

Research Article

## The Effect of Gender Diversity on Board of Commissioners and Directors to Firm Performance: the Moderating Role of ESG Performance in Indonesian Listed Companies From 2021-2023

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**Abstract:** This study investigates the interconnected roles of board gender diversity and Environmental, Social, and Governance (ESG) performance on firm performance within Indonesia's distinctive two-tier corporate governance system. Utilizing a panel dataset of 80 companies listed on the Indonesia Stock Exchange from 2021 to 2023 and employing a fixed-effects regression model, the analysis measures gender diversity on both the Board of Commissioners (BOC) and Board of Directors (BOD) using the Blau Index, with firm performance proxied by Tobin's Q and ESG performance sourced from Refinitiv Eikon scores. The empirical results reveal that gender diversity on both the BOC and BOD does not have a statistically significant effect on firm performance, failing to support agency, upper echelons, and gender socialization theories. Furthermore, ESG performance demonstrates a significant negative direct effect aligning with the trade-off perspective that current implementation costs outweigh benefits. Crucially, the analysis finds that ESG does not moderate the board diversity-performance relationship, as both interaction terms are statistically insignificant. These findings collectively indicate that the potential governance and strategic advantages of board gender diversity are not being realized in the Indonesian context. The study concludes that this is attributable to several structural barriers, including tokenistic board appointments, the early-stage and often symbolic nature of ESG adoption focused on compliance rather than integration, and a weak institutional environment characterized by voluntary frameworks and socio-cultural constraints that limit the substantive influence of women in governance roles.

**Keywords:** Board Gender Diversity; Corporate Governance; ESG Performance; Firm Performance; Moderating Effect.

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### 1. Introduction

The issue of gender diversity on corporate boards has gained increasing global attention from policymakers, academics, and the public (Sanad & Al Lawati, 2023). This concern aligns with SDG No. 5, which promotes gender equality as a fundamental human right and a driver of inclusive economic growth, while board diversity is viewed as a catalyst for innovation and effective governance (Sultana et al., 2024; Zaid et al., 2020). Drawing on agency and resource dependency theories, prior studies suggest that gender-diverse boards can strengthen oversight, reduce agency costs, and enhance decision-making quality by incorporating broader perspectives and resources (Arora, 2022).

Global policy developments reflect this shift, notably the European Union's Directive (EU) 2022, which mandates a 40% gender quota for corporate boards following Norway's 2003 reform (Halrymo & Teigen, 2024). Despite such initiatives, women occupy only 23.3% of board positions globally, while Indonesia lags at 9.7%, compared with Malaysia (28.5%) and Singapore (20.8%) (Deloitte, 2024). Indonesia has not implemented board gender quotas, although it requires at least one-third female representation in legislative elections, and its two-tier structure, comprising a Board of Directors (BOD) and a Board of Commissioners (BOC), offers a distinct setting to study gender in governance (Bintarto & Harymawan, 2024; Krisnadewi et al., 2020).

Sustainability issues framed within the SDGs and the ESG (Environmental, Social, and Governance) agenda have become integral to corporate strategy, as ESG principles stress accountability and long-term value creation (IDX, 2025; Mehmood et al., 2023). In Indonesia, Government Regulation No. 47/2012 and OJK Regulation No. 51/POJK.03/2017 require firms to incorporate ESG considerations into their operations, and evidence shows that strong ESG performance improves resilience, reputation, and financial outcomes (OJK, 2017; Primacintya & Kusuma, 2025). Board gender diversity is closely linked to these initiatives, as female directors tend to emphasize social and ethical issues, aligning corporate objectives with stakeholder interests and strengthening ESG integration, although empirical findings on its effect on firm performance are mixed due to factors such as low representation and tokenism (Almarayeh, 2023; Singhania et al., 2024).

Recent studies indicate that ESG performance may moderate the relationship between board gender diversity and firm performance by enhancing transparency and accountability, allowing firms with strong ESG practices to better leverage diverse boards for sustainable strategies and more effective oversight (Sahu et al., 2025). In Indonesia's voluntary board diversity environment and evolving ESG framework, the interaction between gender diversity, ESG performance, and firm performance remains underexplored. Accordingly, this study examines the effect of gender diversity in both the BOD and BOC on firm performance among Indonesian listed companies from 2021 to 2023, and the moderating role of ESG performance, thereby deepening understanding of how inclusivity and sustainability jointly shape corporate outcomes in a two-tier governance system without mandatory gender quotas.

## 2. Literature Review

### Agency Theory

Agency theory by Jensen & Meckling (1976), said the relationship between principals (shareholders) and agents (managers) in modern corporations. The division between ownership and managerial control can create conflicts of interest, as managers may pursue their own benefits rather than maximizing shareholder value, thereby giving rise to agency issues and higher monitoring expenses.

Corporate governance serves as a key mechanism to mitigate agency problems through oversight and accountability structures, particularly the board of directors. A well-designed and diverse board can enhance monitoring effectiveness (Fama & Jensen, 1983). From this perspective, gender diversity at the board level strengthens governance by improving oversight and reducing agency costs. Women directors are often described as more meticulous and diligent monitors (Adams & Ferreira, 2009), bringing diverse viewpoints that challenge groupthink and foster better decision-making (Reguera-Alvarado et al., 2017; Singhania et al., 2024). Accordingly, gender-diverse boards contribute to stronger alignment between managers and shareholders, potentially leading to improved firm performance and sustainable governance outcomes.

### Upper Echelon Theory

The Upper Echelons Theory, introduced by Hambrick & Mason (1984), posits that organizational outcomes such as strategy and performance reflect top executives' values, experiences, and cognitive bases. Executives, operating under bounded rationality, filter information through personal characteristics, making top management team (TMT) composition critical for strategic choices across similar institutional contexts. (Issa & Bensalem, 2023)

Demographic traits like age, education, functional background, and gender proxy executives' cognitive styles (Hambrick & Mason, 1984). Gender stands out for capturing differences in perception, communication, and risk preferences. Saha & Maji (2022) show that board human capital diversity, including gender, enhances performance by broadening strategic perspectives.

Female executives exhibit more cautious, risk-averse decision-making that supports long-term financial performance and sustainable growth (Jeong & Harrison, 2017; Rahmanto & Dara, 2020). Women's board presence also enriches knowledge diversity, strengthens collective cognition, and promotes eco-innovation (Issa & Bensalem, 2023).

## Gender Socialization Theory

Gender socialization theory proposes that women develop communal traits shaped by gendered expectations and socialization processes (Eagly & Johannesen-Schmidt, 2001). Female leaders typically adopt democratic, participative styles emphasizing collaboration and group cohesion, while male leaders favor more autocratic, task-focused approaches (Eagly & Johannesen-Schmidt, 2001).

Women exhibit greater risk aversion in financial decisions than men, who show more overconfidence driving riskier choices (Loukil & Yousfi, 2016). Gender socialization also fosters stronger ethical adherence among women, reducing unethical behaviors like bribery (Mason and Mudrack, 1996; García-Sánchez et al., 2014; Tran et al., 2022).

Female directors prioritize environmental and social issues, addressing broader stakeholder interests beyond shareholder profits (Issa & Zaid, 2021). Compared to male directors, women better handle stakeholder concerns, promote environmental responsibility, and build relationships with employees, customers, suppliers, and civil society while supporting long-term shareholder value (Liu, 2018; Glass et al., 2016).

## Stakeholder Theory

Stakeholder theory, originating at Stanford Research Institute (1963) and formalized by Freeman (1984), argues firms create sustainable value by addressing all stakeholders (shareholders, employees, customers, governments, communities) rather than shareholder returns alone (Mahajan et al., 2023). Stakeholders include any groups affecting or affected by organizational objectives. The framework stresses recognizing stakeholder needs, managing expectations, and holistic decision-making for accountability and long-term success. Businesses thrive by balancing diverse interests within interconnected ecosystems, enhancing competitiveness and social sustainability (Freeman, 2005; Lee & Isa, 2023).

Strong ESG performance builds stakeholder trust, mitigates risks, and enables enduring value creation (Chang et al., 2024). Gender diversity enhances reputation and relationships, fostering inclusive cultures that attract talent and conscious consumers (Grassmann, 2021). ESG moderates the governance-performance link by boosting legitimacy and reducing risks (Bukari et al., 2024). This study applies stakeholder theory to assess how Indonesian board gender diversity affects firm performance, with ESG strengthening effects through stakeholder alignment.

## Board Gender Diversity

Board diversity encompasses the variety of demographic attributes, such as gender, ethnicity, and age, among its members, which can enhance decision-making and influence firm performance (Singh et al., 2023). In Indonesia's dual governance system, the Board of Directors (BOD) manages daily operations and strategy, while the Board of Commissioners (BOC) provides oversight and advice (Krisnadewi et al., 2020).

From a theoretical standpoint, boards with greater gender diversity are expected to enhance governance quality and lead to more favorable organizational outcomes. Upper Echelon Theory posits that managerial backgrounds shape strategic choices (Hambrick & Mason, 1984), while Gender Socialization Theory links diverse leadership styles to gender (Eagly & Johannesen-Schmidt, 2001). Stakeholder and Agency Theories further suggest diversity increases responsiveness to stakeholder concerns and reduces governance costs (Mehmood et al., 2023). Empirical studies associate such diversity with benefits like stronger risk management and ethical conduct (Jeong & Harrison, 2017; García-Sánchez et al., 2014).

As Indonesia has no mandatory gender quota for corporate boards (Bintarto & Harymawan, 2024), this study examines gender diversity on both the BOD and BOC. It is measured using the Blau index, which ranges from 0 to 0.5, where higher values indicate greater diversity (Jusuf et al., 2024).

## Firm Performance

Firm performance reflects how effectively companies achieve growth, profitability, competitiveness, and sustainability objectives (Taouab & Issor, 2019). Key determinants include profitability, growth, market value, customer/employee satisfaction, environmental performance, corporate governance, and social performance. Profitability measures encompass ROA, ROE, ROI, EBITDA margin, net income, and EVA; growth metrics include revenue/asset growth and employee expansion; market value indicators feature EPS, Tobin's Q,

MVA, and dividend yield (Santos & Brito, 2012). This study uses Tobin's Q as the firm performance proxy, preferred over accounting measures for incorporating risk and reflecting market expectations of future earnings and competitive advantage (Singh et al., 2023).

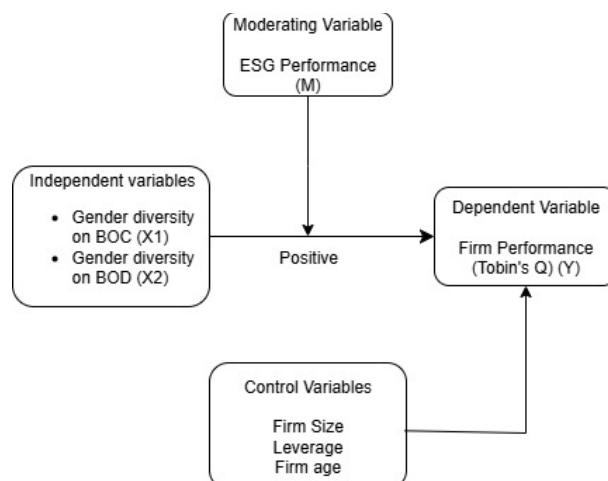
## ESG Performance

Environmental, Social, and Governance (ESG) performance reflects a company's commitment to sustainability, social responsibility, and sound governance, influencing its societal relationships and long-term value (Velte, 2019). Formally introduced by the UN in 2004, ESG principles have been integrated into Indonesia's policy framework, including its Sustainable Development Goals (SDGs) and regulations like POJK No. 51/POJK.03/2017 on sustainable finance, reinforcing corporate adoption of these practices (Primacintya & Kusuma, 2025).

ESG can moderate the relationship between board gender diversity and firm performance. A strong ESG environment enables women on boards who often emphasize supervision, ethics, and stakeholder concerns to enhance transparency, strategic planning, and governance accountability, thereby strengthening the positive impact of diversity on performance (Sahu et al., 2025).

In this study, ESG performance is measured using Refinitiv Eikon's composite ESG score (0–100), which aggregates publicly disclosed data across more than 630 metrics. The overall score is weighted across three pillars: Environmental (34%), Social (42%), and Governance (24%). These pillar scores assess factors such as resource use, emissions, workforce practices, human rights, community engagement, and management quality (Naeem et al., 2022; Iqbal, 2023).

## Hypotheses Development



**Figure 1.** Research Framework.

Indonesia employs a two-tier board system where the Board of Directors (BOD) manages daily operations and pursues financial success, while the Board of Commissioners (BOC) provides independent supervision, guidance, and evaluation of BOD decisions to ensure alignment with shareholder interests and good governance (KNKG, 2021). Agency theory emphasizes the BOC's monitoring role to mitigate conflicts between managers and shareholders. Gender diversity strengthens this function because women directors exhibit more diligent, inquisitive oversight, challenging managerial decisions more rigorously than male counterparts, thus reducing agency costs (Adams & Ferreira, 2009). Diverse boards also gain independence through varied traits and perspectives, enhancing overall monitoring quality and firm performance (Maji & Saha, 2021).

**H1: There is a positive effect relationship between gender diversity on BOC and firm performance**

Unlike the supervisory Board of Commissioners (BOC), the BOD directly shapes firm outcomes through daily management and resource allocation. Upper echelons theory explains that firm performance partially reflects top executives' cognitive frames, which filter information based on personal attributes like gender (Hambrick & Mason, 1984). Hambrick (2007)

elaborates that these cognitive frames determine how directors search for, interpret, and respond to strategic information, directly influencing decision quality and organizational results. Gender diversity on the BOD introduces complementary cognitive styles. Men typically exhibit risk-taking and assertive tendencies, while women demonstrate greater attention to detail, sensitivity to non-verbal cues, and inclusive communication (Qian, 2016). These differences create balanced discussions, reduce homogeneous thinking, and generate diverse strategic ideas (Hillman & Dalziel, 2003; A. A. Zaid et al., 2020). Female directors particularly enhance focus on non-financial outcomes, ESG issues, and stakeholder concerns due to their compassionate approach (Velte, 2017; Mehmood et al., 2023).

**H2: There is a positive effect relationship between gender diversity on BOD and firm performance**

ESG performance serves as a key moderator strengthening the BOC gender diversity-firm performance relationship (Sahu et al., 2025). High ESG creates a transparent environment where women commissioners known for superior monitoring, ethics sensitivity, and risk management can maximize supervisory effectiveness. Comprehensive ESG data reduces information asymmetry, enabling diverse BOCs to conduct rigorous oversight and ensure BOD accountability on sustainability goals. Women commissioners' strengths in supervision and diverse perspectives become particularly valuable when verifiable ESG metrics exist, amplifying their monitoring impact. Robust ESG practices thus enhance BOC gender diversity's positive influence on firm performance through strengthened governance and reduced agency conflicts.

**H3: ESG performance significantly moderates the relationship between gender diversity on BOC and firm performance**

ESG performance serves as a key moderator strengthening the BOD gender diversity-firm performance relationship (Sahu et al., 2025). High ESG creates transparency through comprehensive data, enabling detail-oriented female directors to make superior strategic decisions and risk assessments. Amid rising stakeholder ESG demands (Ozili, 2023), women's natural focus on sustainability investments becomes more impactful (Romano et al., 2020). Robust ESG practices also reduce BOD oversight burdens on operational sustainability, freeing diverse boards for core strategic risk management (Nurrizkiana et al., 2024). Ultimately, strong ESG amplifies the legitimacy and governance signals from gender-diverse BODs, translating women's complementary perspectives into measurable performance gains.

**H4: ESG performance significantly moderates the relationship between gender diversity on BOD and firm performance**

### 3. Research Method

#### Population and Sample

The population comprises all companies listed on the Indonesia Stock Exchange (IDX) with available ESG scores in the Refinitiv Eikon database during 2021–2023. Purposive sampling selected companies meeting these criteria: IDX listing during 2021–2023, available Refinitiv ESG scores, complete annual reports, and board composition data including gender information for both commissioners and directors.

From 891 IDX-listed companies, 810 lacked ESG data, leaving 81 firms with complete financial reports across three years (243 observations). After excluding 3 outliers, the final panel dataset includes 240 observations from 80 companies.

#### Variables and measurements

This study examines one dependent variable (firm performance), two independent variables (BOC and BOD gender diversity), one moderating variable (ESG performance), and three control variables (firm size, leverage, firm age).

Gender diversity for both Board of Commissioners (BOC) and Board of Directors (BOD) uses the Blau index:  $1 - \sum_{i=1}^N p_i^2$ , where  $p_i$  represents each gender's proportion. Values range from 0 (no diversity) to 0.5 (perfect balance) (Saha & Maji, 2022; Singh et al., 2023; Laskar et al., 2024). Tobin's Q measures firm performance as (market value of equity + book value of debt) / book value of total assets (Singh et al., 2023). ESG performance uses Refinitiv Eikon scores (0-100) weighted 34% environmental, 42% social, and 24% governance relative to sector/country peers (Primacintya & Kusuma, 2025; Naeem et al., 2022). Control Variables: Firm size (natural log of total assets), leverage (total debt/total assets), and

firm age (years since establishment) control for firm-specific effects (A. A. Zaid et al., 2020). This research using panel data fixed effect model.

#### 4. Results

**Table 1.** Descriptive Statistical Analysis.

Variable	Obs	Mean	Std. Dev	Min	Max
FP	240	1.647	1.801	0.279	13.880
GDC	240	0.187	0.184	0	0.5
GDD	240	0.219	0.185	0	0.5
FSIZE	240	31.352	1.631	26.330	35.320
LEV	240	0.530	0.376	0.022	4.788
FAGE	240	43.163	19.760	3	110
ESG	240	51.620	18.549	11.940	88.590
ESGXGDC	240	9.610	10.510	0	36.342
ESGXGDD	240	11.706	11.038	0	44.049

The descriptive statistics show that firm performance (Tobin's Q) ranges from 0.279 to 13.880, with a mean of 1.647 and high standard deviation of 1.801, indicating substantial variation in market valuation across firms. Gender diversity on the Board of Commissioners (GDC) ranges from 0.00 to 0.50, with a low mean of 0.187 and standard deviation of 0.184, suggesting limited gender balance and moderate variability. Gender diversity on the Board of Directors (GDD) ranges from 0.00 to 0.50, averaging 0.219 with standard deviation of 0.185, reflecting similarly low representation but slightly higher averages than commissioners. ESG performance ranges from 11.940 to 88.590, averaging 51.620 with substantial standard deviation of 18.549, indicating moderate sustainability commitment with wide variation. Firm size (Ln assets) ranges from 26.330 to 35.320, averaging 31.352 with relatively low standard deviation of 1.63, while leverage (DAR) averages 0.53 (range 0.02-4.79, SD=0.376) and firm age averages 43.16 years (range 3-110, SD=19.76), showing moderate financing structures but diverse corporate maturity levels. While ESG X GDC shows a minimum value of 0 and a maximum value of 36.342. The mean value of 9.610 indicates that, on average, the combined effect of ESG performance and commissioner gender diversity within the sample is relatively modest. Meanwhile, the standard deviation of 10.510, which is higher than the mean and (ESGXGDD) shows a minimum value of 0 and a maximum value of 44.049. The mean value of 11.706 with standard deviation of 11.038.

**Table 2.** Coefficient of Determination Test (without moderation).

Within	Between	Overall
0.1329	0.0292	0.0281

The Within R-squared is 0.1329, indicating that the independent variables are able to explain approximately 13.29% of the variation in FP within entities over time. This is without the moderating variables and the interactions.

**Table 3.** Coefficient of Determination Test (with moderation).

Within	Between	Overall
0.1769	0.0041	0.0064

This is with moderating variable and variables interaction. The Within R-squared increases to 0.1769, indicating the model explains approximately 17.69% of the within-entity variation in firm performance. This gain, from 0.1329 in the controls-only model, demonstrates the added explanatory value of including ESG and its interaction terms.

**Table 4.** F-Test Statistic (without moderation).

F-statistic	Degrees of freedom	Prob > F
8.62	F(5, 79)	0.0000

With a Prob > F value of 0.0000, the model shows that the combined set of independent variables and control variables have a significant effect on firm performance.

**Table 5.** F-Test Statistic (with moderation).

F-statistic	Degrees of freedom	Prob > F
7.49	F(8, 79)	0.0000

The addition of the moderator ESG and its interactions (ESG×GDC, ESG×GDD) does not alter the model's overall significance, which remains strong (Prob > F = 0.0000).

**Table 6.** T-Test Statistic (without moderation).

Variable	Coefficient	t-statistic	Prob >  t
GDC (X <sub>1</sub> )	-1.1414	-1.60	0.113
GDD (X <sub>2</sub> )	1.4398	1.28	0.205
FSIZE (X <sub>3</sub> )	-1.8394	-1.02	0.310
LEV (X <sub>4</sub> )	0.8832	4.43	0.000
FAGE (X <sub>5</sub> )	0.0756	0.95	0.345

The t-test results prior to moderation show that LEVERAGE is the only variable with a significant individual effect on FP ( $p = 0.000$ ), whereas GDC, GDD, FSIZE, and FAGE are not significant.

**Table 7.** T-Test Statistic (with moderation).

Variable	Coefficient	t-statistic	Prob >  t
GDC (X <sub>1</sub> )	-0.4975	-0.62	0.535
GDD (X <sub>2</sub> )	1.8400	1.40	0.165
FSIZE (X <sub>3</sub> )	-1.4873	-0.90	0.369
LEV (X <sub>4</sub> )	0.8968	4.43	0.000
FAGE (X <sub>5</sub> )	0.1151	1.29	0.202
ESG (M)	-0.0450	-2.13	0.036
ESGXGDC (MX <sub>1</sub> )	-0.0090	-0.22	0.830
ESGXGDD (MX <sub>2</sub> )	-0.0925	-1.28	0.204

ESG significantly negatively impacts firm performance ( $p = 0.036$ ) but does not serve as a significant moderator, as its interaction terms with GDC and GDD are non-significant ( $p = 0.830$  and  $p = 0.204$ , respectively).

## 5. Discussion

### The Effect of BOC Gender Diversity to Firm Performance

Gender Diversity in the Board of Commissioners (GDC) does not significantly affect Firm Performance, as indicated by its p-value of 0.113 and a negative but insignificant coefficient of -1.141. Consequently, the research hypothesis is not supported.

This outcome contradicts the expectations of agency and gender socialization theories, which posit that diverse boards improve governance and performance. Instead, it aligns with findings from other developing economies and tokenism theory, which suggest that without a critical mass, female representation may be symbolic (Almarayeh, 2023). In the Indonesian context specifically, appointments often based on family connections rather than merit may further dilute the potential governance benefits (Sutrisno & Fella, 2020).

### The Effect of BOD Gender Diversity to Firm performance

The results indicate that Gender Diversity on the Board of Directors (GDD) does not significantly affect Firm Performance ( $p = 0.205$ ). The positive but insignificant coefficient of 1.440 leads to the rejection of the research hypothesis.

This finding contradicts upper echelons and gender socialization theories, which propose that the complementary cognitive traits of diverse boards enhance strategic decision-making and stakeholder engagement. Instead, the outcome aligns with studies in contexts like Indonesia and India, where low representation and token appointments often due to patriarchal norms or family-dominated ownership prevent gender diversity from translating into measurable performance effects (Singh et al., 2023).

### The Moderating Role of ESG Performance on The Relationship Between BOC Gender Diversity and Firm Performance

The analysis reveals two key findings. First, ESG performance has a significant negative direct effect on firm performance ( $\beta = -0.045$ ,  $p = 0.036$ ), which supports trade-off theory's view of ESG as a resource cost. In this view, capital allocated to sustainability initiatives diverts funds from potentially more profitable, core operational uses, leading to escalated costs and diminished short-term profitability (Mishra et al., 2024). This finding notably contradicts the central tenet of stakeholder theory, which posits that addressing broader societal concerns builds trust, mitigates risk, and ultimately strengthens long-term financial resilience and value creation.

Second, ESG does not moderate the relationship between board diversity and performance, as the interaction term ( $ESG \times GDC$ ) is insignificant ( $p = 0.830$ ). This lack of a moderating effect can be attributed to the early-stage, often symbolic adoption of ESG practices in Indonesia. Significant challenges including a prevailing corporate focus on short-term financial returns, a lack of standardized measurement and reporting infrastructure, and a superficial understanding of ESG principles hinder its deep operationalization. Consequently, ESG practices have yet to evolve into a substantive governance lever capable of systematically interacting with other board characteristics to influence performance (Ihsani et al., 2023). Together, these findings paint a picture of ESG in this context as a current net cost that operates in isolation, rather than as an integrated, strategic factor that moderates existing governance relationships.

### The moderating role of ESG performance on the relationship between BOD gender diversity and firm performance

The fixed-effects regression results show that the interaction between ESG performance and Board of Directors diversity ( $ESG \times GDD$ ) is statistically insignificant ( $\beta = -0.093$ ,  $p = 0.204$ ). This indicates that ESG does not act as a significant moderator in the relationship between gender diversity on the board of directors and firm performance.

The absence of a significant moderating effect can be attributed to the underdeveloped nature of ESG practices in Indonesia, which remain largely symbolic rather than substantively

integrated. Although ESG reporting is growing, it is hampered by inconsistent standards, limited supporting infrastructure, and low adoption rates among firms. This results in disclosures that are often superficial or driven by greenwashing, producing weak signals that fail to meaningfully interact with governance attributes such as board diversity (Ihsani et al., 2023). Moreover, investors in the region continue to prioritize conventional financial metrics over sustainability performance, a tendency reinforced by regulatory frameworks that lag behind those of neighboring markets like Singapore and Malaysia (Husada & Handayani, 2021) (Aprianto & Waspodo, 2025). Consequently, without deep operational integration or strong market recognition, ESG practices in their current form do not systematically enhance or diminish the influence that a gender-diverse board of directors has on firm value.

## 5. conclusions

The analysis shows that gender diversity on the Board of Commissioners (GDC) has an insignificant negative relationship with firm performance ( $p=0.113$ ), while diversity on the Board of Directors (GDD) shows an insignificant positive effect ( $p=0.310$ ). ESG performance itself has a significant negative main effect ( $p=0.036$ ), suggesting its current costs outweigh its benefits. Importantly, ESG does not moderate the relationship between board diversity and performance, as both interaction terms (GDC $\times$ ESG and GDD $\times$ ESG) are statistically insignificant.

This indicates that the potential benefits of board gender diversity are not materializing in Indonesian firms. Key barriers include tokenism, symbolic ESG practices focused on compliance rather than strategy, and a weak institutional environment with voluntary adoption and cultural constraints that limit women's strategic influence within the two-tier board system.

## 6. Limitations and Suggestions

This study acknowledges two main limitations. First, the regression model explains only a portion of the variation in firm performance, suggesting other unexamined variables are influential. Second, the sample is confined to firms with ESG scores in the Refinitiv Eikon database, which may restrict the generalizability of the findings to non-covered or non-disclosing companies.

To address these constraints, two recommendations are proposed. Future research should incorporate additional variables, such as board independence or ownership structure, to improve the model's explanatory power. It should also expand the sample to include companies from other databases or regions to enhance the generalizability and breadth of the findings.

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