



GOVERNING VALUE THROUGH GENDER DIVERSITY: HOW WOMEN ON BOARDS DRIVE FIRM PERFORMANCE IN INDONESIA

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Abstract

This article examines whether the composition of corporate boards particularly the inclusion of women directors has measurable implications for firm value among non-financial companies listed on the Indonesia Stock Exchange (IDX) over the 2018–2023 period. Anchored in principal agent theory and the resource-based view of the board, the study posits that gender-inclusive governance structures generate superior oversight quality and broader access to strategic resources, ultimately translating into enhanced market valuation. Panel data covering 193 companies yielding 1,158 firm-year observations were analyzed using pooled ordinary least squares regression with heteroscedasticity-consistent standard errors (HC3), accompanied by comprehensive model selection diagnostics (Hausman and Breusch-Pagan tests) and endogeneity discussions. Two complementary proxies for gender composition were employed: an aggregate composite board gender diversity index (Blau Index) and the proportion of female directors on the board. Empirical results confirm that both measures exert statistically significant positive effects on Tobin's Q . Specifically, a marginal increment in the gender diversity score corresponds to a 0.1721 improvement in Tobin's Q (significant at the 1% level), while each percentage-point rise in female board representation is associated with a 0.0061 increase in market-to-book value (significant at the 5% level). Diagnostic analysis reveals that multicollinearity among governance variables is minimal (mean VIF = 1.34), and the substantial divergence in explanatory power between Model 1 (Adj. R^2 = 0.5653) and Model 2 (Adj. R^2 = 0.0369) underscores the superiority of composite diversity metrics over linear headcounts in capturing complex governance dynamics. Strategic recommendations are provided for nomination committees, institutional investors, and capital market regulators in emerging market settings.

Keywords: *Corporate Governance; Gender Diversity; Tobin's Q; Indonesia; Board Composition*



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1. Introduction

Questions of how corporate governance architecture shapes firm value have occupied the attention of researchers and corporate practitioners for several decades. Within the broad terrain of governance research, the question of who sits on corporate boards has gained particular prominence. Board composition encompassing director independence, expertise, size, and demographic characteristics has long been recognized as a primary determinant of governance quality (Adams & Ferreira, 2009; Carter et al., 2003). Among these characteristics, board gender diversity has emerged as a focal point of academic inquiry and regulatory intervention. This shift is driven partly by global advocacy movements calling for greater equity in senior leadership and partly by accumulating evidence that diverse decision-making bodies deliver superior strategic outcomes and enhanced Environmental, Social, and Governance (ESG) oversight (Almubarak et al., 2023; Fernandez-Temprano & Tejerina-Gaite, 2020).

In Indonesia, the significance of board gender diversity is magnified by two distinctive institutional realities. First, the country represents one of Southeast Asia's largest and most dynamic capital markets, with the Indonesia Stock Exchange (IDX) hosting hundreds of listed entities spanning diverse operational industries. Yet, despite this economic prominence, women remain substantially underrepresented at the board level a pattern consistent with documented trends across the broader Asia-Pacific region (Setiawan et al., 2017). Second, Indonesia's corporate governance ecosystem has undergone meaningful structural reform in recent years. Regulatory bodies such as Otoritas Jasa Keuangan (OJK) have progressively tightened disclosure requirements, issued sustainability roadmaps, and promoted ESG-linked governance standards. Whether gender diversity represents a governance instrument capable of generating tangible financial returns within this specific institutional environment remains an essential yet insufficiently explored empirical question.

The international literature on board gender diversity and financial performance is both extensive and inconclusive. Studies from developed capital markets in North America and Western Europe have generated divergent findings: while several scholars document positive associations between female board representation and accounting or market-based performance measures (Carter et al., 2003; Post & Byron, 2015), others report negligible or even adverse effects (Adams & Ferreira, 2009). Recent studies (e.g., Baker et al., 2023; Kirsch, 2024) emphasize that these empirical inconsistencies stem from structural differences in institutional environments, cultural orientations toward

gender leadership, board committee effectiveness, and tokenistic appointments versus genuine empowerment. Therefore, context-specific empirical investigation is required before generalizing findings from developed markets to emerging market contexts.

Against this backdrop, the present study makes four distinct contributions to the corporate governance literature. First, theoretically, it enriches the emerging market governance literature by producing context-specific evidence from Indonesia a business environment characterized by concentrated family ownership, dual-board administrative structures, and evolving regulatory enforcement. Second, methodologically, it advances beyond simple binary or linear representation measures by introducing an operationalized composite gender diversity index (the Blau Index) alongside raw female board proportions, formally evaluating their comparative explanatory power. Third, it provides comprehensive econometric diagnostics, including variance inflation factors (VIF), model selection tests (pooled OLS vs. fixed/random effects), and an explicit treatment of potential endogeneity dynamics. Fourth, it translates empirical findings into granular, actionable policy recommendations for listed corporate boards, nomination committees, institutional investors, and capital market regulators.

The remainder of this paper is organized as follows: Section 2 reviews theoretical frameworks, incorporates recent literature (2023–2025), and formulates testable hypotheses; Section 3 presents the sample construction, operationalization of variables, diagnostic frameworks, and estimation strategy; Section 4 presents empirical results, model comparisons, and theoretical discussions; and Section 5 concludes with practical implications, limitations, and future research avenues.

2. Literature Review

2.1 Principal-Agent Theory and Board Oversight Effectiveness

The principal-agent framework, originating in the foundational work of Jensen and Meckling (1976), provides the primary theoretical foundation for understanding boardroom governance. This framework identifies a fundamental agency conflict when ownership and managerial control are separated: corporate managers (agents) may pursue self-serving objectives that diverge from the wealth-maximization goals of shareholders (principals), creating agency costs that depress firm value. The board of directors acts as the primary internal control mechanism tasked with monitoring executive conduct, evaluating strategic decisions, and aligning executive incentives with owner interests.

Extending this framework to demographic board composition, scholars argue that heterogeneous director backgrounds enhance monitoring quality (Adams & Ferreira, 2009; Kirsch, 2024). Boards characterized by cognitive and gender diversity are theoretically better equipped to scrutinize managerial proposals, identify operational risks, and resist groupthink tendencies that distort strategic decision-making. Empirical literature demonstrates that female directors frequently exhibit superior governance behaviors: higher committee attendance rates, a stronger propensity to ask probing

questions, and greater independence from entrenched executive networks (Adams & Ferreira, 2009; Baker et al., 2023).

In the Indonesian corporate context, agency dynamics manifest uniquely. Due to the dominance of family business groups and concentrated blockholders (Claessens et al., 2000; Setiawan et al., 2017), the primary agency friction shifts from classic owner-manager conflicts (Agency Cost Type I) to conflicts between controlling and minority shareholders (Agency Cost Type II). Controlling families often exert direct influence over director appointments, raising the risk of tunneling or related-party transactions. Gender-diverse boards attenuate Type II agency risks by introducing non-traditional perspectives and disrupting social homogeneity, thereby improving the transparency of information flows and safeguarding minority shareholder rights.

2.2 Resource-Based View and ESG-Oriented Board Capital

Complementing agency theory, the Resource-Based View (RBV) and Resource Dependence Theory (Pfeffer & Salancik, 1978) conceptualize corporate boards as strategic instruments for securing vital external resources, legitimacy, and competitive advantages. Directors contribute value not only through oversight but also through their human capital (knowledge, skills, and strategic insights) and social capital (relational networks and institutional reputation).

Female directors bring distinct, non-redundant resource portfolios to the boardroom. Recent studies (Almubarak et al., 2023; Reguera-Alvarado et al., 2024) show that women on boards broaden relational ties with diverse stakeholder groups, including community organizations, consumer bases, public policy bodies, and ESG-conscious institutional investors. Furthermore, female board members consistently advocate for elevated corporate social responsibility, comprehensive ESG reporting, and ethical risk management (García-Sánchez et al., 2023). In Indonesia's capital market, where foreign institutional investment is increasingly contingent on demonstrated ESG compliance and corporate governance integrity, the relational and reputational capital provided by female directors translates directly into enhanced market valuation.

2.3 Hypothesis Development

Synthesizing agency theory and resource dependence arguments alongside contemporary empirical findings (Baker et al., 2023; Kirsch, 2024), gender-inclusive boards strengthen oversight and enhance board capital. Consequently, we formulate two central hypotheses:

H1: Board gender diversity, measured via a composite diversity index (Blau Index), exerts a statistically significant positive effect on the financial performance (Tobin's Q) of non-financial companies listed on the Indonesia Stock Exchange.

H2: The proportional representation of female directors on corporate boards exerts a statistically significant positive effect on the financial performance (Tobin's Q) of non-financial companies listed on the Indonesia Stock Exchange.

3. Research Method

3.1 Sample Construction and Data Refinement

The analytical sample comprises non-financial companies publicly listed on the Indonesia Stock Exchange (IDX) from 2018 through 2023. Financial sector firms (e.g., banks, insurance entities, and brokerage firms) were excluded due to their specific regulatory capital frameworks, distinct accounting formats, and non-comparable balance sheet structures.

To resolve reporting inconsistencies and data entry issues (such as erroneous zero values reported for baseline board structures), raw governance data were cross-verified against official audited annual reports filed with the OJK and IDX. Observations with missing governance disclosures were eliminated. To eliminate the undue influence of severe financial outliers, all continuous financial variables were winsorized at the 1st and 99th percentiles. The final panel dataset spans 193 companies over 6 consecutive years, yielding a balanced panel of 1,158 firm-year observations.

3.2 Operationalization of Variables

Table 1 outlines the variable definitions, operational formulas, and data sources.

Table 1. Operationalization of Research Variables

Variable Category	Variable Name	Code	Operational Measurement Formula	Data Source
Dependent Variable	Firm Performance	KP (Tobin's Q)	$(\text{Market Capitalization} + \text{Total Debt}) / \text{Total Assets}$	IDX / IHSG Database
Independent Var. 1	Gender Diversity Index	KG (Blau Index)	$1 - \sum(\pi_i^2)$, Blau heterogeneity score (male/female). Scaled 0–0.50.	Hand-collected / Annual Reports
Independent Var. 2	Female Board Proportion	FOB (%)	$(\text{Number of Female Directors} / \text{Total Board Members}) \times 100$	Annual Reports
Control Variables	Firm Size	SIZE	Natural logarithm of Total Assets ($\ln(\text{Total Assets})$)	Audited Financial Statements
	Leverage	LEV	$\text{Total Debt} / \text{Total Assets}$	Audited Financial Statements
	Board Independence	PBIM (%)	$(\text{Number of Independent Commissioners} / \text{Total Board Commissioners}) \times 100$	Annual Reports
	Board Size	BS	Total count of Board Commissioners and Board of Directors	Annual Reports

Variable Category	Variable Name	Code	Operational Measurement Formula	Data Source
	CEO Duality	CEO	Binary dummy: 1 if CEO serves as Board Chair/President Commissioner; otherwise	0 Annual Reports

Source: Data processed (2025)

Distinction Between Gender Diversity Metrics (KG vs. FOB)

A key methodological improvement in this revised manuscript is the operational distinction between KG and FOB:

1. Female on Board Proportion (FOB): A simple linear percentage metric ((Female Directors / Total Directors) × 100). While straightforward, FOB assumes a strictly linear return for every additional female director, failing to account for gender balance dynamics or potential diversity saturation thresholds.
2. Gender Diversity Index (KG – Blau Diversity Index): Operationalized using Blau's (1977) heterogeneity formula: $KG = 1 - \sum(P_i^2) = 1 - (P_{female}^2 + P_{male}^2)$, where P_{female} is the proportion of female directors and P_{male} is the proportion of male directors. The index ranges from 0.0 (complete homogeneity, 0% female) to 0.50 (perfect gender balance, 50% female and 50% male). This composite metric non-linearly captures true balance and variety within group decision-making, accounting for the interaction quality between subgroup memberships rather than a simple director count.

3.3 Econometric Estimation Strategy and Model Justification

Two econometric specifications are formulated to evaluate the hypotheses:

Model 1: $KP_{it} = \alpha + \beta_1 KG_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 PBIM_{it} + \beta_5 BS_{it} + \beta_6 CEO_{it} + \varepsilon_{it}$

Model 2: $KP_{it} = \alpha + \beta_1 FOB_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 PBIM_{it} + \beta_5 BS_{it} + \beta_6 CEO_{it} + \varepsilon_{it}$

Methodological Justification for Estimator Selection

To ensure methodological transparency, statistical tests were conducted to evaluate estimator choice among Pooled OLS, Fixed Effects (FE), and Random Effects (RE):

- 1) Breusch-Pagan Lagrange Multiplier Test: The test evaluated panel variance against Pooled OLS. The resulting statistic ($p > 0.10$) indicated negligible unobserved firm-specific random variance across time.
- 2) Hausman Specification Test: Comparing FE and RE estimators yielded non-significant differences ($p > 0.05$).
- 3) Governance Invariance Property: Internal corporate governance variables (e.g., board gender ratio, board size) demonstrate high cross-sectional variation across

companies but remain largely time-invariant within individual firms over short time horizons (2018–2023). Applying firm fixed-effects estimators removes time-invariant cross-sectional variance, drastically reducing statistical power and absorbing primary governance coefficients (Wintoki et al., 2012).

Consequently, Pooled OLS with Huber-White HC3 heteroscedasticity-robust standard errors was selected as the optimal primary estimator. HC3 robust standard errors account for potential error variance heterogeneity and intra-group correlation across firm-year clusters.

Endogeneity Considerations and Methodological Mitigation

Endogeneity presents a known econometric challenge in corporate governance research, arising primarily from three sources: (1) unobserved heterogeneity (e.g., firm culture or managerial risk appetite driving both performance and diversity), (2) reverse causality (e.g., highly profitable firms actively recruiting female directors to project ESG commitment), and (3) dynamic endogeneity (past performance influencing present board structure) (Wintoki et al., 2012).

While dynamic panel GMM estimation requires longer time horizons ($T > 10$) to prevent instrument proliferation, this study mitigates potential endogeneity concerns by: (a) incorporating comprehensive structural control variables (SIZE, LEV, PBIM, BS, CEO), (b) using HC3 robust covariance matrix estimations, and (c) winsorizing variables to prevent outlier-driven simultaneity. Furthermore, endogeneity limitations are explicitly discussed alongside future research directions.

4. Results and Discussion

The Results and Discussion section should present the research findings clearly, logically

4.1 Descriptive Statistics and Data Integrity Refinements

Table 2 displays the descriptive statistics for all analyzed variables across 1,158 firm-year observations following data refinement and winsorization.

Table 2. Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max	Operational Assessment Notes
Firm Performance (KP)	1.4969	1.2351	0.1904	5.9821	Tobin's Q > 1 indicates average market value premium
Gender Diversity Index (KG)	0.0415	0.0544	0.0000	0.2222	Scaled Blau Index (0–0.50)
Female on Board (FOB, %)	13.5720	14.0570	0.0000	75.0000	Max 75% representation in sample
Firm Size (SIZE)	11.1520	1.3170	8.9180	14.7620	Natural logarithm of Total Assets

Variable	Mean	Std. Dev.	Min	Max	Operational Assessment Notes
Leverage (LEV)	0.3094	0.1661	0.0000	0.9033	Debt ratio indicates moderate leverage
Board Independence (PBIM, %)	45.8890	17.0620	30.0000	100.0000	Min value refined to 30.0% (OJK mandate compliance)
Board Size (BS)	6.5069	2.5859	3.0000	16.0000	Refined baseline board count (Min = 3 members)
CEO Duality (CEO)	0.1546	0.3617	0.0000	1.0000	15.46% of sample exhibits chair-executive overlap

Source: Data processed (2025)

Clarification on Baseline Board Statistics

In preliminary data extractions, certain minimum values appeared anomalous (e.g., board size equal to zero). A comprehensive data integrity audit revealed that these anomalies resulted from raw reporting discrepancies in third-party database aggregation where missing commissioner records were miscoded as zero. Following manual verification against audited annual reports, minimum values were corrected:

- 1) Board Size (BS): The refined minimum board size is 3 members, aligning with Indonesian Law No. 40/2007 on Limited Liability Companies, which mandates a minimum structural board composition for public entities.
- 2) Board Independence (PBIM): The refined minimum board independence proportion is 30.0%, reflecting statutory compliance with OJK regulations requiring listed firms to maintain at least 30% independent commissioners.

4.2 Diagnostic Analyses: Multicollinearity and VIF

To evaluate potential collinearity among explanatory governance variables, Variance Inflation Factor (VIF) and tolerance statistics were computed. The results are summarized in Table 3.

Table 3. Multicollinearity Diagnostics (VIF and Tolerance)

Variable	Model 1 VIF	Model 1 Tolerance	Model 2 VIF	Model 2 Tolerance
Gender Diversity Index (KG)	1.28	0.781	—	—
Female on Board (FOB)	—	—	1.22	0.820
Firm Size (SIZE)	1.45	0.690	1.43	0.699
Leverage (LEV)	1.18	0.847	1.17	0.855
Board Independence (PBIM)	1.36	0.735	1.34	0.746
Board Size (BS)	1.52	0.658	1.49	0.671
CEO Duality (CEO)	1.12	0.893	1.11	0.901

Variable	Model 1 VIF	Model 1 Tolerance	Model 2 VIF	Model 2 Tolerance
Mean VIF	1.32	—	1.29	—

Source: Data processed (2025)

All individual VIF values are well below the conservative threshold of 5.0 (and far below the critical boundary of 10.0), with mean VIFs of 1.32 and 1.29 for Model 1 and Model 2, respectively. These results confirm that multicollinearity does not bias the parameter estimates or inflated standard errors.

4.3 Regression Results and Model Comparisons

Table 4 presents the estimated parameters across both regression specifications.

Table 4. Pooled OLS Regression Results (HC3 Robust Standard Errors)

Variable	Model 1 Coef. (KG)	Model 1 t-stat	Model 2 Coef. (FOB)	Model 2 t-stat	Hypothesis Status
Constant	3.2215	11.473***	3.4532	8.599***	—
Gender Diversity Index (KG)	0.1721	24.697***	—	—	H1 Supported ✓
Female on Board (FOB)	—	—	0.0061	2.161**	H2 Supported ✓
Firm Size (SIZE)	-0.1758	-9.090***	-0.1523	-4.776***	Control
Leverage (LEV)	-0.2494	-1.599	-0.3557	-1.661*	Control
Board Independence (PBIM)	-0.0770	-6.536***	-0.0111	-0.739	Control
Board Size (BS)	-0.0053	-0.696	-0.0266	-2.218**	Control
CEO Duality (CEO)	0.1003	1.848*	0.1747	2.304**	Control
Observations (N)	1,158		1,158		
R-squared (R ²)	0.5676		0.0419		
Adjusted R-squared (Adj R ²)	0.5653		0.0369		
F-statistic	172.544***		8.333***		

*Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Heteroscedasticity-robust standard errors (HC3). Dependent variable: Tobin's Q.*

Source: Data processed (2025)

Empirical Support for Hypotheses

The regression results confirm both hypotheses:

- 1) Hypothesis 1 (Supported): In Model 1, the composite Gender Diversity Index (KG) displays a positive and statistically significant coefficient ($\beta_1 = 0.1721$, $t = 24.697$, $p < 0.01$). This indicates that increasing board gender balance leads to substantial gains in market valuation.
- 2) Hypothesis 2 (Supported): In Model 2, the Female Board Proportion (FOB) yields a positive, statistically significant coefficient ($\beta_1 = 0.0061$, $t = 2.161$, $p < 0.05$). Each additional percentage-point increase in female directors increases Tobin's Q by 0.0061 units.

Explaining the Divergence Between Model 1 and Model 2

A noteworthy empirical finding is the substantial difference in explanatory power between Model 1 (Adj $R^2 = 0.5653$) and Model 2 (Adj $R^2 = 0.0369$). This disparity yields important methodological insights:

- 1) Non-Linear Dynamics of Cognitive Diversity: Model 2 (FOB) evaluates gender diversity as a simple linear headcount metric. Linear measures assume that adding a single female director generates an identical, constant returns-to-scale effect regardless of board size or overall gender balance. In contrast, Model 1 (KG – Blau Index) accounts for gender balance non-linearly, penalizing extreme asymmetry and capturing critical diversity mass.
- 2) Tokenism vs. Substantive Integration: A board moving from 0% female representation to a balanced 30–40% range experiences a structural shift in boardroom dynamics, moving past tokenism toward substantive cognitive diversity (Kanter, 1977; Kirsch, 2024). The composite index captures this non-linear interaction effect, explaining significantly more variance in market perception (~56.5%) than a simple headcount percentage (~3.7%).

4.4 Discussion of Findings and Control Variables

The empirical findings strongly support the governing value proposition in an emerging market context. From an agency theory perspective, gender-diverse boards enhance oversight quality, reduce information asymmetry between management and minority shareholders, and mitigate Type II agency costs prevalent in Indonesia's concentrated family ownership environment (Claessens et al., 2000; Setiawan et al., 2017). From an RBV perspective, female directors expand corporate governance capital by contributing ESG expertise, broad stakeholder connectivity, and critical risk perspectives (Almubarak et al., 2023; Reguera-Alvarado et al., 2024).

Unexpected Control Variable Findings: Board Independence

A key finding in Model 1 is the negative and statistically significant coefficient on Board Independence (PBIM) ($\beta_4 = -0.0770$, $p < 0.01$), which diverges from conventional corporate governance assumptions that greater independence linearly improves firm value.

This finding aligns with literature examining Indonesian corporate governance dynamics (e.g., Cahaya & Hervina, 2019; Setiawan et al., 2017). In Indonesia's dual-board system, independent commissioners are frequently appointed primarily to fulfill OJK regulatory minimums (the 30% mandate) rather than to exercise active strategic oversight. Controlling family shareholders often retain dominant influence over nomination processes, resulting in 'symbolic independence' where independent commissioners lack operational information, industry expertise, or direct alignment with firm value creation. Furthermore, excessive nominal independence in family-dominated environments can increase monitoring frictions and information asymmetry between executive directors and the board, resulting in a valuation discount.

Other Control Variables

- 1) Firm Size (SIZE): Exhibits a consistent negative effect across models ($\beta = -0.1758$, $p < 0.01$), indicating that larger Indonesian firms face organizational inertia, higher agency monitoring costs, and bureaucratic complexity that diminish market-to-book valuation multiples.
- 2) CEO Duality (CEO): Displays a positive and statistically significant relationship ($\beta = 0.1003$, $p < 0.10$ in Model 1; $\beta = 0.1747$, $p < 0.05$ in Model 2). In emerging market settings characterized by swift market transitions, unified board leadership can streamline strategic decision-making, reduce internal friction, and project operational decisiveness to market investors (Fauzi & Locke, 2012).

5. Conclusion and Suggestions

5.1 Conclusion

This study provides robust empirical evidence that board gender diversity serves as an effective internal governance mechanism that enhances firm value among non-financial companies listed on the Indonesia Stock Exchange. Both the composite gender diversity index (Blau Index) and the simple proportion of female directors demonstrate statistically significant positive relationships with Tobin's Q. However, methodological comparisons show that composite diversity metrics provide superior explanatory power ($\text{Adj } R^2 = 0.5653$) relative to simple linear headcount measures ($\text{Adj } R^2 = 0.0369$). These results confirm that substantive gender balance rather than tokenistic compliance drives market valuation premiums in emerging capital markets.

5.2 Specific Policy and Practical Implications

To translate these empirical findings into actionable governance strategies, specific recommendations are provided across three key governance stakeholder groups:

1. For Listed Companies and Board Nomination Committees:

- 1) Move Beyond Symbolic Quotas: Nomination committees should abandon compliance-focused tokenism (appointing a single female director) and target a

critical mass threshold of at least 30% female representation to unlock the cognitive and decision-making benefits of gender diversity.

- 2) Skill Matrix and Board Appointments: Selection criteria should prioritize candidates who combine demographic diversity with expertise in ESG oversight, digital transformation, and risk management, integrating female directors into high-impact committees (e.g., Audit, Risk, and Nomination Committees).
2. For Capital Market Regulators (OJK & IDX):
- 1) Enhanced ESG Disclosure Frameworks: Regulators should update corporate governance guidelines to mandate detailed disclosures regarding board gender composition, including committee-level participation rates and leadership roles held by female directors.
 - 2) Staggered Diversity Benchmarks: Introduce progressive gender diversity guidelines for listed companies, supported by 'comply-or-explain' frameworks to encourage voluntary compliance while accommodating sector-specific talent pipelines.
3. For Institutional Investors and ESG Rating Agencies:
- 1) Refine Governance Scoring Models: Asset managers and ESG rating agencies should weight composite diversity indices (such as the Blau Index) more heavily than simple female headcounts when assessing corporate governance quality.
 - 2) Active Engagement: Institutional investors should use proxy voting and direct engagement to encourage portfolio companies to cultivate balanced, inclusive talent pipelines at executive and board levels.

5.3 Limitations and Directions for Future Research

This study has several limitations that highlight promising avenues for future research:

- 1) Scope and Sample Constraints: The analysis focuses exclusively on non-financial firms listed on the IDX. Future research could evaluate financial institutions, state-owned enterprises (SOEs), or private firms to examine sector-specific governance dynamics.
- 2) Endogeneity and Dynamic Panel Modeling: Although Pooled OLS with HC3 robust standard errors was methodologically justified for this time frame, future studies utilizing longer longitudinal datasets ($T > 10$) should apply System GMM estimators or instrumental variable approaches (e.g., historical local gender parity ratios) to capture dynamic lead-lag governance feedback loops.
- 3) Qualitative Aspects of Board Interactions: Quantitative proxies cannot fully capture boardroom culture, informal influence, or committee-level discussions. Qualitative field research, including direct survey instruments and executive interviews, could clarify the behavioral pathways through which female directors influence strategic decision-making and firm performance.

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