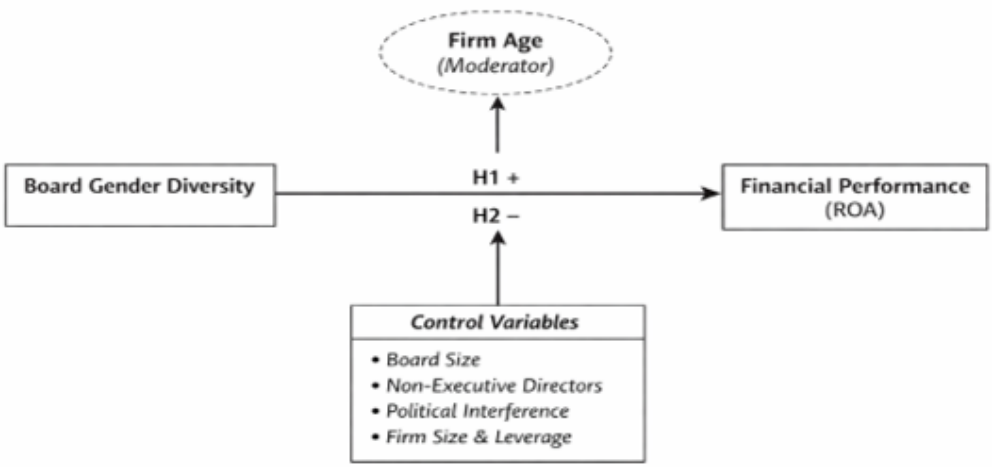


Figure 1: Study Framework

2.4 Sample selection and data source

This study adopts a quantitative archival research design to examine the association between board gender diversity and financial performance among commercially oriented SOEs in Zimbabwe. The empirical setting is appropriate because Zimbabwean SOEs operate within governance environments characterised by political oversight, bureaucratic inefficiencies and persistent accountability challenges. The population comprised 29 commercially oriented SOEs, with 12 SOEs with sufficiently complete information for the full 2015–2021 period were retained, resulting in a balanced panel of 84 firm-year observations.

Financial data were primarily extracted from annual reports and the Zimbabwe Office of the Auditor General's published reports, while board composition and governance variables were manually compiled from directors' profiles and board disclosures contained in the corresponding annual statements. The complete-case sampling approach is acknowledged as a potential source of selection bias because SOEs with complete reporting records may differ systematically from excluded entities. Accordingly, the findings should not be generalised automatically to all Zimbabwean SOEs. The longitudinal structure is explicitly recognised in the revised methodological discussion because the 84 observations represent repeated yearly observations of the same 12 enterprises (Moreno-Enguix et al., 2026).

Financial data were primarily extracted from annual reports and the Zimbabwe Office of the Auditor General's published reports, while board composition and governance variables were manually compiled from directors' profiles and board disclosures contained in the corresponding annual statements. The use of multi-year observations enables the study to capture both cross-sectional variation in board characteristics and changes in firm financial outcomes over time. At the same time, repeated observations from the same enterprise cannot automatically be treated as statistically independent (Baltagi, 2021).

2.5 Research approach

This study is grounded in a positivist epistemological orientation, which is appropriate where governance relationships are examined through objectively measurable archival indicators. A quantitative explanatory approach was employed because the study seeks to estimate both direct and conditional associations between board composition variables and firm-level financial outcomes. Secondary data analysis is particularly suitable in governance research because board characteristics, financial performance indicators and organisational controls are observable archival constructs that can be systematically tracked over time. The use of audited financial statements and official governance disclosures further enhances objectivity, reduces respondent bias and improves empirical reliability. Given that the study examines historical governance-performance relationships rather than perceptual attitudes, archival secondary analysis provides the most appropriate methodological basis.

2.6 Variable measurements

Table 1 presents the measurement of variables used in this study. The dependent variable in this study is financial performance, proxied by ROA, measured as profit before tax divided by total assets. ROA is widely used in governance and accounting research because it captures management's efficiency in converting asset resources into operating returns and provides a comparable profitability indicator across firms.

Table 1: Variable Measurement

Dependent Variable	Acronym	Definition
Return on assets	ROA	The ratio of profit before taxes to total assets (Khan and Abdul, 2019)
Independent Variable		
Board Gender Diversity Ratio	BGDR	Percentage of female directors on the board to the total number on the board (Khan and Abdul, 2019)
Board-level Controls Board Size Non-Executive Directors Political Interference	 BODS NED PI	 Total number of board of directors The percentage of external NEDs sitting on the board to the total directors on the board (Khan and Abdul, 2019) % civil service directors/retired bureaucrats from the public sector or politically connected/exposed directors divided by the total number of board (Naz et al., 2022)
Firm-level Controls Firm Size Leverage	 SIZE LEV	 The natural log of the total assets of the company (Huynh et al., 2022) Total debt to the total assets (Khan and Abdul, 2019; Huynh et al., 2022)
Moderating Variable Firm Age	 AGE	 The number of years since the company was incorporated (Huynh et al., 2022)

Although SOEs may also pursue broader socio-political objectives, ROA remains an appropriate indicator in the present study because the sampled entities are commercially oriented enterprises expected to maintain financial sustainability alongside public mandates. The principal independent variable is BGDR, measured as the proportion of female directors relative to total board membership. This ratio-based measure captures the extent of female representation on the board and is consistent with prior board diversity studies examining governance inclusiveness (Moreno-Enguix et al., 2026; Pham et al., 2025).

To minimise omitted variable bias, several board-level and firm-level controls are incorporated. At the board level, board size (BODS) is measured as the total number of directors serving on the board; non-executive directors (NED) is measured as the proportion of independent or external directors relative to total board size; and political interference (PI) is proxied by the proportion of civil servants, retired bureaucrats or politically connected directors on the board.

On the firm level, firm size (SIZE) is defined as the natural logarithm of the total assets of the firm, whereas financial leverage (LEV) is calculated as the total debt/total assets ratio (Carter et al., 2010; Huynh et al., 2022). The moderating variable firm age (AGE) is measured using the natural logarithm of the number of years the firm has been incorporated. The use of logarithms helps eliminate any skewness as well as normalise the measurement scale. Logarithms can be used in measuring the maturity of the organisation (Bakker & Josefy, 2018; Rossi, 2016).

2.7 Analytical Technique

This study employed partial least squares structural equation modelling (PLS-SEM) to examine the hypothesised associations between board gender diversity, firm age and financial performance. PLS-SEM was used to estimate the direct relationship between board gender diversity and financial performance and the interaction effect between firm age and board gender diversity. The analysis focuses on directly observed archival measures, including ROA, board gender diversity, firm age and the control variables. Because these are single observed measures rather than latent constructs, the methodological advantages of SEM related to latent-variable measurement are limited. Accordingly, PLS-SEM is used here as an analytical approach for estimating the hypothesised structural associations, rather than as a means of resolving the longitudinal dependence inherent in the dataset.

The empirical model incorporates the longitudinal nature of the dataset, which comprises 84 firm-year observations from 12 SOEs over the period 2015–2021. As the observations are drawn repeatedly from the same enterprises over time, the possibility of firm-specific heterogeneity, year effects and within-firm dependence is recognised. The PLS-SEM estimates are therefore interpreted cautiously as associations within the observed sample and are not treated as a substitute for a formal panel-data estimator. A conventional panel regression with appropriate treatment of firm effects, year effects and within-firm dependence would provide a useful complementary analysis.

The significance of the PLS-SEM estimates was assessed using bootstrapping with 5,000 resamples, following established recommendations for evaluating the stability and statistical significance of estimated path coefficients (Gudergan et al., 2025; Hair et al., 2021). The structural model includes the direct relationship between board gender diversity and financial performance, together with the interaction term between firm age and board gender diversity. The moderation effect is assessed through the coefficient of the AGE × BGDR interaction term. A negative interaction coefficient indicates that the positive association between board gender diversity and financial performance decreases as firm age increases.

The hypotheses are therefore examined in terms of associations rather than causal effects. In particular, a statistically significant positive coefficient for BGDR indicates a positive association between board gender diversity and ROA, whereas a negative coefficient for the AGE × BGDR interaction indicates that firm age weakens this association. Consistent with the nature of the research design and the use of archival observational data, the estimated relationships are not interpreted as establishing causal effects (Hair et al., 2021).

3. Results

3.1 Descriptive statistics

Table 2 reports the descriptive statistics for all variables included in the structural model. The results indicate substantial heterogeneity in both governance characteristics and financial outcomes across the sampled Zimbabwean SOEs, thereby supporting the suitability of multivariate analysis. ROA, which serves as the proxy for financial performance, records a mean value of 0.029 with a relatively wide dispersion, ranging from –0.943 to 1.154. This variation reflects the uneven profitability conditions across firms and years, which is consistent with the unstable operating environments commonly observed in emerging-market public enterprises. BGDR records a mean of 0.315, indicating that women constitute approximately 31.5 per cent of board membership on average. Although this suggests some progress in female board inclusion, the observed minimum of zero confirms that several firm-year observations still exhibit complete absence of female representation (Amo et al., 2025).

Table 2: Descriptive Statistics

Variable	Mean	Observed min	Observed max	Standard deviation	Number observations used
ROA	0.029	-0.943	1.154	0.331	84.000
BODS	8.107	5.000	13.000	1.596	84.000
NED	0.858	0.600	1.143	0.060	84.000
PI	0.260	0.000	0.667	0.140	84.000
LEV	0.658	-0.905	2.078	0.535	84.000
SIZE	8.877	6.042	11.753	1.192	84.000
AGE	1.408	0.602	2.107	0.301	84.000
BGDR	0.315	0.000	0.857	0.144	84.000

The average number of board members is 8.107, which shows that there are intermediate-sized boards in terms of size among the firms under study. The ratio of non-executive directors has an average value of 0.858, which shows that the external presence of directors in the boardroom of a company is quite large on average. Political influence has a mean value of 0.260, and this means that politically influenced directors represent a significant part of the board. Leverage has an average value of 0.658, and this shows that the companies have considerable levels of debt, whereas firm size and logged firm age show enough variation for proper control estimation (OECD, 2024). The descriptive statistics indicate sufficient variation across the study variables, providing an appropriate basis for the subsequent correlation and structural model analyses.

Overall, the descriptive evidence confirms that Zimbabwean SOEs are characterised by substantial differences in governance arrangements, financial structures and organisational maturity, thereby justifying further structural assessment of how these conditions interact with board gender diversity to influence financial performance.

3.2 Pearson Correlation Matrix

Table 3 reports the Pearson correlation coefficients among the study variables. The results provide preliminary support for the hypothesised relationships. Board gender diversity is positively correlated with financial performance, while leverage and board size exhibit negative bivariate associations with ROA.

Table 3: Pearson correlation matrix of study variables

Variables	ROA	BGDR	BODS	NED	PI	LEV	AGE	SIZE
ROA	1.000							
BGDR	0.318**	1.000						
BODS	-0.241*	0.196	1.000					
NED	0.087	0.142	0.221*	1.000				
PI	0.336**	0.184	-0.105	0.093	1.000			
LEV	-0.287*	-0.118	0.074	-0.062	0.128	1.000		
AGE	-0.149	-0.173	0.205	0.066	0.114	0.091	1.000	
SIZE	0.041	0.097	0.158	0.103	0.146	0.266*	0.233*	1.000

Note: **p < 0.05; *p < 0.10.

Political interference also shows a positive simple correlation with firm performance. Importantly, the intercorrelations among the explanatory variables remain generally low to moderate, suggesting no immediate concern regarding severe multicollinearity prior to structural estimation.

3.3 Collinearity assessment

Prior to structural estimation, collinearity diagnostics were conducted using variance inflation factors (VIF) to ensure that the predictor variables do not exhibit problematic multicollinearity. As reported in Table 4, all VIF values range from 1.029 to 1.985, remaining comfortably below the commonly accepted threshold of 2.5. This indicates that the explanatory variables are sufficiently distinct and that no individual predictor exerts undue inflation on standard error estimation. The absence of serious multicollinearity supports the reliability and interpretability of the subsequent structural path coefficients (Hair et al., 2021).

Table 4: Collinearity Statistics (VIF)- Inner Model – List

Variable	VIF
AGE	1.505
BGDR	1.400
BODS	1.392
LEV	1.029
NED	1.317
PI	1.593
SIZE	1.114
AGE x BGDR	1.985

3.4 Explanatory power and effect size assessment

The structural model yields an R^2 value of 0.276 for ROA, indicating that the combined governance and firm-level predictors explain 27.6 per cent of the variance in financial performance among the sampled Zimbabwean SOEs. Although moderate in magnitude, this level of explanatory power is considered acceptable in corporate governance research, where profitability is typically influenced by numerous institutional, managerial and market-related factors beyond board characteristics alone.

Table 5: R^2 and predictor effect size (f^2) statistics

Variable	f-square	Effect
AGE -> ROA	0.032	Weak
BGDR -> ROA	0.121	Moderate
BODS -> ROA	0.081	Weak
LEV -> ROA	0.079	Weak
NED -> ROA	0.046	Weak
PI -> ROA	0.124	Moderate
SIZE -> ROA	0.000	Weak
AGE x BGDR -> ROA	0.029	Weak

Note: R^2 for ROA = 0.276.

In addition to overall explanatory power, Cohen's f^2 statistics were examined to assess the relative contribution of each exogenous construct. As presented in Table 5, board gender diversity ratio and political interference exhibit the strongest individual explanatory influence, while the remaining predictors demonstrate weak but non-negligible effects on ROA (Hair et al., 2021).

3.5 Structural model results

Table 6 reports the structural path coefficients and corresponding hypothesis testing outcomes derived from the PLS-SEM estimation. The findings reveal that board gender diversity ratio is positively and significantly associated with return on assets ($\beta = 0.350$, $p = 0.027$), thereby supporting H1 in the PLS-SEM analysis. This result indicates that higher female representation on boards is associated with stronger financial performance among the sampled Zimbabwean SOEs. Since the data comprise repeated observations from the same enterprises, this estimate should be interpreted as an association and not as evidence of causality.

From an agency theory perspective, this finding suggests that female directors may strengthen internal monitoring discipline, improve accountability vigilance and provide greater scrutiny over managerial decision-making in organisations where conventional governance enforcement is often weak. Zimbabwean SOEs frequently operate under diffuse ownership incentives and bureaucratic oversight limitations, conditions under which stronger board challenge becomes especially valuable. The positive BGDR coefficient therefore implies that female board participation may partially compensate for governance deficiencies by strengthening board attentiveness and reducing passive managerial insulation (Maxfield and Wang, 2024).

Table 6: Structural path coefficients and hypothesis testing results

Structural path	β	Std. Dev.	t-value	p-value	Interpretation
BGDR → ROA	0.350	0.158	2.214	0.027	H1 Supported
BODS → ROA	-0.285	0.149	1.913	0.056	Control effect
NED → ROA	0.103	0.076	1.352	0.177	Control effect
PI → ROA	0.379	0.135	2.807	0.005	Control effect
LEV → ROA	-0.243	0.120	2.025	0.043	Control effect
AGE → ROA	-0.091	0.081	1.123	0.262	Control effect
SIZE → ROA	0.017	0.116	0.147	0.883	Control effect
AGE × BGDR → ROA	-0.164	0.085	1.932	0.053	Not conclusive at 5%

Note: Bootstrapping with 5,000 subsamples was used. Statistical significance is assessed at the 5% level ($p < 0.05$), while $p < 0.10$ is reported as marginal significance where relevant.

The result also aligns with resource dependence logic. Female directors may contribute not only stronger oversight, but also broader stakeholder legitimacy, alternative strategic viewpoints and enhanced reputational credibility. In politically sensitive public enterprises, such governance legitimacy can improve strategic confidence, institutional responsiveness and external trust, all of which may indirectly support financial sustainability. This finding is therefore consistent with prior evidence that gender-diverse boards are associated with stronger governance quality and improved economic outcomes (Terjesen et al., 2016; Saeed et al., 2024), while extending such evidence into the underexplored setting of politically constrained SOEs (Pfeffer and Salancik, 1978; Torchia and Solarino, 2026).

The moderating effect of firm age should be interpreted conservatively. The interaction term between AGE and BGDR is negative (β = –0.164, p = 0.053). Although the result is close to the conventional 5% threshold and is statistically significant at the 10% level under the significance convention reported in the original analysis, it does not satisfy the conventional 5% criterion. Therefore, the result is best described as weak or suggestive evidence that the positive BGDR–ROA association may decline as organisational age increases, rather than as conclusive confirmation of H2. This interpretation directly addresses the statistical strength of the interaction and avoids overstating the evidence (Bakker and Josefy, 2018; Singh and Sinha, 2023).

Figure 2 provides a graphical illustration of the moderating pattern. The positive slope between board gender diversity and financial performance appears steeper for enterprises with lower firm age, while the corresponding slope is flatter for older enterprises. The figure is interpreted as an illustration of the estimated interaction rather than as independent evidence of a statistically established moderation effect (Torchia and Solarino, 2026).

To facilitate interpretation of the interaction, the conditional pattern was examined at lower and higher levels of firm age. The graphical pattern is consistent with a weaker positive BGDR–ROA association among older enterprises. Nevertheless, because the interaction p-value is 0.053, this pattern should be regarded as suggestive and interpreted with appropriate caution (Bakker and Josefy, 2018).

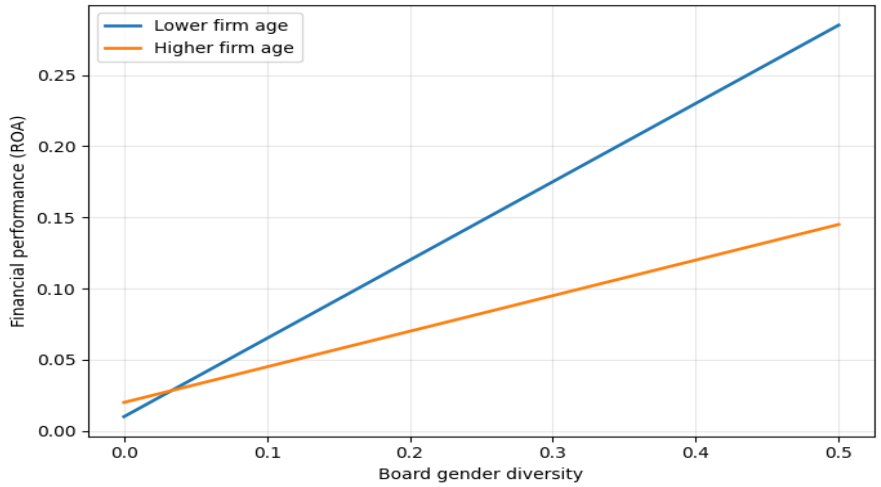


Figure 2: Moderating effect of firm age on the BGDR-ROA Relationship

Among the control variables, board size records a negative association with financial performance (β = –0.285, p = 0.056), implying that larger boards may reduce decision-making efficiency through coordination delays, diluted accountability and slower strategic consensus (Carter et al., 2010). This supports prior governance arguments that excessively large boards may sacrifice responsiveness for representational breadth. Financial leverage is likewise negatively associated with ROA (β = –0.243, p = 0.043), indicating that highly indebted SOEs experience weaker profitability due to financing pressure and reduced strategic flexibility. Interestingly, political interference records a positive and significant relationship with financial performance (β = 0.379, p = 0.005). While political influence is often theoretically associated with governance distortion, this finding may reflect the possibility that politically connected directors provide indirect access to state resources, regulatory facilitation or institutional support that partially improves firm survival and

financial resilience in resource-constrained public enterprises.

This highlights the dualistic role of political embeddedness in emerging-market public enterprises, where political ties may function both as governance constraints and strategic resource channels. This suggests that in resource-constrained developing economies, political embeddedness may generate pragmatic access advantages that partially offset the governance inefficiencies typically associated with state influence. The coefficient for non-executive directors is positive but statistically insignificant, while firm size is effectively neutral. These results imply that formal board independence and organisational scale alone are insufficient to explain profitability differences once board diversity, leverage, political embeddedness and organisational maturity are simultaneously considered (Naz et al., 2022; OECD, 2024).

The positive association observed between board gender diversity and financial performance is broadly consistent with prior international evidence that female directors strengthen board vigilance, governance transparency and strategic discipline. For instance, Brahma et al. (2021) reports that gender-diverse boards improve firm profitability through enhanced monitoring and decision quality, while Pham et al. (2025) similarly show that the financial benefits of female board representation become more visible in institutionally weaker emerging-market environments where governance discipline is otherwise limited. More specifically, the present findings also complement the recent SOEs evidence of Ojeyinka (2025), who argues that female board participation may function as an important corrective mechanism against governance inefficiencies in public-sector organisations.

The negative AGE × BGDR interaction provides suggestive evidence that the relationship between board gender diversity and financial performance may vary across firms at different lifecycle stages. Consistent with Rossi (2016), older firms often experience declining adaptability due to embedded routines and institutional rigidity. Likewise, Singh and Sinha (2023) suggest that the strategic value of diverse perspectives depends heavily on the organisation's absorptive flexibility. The present study therefore provides suggestive evidence that the association between governance-enhancing board diversity and financial performance may be weaker in mature SOEs characterised by slower strategic responsiveness (Moreno-Enguix et al., 2026; Torchia and Solarino, 2026).

3.6 Methodological considerations

As the dataset consists of repeated observations for the same 12 SOEs, the stability of the reported relationships should be interpreted with caution. Firm-specific characteristics, year-specific effects and within-firm dependence may influence the estimated associations. The reported PLS-SEM estimates therefore provide evidence of association within the observed sample, but they should not be interpreted as demonstrating robustness across alternative panel-data specifications.

4. Discussion

Taken together, the findings provide several broader governance insights into the role of board gender diversity in the financial performance of SOEs. First, the positive and statistically significant association between board gender diversity and financial performance suggests that greater female representation on SOE boards may contribute to more effective governance and better organisational outcomes.

This finding is consistent with research indicating that gender-diverse boards can contribute different perspectives, monitoring capabilities and decision-making approaches that may enhance board effectiveness (Post and Byron, 2015; Pletzer et al., 2015). More recent evidence also indicates that the relationship between board gender diversity and firm performance can be positive, although the magnitude and significance of the relationship vary across institutional and organisational settings (Pham et al., 2025; Torchia and Solarino, 2026). The finding is particularly relevant in the SOE context, where boards operate within a governance environment characterised by public ownership, multiple stakeholders and potentially competing commercial and policy objectives.

Second, the positive association between board gender diversity and ROA may indicate that female directors provide governance resources that extend beyond numerical representation. Female directors may contribute alternative perspectives to strategic discussions, strengthen monitoring and increase the diversity of expertise and experience available to the board. Recent evidence from state-owned enterprises similarly suggests that female representation can be associated with improved organisational performance, particularly when women's participation reaches a meaningful level on the board (Moreno-Enguix et al., 2026).

However, the present finding should not be interpreted as evidence that gender diversity automatically improves

performance in all SOEs. Prior literature has documented heterogeneous findings, reflecting differences in institutional environments, measures of gender diversity, firm characteristics and methodological approaches (Laique et al., 2023; Torchia and Solarino, 2026). Thus, the positive relationship observed in the present study appears to be context-dependent and should be understood within the governance and institutional characteristics of Zimbabwean SOEs.

Third, the negative coefficient for the AGE × BGDR interaction provides an additional insight into the role of organisational age. The negative direction suggests that the positive association between board gender diversity and financial performance becomes weaker as SOEs become older. One possible explanation is that older organisations may develop established governance routines, organisational practices and decision-making structures that are more resistant to changes in board composition. Such organisational embeddedness may reduce the extent to which the potential benefits of greater gender diversity are translated into improved performance.

Nevertheless, the interaction effect is only marginally significant at the 10% level ($\beta = -0.164$, $p = 0.053$) and does not meet the conventional 5% significance threshold. Therefore, the moderating role of firm age should be interpreted as suggestive rather than conclusive. This finding provides an indication that organisational age may condition the effectiveness of board gender diversity, but stronger evidence from larger samples and alternative empirical specifications is required before drawing a firm conclusion.

Finally, the findings highlight the importance of considering the institutional and methodological context when interpreting board diversity effects in SOEs. SOE boards do not operate solely according to commercial objectives; they are also subject to public accountability, government ownership and broader stakeholder expectations. Consequently, the contribution of female directors to organisational performance may depend on the extent to which boards possess sufficient independence, competence and authority to influence strategic decisions. OECD (2024) emphasises the importance of board competence, independence, diversity and protection from undue political influence in strengthening SOE governance. At the same time, the longitudinal nature of the present dataset requires caution in interpreting the empirical relationships because repeated observations from the same enterprises may reflect firm-specific characteristics and dependence across years (Baltagi, 2021).

Accordingly, the findings should be interpreted as evidence of association rather than causation, and the suggestive moderation effect of firm age should be viewed as an avenue for further investigation rather than definitive evidence. Overall, the study contributes to the emerging literature by showing that board gender diversity may have performance relevance in SOEs while also suggesting that its potential benefits may vary according to organisational age and institutional context (Laique et al., 2023; Moreno-Enguix et al., 2026).

5. Conclusion

This study investigates whether board gender diversity is associated with the financial performance of SOEs in Zimbabwe and further examines whether firm age may condition this governance relationship. Using archival panel data from 12 commercially oriented SOEs over the period 2015–2021, the findings indicate a positive association between higher female board representation and financial performance in the reported PLS-SEM analysis. This result is consistent with the view that gender-diverse boards can strengthen monitoring, accountability and strategic deliberation. The finding should, however, be interpreted as an association rather than a causal effect (Pham et al., 2025; Moreno-Enguix et al., 2026).

The negative AGE × BGDR interaction suggests that the association between board gender diversity and financial performance may become weaker in older organisations characterised by established routines, bureaucratic layering and slower strategic responsiveness. Importantly, the interaction coefficient is statistically significant at the 10% level but not at the conventional 5% level ($\beta = -0.164$, $p = 0.053$). Accordingly, the moderation finding should be described as weak or suggestive evidence rather than definitive confirmation of H2 (Bakker and Josefy, 2018).

These findings contribute to the accounting and corporate governance literature in several respects. First, the study extends board diversity research beyond the heavily examined setting of private listed corporations by providing evidence from SOEs in an emerging economy. Second, it examines firm age as a potential organisational contingency that may help explain differences in the performance implications of female board representation. Third, the study highlights the importance of explicitly recognising the longitudinal structure of SOE data when drawing inferences from repeated firm-year observations.

This study also carries several practical implications. For policymakers and regulators, the results indicate that female board appointment should be pursued as a substantive governance enhancement rather than a symbolic compliance exercise. Strengthening female participation on SOE boards may improve board scrutiny, strategic discipline

and accountability quality. For SOEs themselves, the findings suggest that governance reform should not focus solely on board appointments, but should also include organisational renewal initiatives aimed at reducing bureaucratic inertia, improving managerial responsiveness and increasing the board's capacity to implement strategic recommendations. In addition, the negative role of leverage and the inefficiencies associated with larger boards imply that financial prudence and board optimisation remain essential components of broader governance improvement (OECD, 2024).

Notwithstanding these contributions, several limitations should be acknowledged. First, the study is restricted to 12 Zimbabwean SOEs with sufficiently complete reporting records, which may introduce selection bias and limit wider generalisability. Second, the dataset contains repeated observations from the same enterprises, so firm-specific heterogeneity, year effects and within-firm dependence require careful consideration. Third, the analysis relies on archival quantitative proxies and therefore cannot fully capture boardroom behavioural dynamics, director influence processes or informal governance interactions. Fourth, financial performance is measured using return on assets only, which may not capture the broader public-service objectives of SOEs.

Fifth, the reported descriptive values for NED and LEV require source-level verification against the underlying firm-year records. Accordingly, the findings involving NED and LEV should be interpreted with caution, as the reported descriptive values could not be independently reconciled with their stated ratio definitions. The values were retained as reported rather than replaced with assumed corrections because no independently verifiable source records were available to support alternative values. Finally, the moderation result is only suggestive because the interaction p-value of 0.053 does not meet the conventional 5% significance threshold (Moreno-Enguix et al., 2026; Baltagi, 2021). No separate panel regression is reported, so the PLS-SEM results should not be interpreted as demonstrating robustness to alternative panel-data specifications.

In conclusion, this study provides evidence of a positive association between board gender diversity and financial performance in the sampled Zimbabwean SOEs. It also provides suggestive evidence that organisational age may weaken this association. The latter result should not be overstated because the interaction does not meet the conventional 5% significance threshold. More broadly, the study demonstrates the value of examining board diversity within the institutional and organisational context of SOEs and of recognising the longitudinal structure of firm-level observations when interpreting governance-performance relationships (Laique et al., 2023).

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6.1 AI Use Statement

Generative artificial intelligence tools were used during the preparation of this manuscript to assist with language editing, manuscript organisation and improvement of clarity and readability. The authors reviewed and verified all AI-assisted outputs and remain fully responsible for the accuracy, originality, interpretation of findings and final content of the manuscript. No AI tool was used to generate or fabricate empirical data, statistical results or research findings.

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