



Do Ownership and Gender Diversity Matter? Evidence on Sustainable Assurance and ESG Performance

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ABSTRACT

Introduction/Main Objectives: This study investigates the influence of board gender diversity, ownership concentration, and sustainable assurance on environmental, social, and governance (ESG) performance. While ESG has become central to sustainable business strategies, empirical evidence on the role of governance-related mechanisms remains mixed, particularly in emerging markets.

Background Problems: Global concerns over accountability and stakeholder trust have increased the demand for credible ESG practices. Investors, regulators, and the public seek not only disclosure but also assurance of its reliability. Yet, in many emerging economies, the effectiveness of governance structures in driving ESG outcomes is still debated.

Novelty: This study provides one of the first empirical examinations in Indonesia that positions sustainable assurance as an independent determinant of ESG performance. It contributes new evidence to global debates on ESG accountability by showing the transformative role of assurance beyond traditional governance attributes.



Research Methods: A quantitative design with panel data regression was applied to firms listed in the ESG Leaders Index from 2020-2024. This dataset captures companies recognized for sustainability commitment and allows robust testing of governance attributes and ESG performance.

Findings/Results: Results show that sustainable assurance has a significant positive effect on ESG performance, confirming its role as a credible mechanism for enhancing transparency, accountability, and legitimacy. Conversely, ownership concentration and gender diversity demonstrate no significant effects, suggesting that symbolic structural attributes may be insufficient to improve ESG outcomes in emerging markets.

Conclusion: Sustainable assurance emerges as a decisive driver of ESG performance, whereas ownership concentration and gender diversity alone are not. These findings extend governance literature by emphasizing that assurance mechanisms, rather than structural attributes, shape credible ESG outcomes.

Implementation Potential: Embedding sustainable assurance into corporate governance frameworks strengthens disclosure reliability, fosters investor confidence, and supports alignment with sustainable development goals, thereby enhancing long-term corporate resilience.

Keywords: Board Gender Diversity; Ownership Structure; Sustainability Assurance; ESG Performance.

JEL Classification: (list the relevant JEL codes separated by commas, refer to <https://www.aeaweb.org/jel/guide/jel.php>)

1. INTRODUCTION

Environmental, Social, and Governance (ESG) performance has become a focal point in the discourse on corporate accountability, transparency, and sustainable value creation. With rising global awareness of climate change, social equity, and responsible corporate conduct, stakeholders—including investors, regulators, and the public—demand not only comprehensive disclosures but also credible mechanisms that ensure their reliability (Pacelli et al., 2022; Rajesh, 2020). ESG practices are now embedded in sustainable business strategies, with growing evidence that strong ESG performance enhances firm reputation, reduces risk, and improves long-term financial outcomes (Buallay, 2019; Friede et al., 2015). As such, governance structures that influence ESG implementation have attracted significant scholarly attention worldwide.

Indonesia, as one of the largest emerging economies, provides a unique setting with its growing sustainability agenda, evolving regulatory frameworks, and the establishment of the ESG Leaders Index by the Indonesia Stock Exchange (IDX) in 2022. According to the IDX (2023) the



push for enhanced ESG disclosure has gained momentum, yet the adoption of sustainability assurance remains limited compared to other governance mechanisms. Existing research in Indonesia has predominantly concentrated on board structures—particularly gender diversity—and ownership concentration as determinants of corporate governance quality and sustainability outcomes. While these issues remain relevant, the empirical exploration of sustainability assurance as an independent driver of ESG performance is still underdeveloped. This imbalance is significant, given that assurance provides external validation of corporate ESG disclosures and directly addresses concerns of accountability and credibility in capital markets.

Building upon this gap, this study offers one of the first empirical examinations in Indonesia that positions sustainability assurance alongside gender diversity and ownership concentration as potential drivers of ESG performance. By focusing on firms listed in the IDX ESG Leaders Index between 2020 and 2024, the study captures companies recognized for their sustainability commitment and tests the relative effectiveness of these governance attributes. This research contributes to governance and sustainability literature by extending the debate beyond structural attributes and ownership features, highlighting the decisive role of assurance in strengthening accountability and supporting alignment with the Sustainable Development Goals (SDGs).

This study makes three important contributions. First, it advances corporate governance literature by empirically testing the relative effectiveness of board gender diversity, ownership concentration, and sustainability assurance in influencing ESG performance within the Indonesian context. Second, it positions sustainability assurance as an independent determinant of ESG outcomes, offering novel evidence that assurance mechanisms are more decisive than conventional governance structures in emerging markets. Third, the study provides practical insights for regulators, investors, and firms by demonstrating that embedding assurance within governance frameworks strengthens the credibility of ESG disclosures, fosters stakeholder trust, and enhances alignment with the Sustainable Development Goals (SDGs).



2. LITERATURE REVIEW

2.1 Stakeholder Theory

According to stakeholder theory (Freeman, 2010), firms are accountable not only to their shareholders but also to a wider range of stakeholders, including employees, customers, regulators, society, and the natural environment. Within the context of boards of directors, gender diversity serves as a proxy for the interests of more diverse stakeholder groups. The presence of women on boards enhances sensitivity to social and environmental concerns, as their perspectives tend to be more inclusive, ethical, and long-term oriented compared to male-dominated boards (Nadeem et al., 2019; Rao & Tilt, 2016). Consequently, Yarram & Adapa (2021) found that board gender diversity can strengthen corporate legitimacy in the eyes of stakeholders and foster greater commitment to credible ESG practices. Nevertheless, prior studies caution that in emerging markets, female board representation may function more as symbolic compliance or tokenism rather than substantive influence when not accompanied by sufficient structural power in decision-making processes.

Stakeholder theory also provides a valuable lens for understanding the influence of ownership structure on ESG performance. Oh et al. (2011) stated that concentrated ownership particularly by institutional or foreign investors with long term investment horizons often aligns with stakeholder interests, as strong ESG performance reduces reputational, regulatory, and litigation risks. These investors act as stakeholder agents by demanding transparency, accountability, and responsible corporate conduct. Conversely, Velte (2019) found that when ownership is dominated by controlling shareholders or family owners, priorities may shift toward private benefits and short-term financial gains, potentially at the expense of broader stakeholder interests. Thus, stakeholder theory underscores that the type and orientation of ownership play a decisive role in shaping ESG outcomes, as firms must balance shareholder demands with the social legitimacy required from a diverse stakeholder base.

In the case of sustainability assurance, stakeholder theory emphasizes that the credibility and accountability of ESG disclosures are central to meeting stakeholder information needs. Information asymmetry between firms and external stakeholders can give rise to skepticism or accusations of greenwashing if sustainability reports are not supported by independent verification



mechanisms (Hodge et al., 2009; Simnett et al., 2009). The adoption of sustainability assurance serves as a stakeholder accountability mechanism that enhances trust, signals commitment to social responsibility, and strengthens legitimacy in the market. Accordingly, stakeholder theory not only explains why firms are motivated to disclose ESG information but also highlights why the quality and credibility of such disclosures—reinforced through assurance—are critical for satisfying stakeholder expectations and demands.

Taken together, stakeholder theory provides a unifying framework that explains how board gender diversity, ownership structure, and sustainability assurance jointly influence ESG performance. Gender-diverse boards are expected to integrate broader stakeholder concerns into strategic decisions, concentrated and long-term-oriented ownership structures can enforce stakeholder-driven accountability, and sustainability assurance mechanisms serve to reduce information asymmetry and strengthen disclosure credibility. These governance attributes reflect different channels through which firms respond to stakeholder pressures and secure social legitimacy. In emerging markets such as Indonesia, where institutional environments are still evolving, stakeholder theory suggests that the effectiveness of these governance mechanisms may vary. Nonetheless, the theory highlights that ESG performance ultimately depends on the extent to which corporate governance structures and assurance practices align with and address the expectations of diverse stakeholder groups.

2.2 Board Gender Diversity and ESG Performance

Board gender diversity is argued to enhance corporate responsiveness to stakeholder concerns by introducing more inclusive perspectives and stronger ethical orientation in decision-making (Nadeem et al., 2019; Rao & Tilt, 2016). In Indonesia, the Otoritas Jasa Keuangan (2017) has encouraged board diversity through Regulation No. 51/POJK.03/2017 as part of its sustainable finance policies. However, assessments by Indonesian Institute for Corporate Directorship (IICD) (2023) indicate that gender representation on boards remains limited. Within this regulatory and cultural context, stakeholder theory suggests that gender-diverse boards should contribute to improved ESG outcomes. Hence, the following hypothesis is proposed:

H1. Board gender diversity has a positive effect on ESG performance.



2.3 Ownership Structure and ESG Performance

Stakeholder theory posits that shareholders are one among many stakeholder groups, and their influence depends on ownership concentration and orientation. Oh et al. (2011) stated that long-term institutional and foreign investors are likely to demand higher ESG standards to safeguard reputational and financial value, thereby reinforcing alignment with broader stakeholder expectations. Conversely, Velte (2019) found that concentrated family or controlling ownership may prioritize private benefits over stakeholder-oriented ESG initiatives. Hence, the effect of ownership concentration on ESG performance is theoretically contingent but expected to be significant.

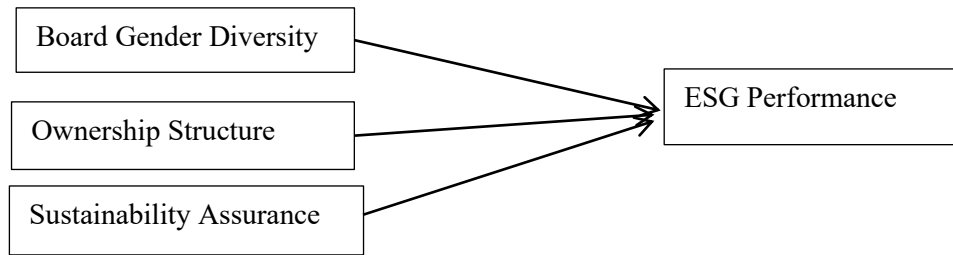
H2. Ownership concentration has a positive effect on ESG performance.

2.4 Sustainability Assurance and ESG Performance

Sustainability assurance directly addresses stakeholder demands for reliable, transparent, and credible ESG information. By reducing information asymmetry and mitigating concerns of greenwashing, assurance mechanisms enhance stakeholder trust and reinforce corporate legitimacy (Hodge et al., 2009; Simnett et al., 2009). From the stakeholder perspective, firms that adopt sustainability assurance demonstrate stronger accountability and commitment to sustainable practices, leading to improved ESG outcomes.

H3. Sustainability assurance has a positive effect on ESG performance.

Building on stakeholder theory, this study conceptualizes ESG performance as the outcome of governance mechanisms that reflect firms' responsiveness to diverse stakeholder interests. Board gender diversity represents an internal governance attribute that incorporates inclusive perspectives and ethical considerations into strategic decision-making. Ownership concentration reflects external shareholder influence, which may either enforce long-term sustainability orientation or prioritize private benefits at the expense of wider stakeholder concerns. Sustainability assurance functions as an accountability mechanism that enhances the credibility of ESG disclosures, thereby addressing stakeholder demands for transparency and reliability. Together, these three governance attributes are expected to shape ESG performance, as illustrated in the conceptual framework below.



3. METHOD

3.1. Research Design

This study adopts a quantitative research design with a causal-explanatory approach to empirically examine the influence of board gender diversity, ownership concentration, and sustainability assurance on ESG performance. The analysis is conducted using multiple linear regression with panel data covering the period 2020–2024.

3.2. Data and Samples

The research population consists of companies listed in the ESG Leaders Index of the Indonesia Stock Exchange (IDX) during 2020–2024. The index, developed in collaboration with Sustainalytics, highlights firms with strong ESG commitments, making it an appropriate setting for assessing governance determinants of ESG performance (IDX, 2023). The study period was chosen because it coincides with the launch of the index in 2020 and provides five years of consistent data, ensuring both cross-sectional and time-series coverage. Samples were selected using purposive criteria, requiring firms to be consistently included in the index, to disclose complete governance and sustainability information, and to have available ESG performance scores from IDX.

3.3. Variables and Measurement

ESG Performance (ESGP) as a dependent variable proxied by the ESG score assigned to firms included in the ESG Leaders Index. There are three independent variables in this research: Board Gender Diversity, Ownership Concentration, and sustainability assurance. Board Gender Diversity (BGD) is measured as the proportion of female directors on the board. Ownership Concentration (OWN) is measured as the percentage of shares held by the largest shareholder. Sustainability

Assurance (ASSUR) is dummy variable coded 1 if the sustainability report is externally assured, 0 otherwise.

3.4. Regression Model

The relationship between governance attributes and ESG performance is estimated using multiple linear regression with panel data:

$$ESGP_{it} = \alpha + \beta_1 BGD_{it} + \beta_2 OWN_{it} + \beta_3 ASSUR_{it} + \epsilon_{it}$$

ESGP_{it} = ESG performance of firm i in year t

BGD_{it} = board gender diversity

OWN_{it} = ownership concentration

ASSUR_{it} = sustainability assurance

ϵ_{it} = error term

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistic

This section reports the empirical results of the statistical analysis, beginning with the presentation of descriptive statistics to illustrate the central tendencies and distribution of the research variables. Table 1 summarizes the complete set of variables along with their corresponding statistical values, thereby offering a clearer picture of the characteristics of the observed data.

Table 1. Descriptive Statistics of Research Variables (N = 150)

Variable	Minimum	Maximum	Mean	Std. Deviation
ESGP	0.00	2.66	0.3071	0.2848
BGD	0.00	0.80	0.2202	0.1742
OWN	0.00	1.00	0.5912	0.1434
ASSUR	0.00	1.00	0.3300	0.4730

Note: author's own source

The results indicate that the average ESG performance of the sampled firms is relatively low, with a mean score of 0.3071 (SD = 0.2848) and a range from 0.00 to 2.66. This suggests that while a few firms achieve relatively high ESG scores, overall performance remains modest and varies considerably across companies in the ESG Leaders Index. Board gender diversity also

records a low average of 0.2202 (SD = 0.1742), meaning that only about 22% of board members are women, and some firms have no female representation at all. This points to the continuing underrepresentation of women in Indonesian corporate governance. Ownership concentration, by contrast, is relatively high, with a mean of 0.5912 (SD = 0.1434) and values ranging from 0.00 to 1.00, showing that most firms have majority shareholders controlling more than half of the equity—typical of emerging markets. Finally, sustainability assurance is found in only about one-third of the firms (mean = 0.33, SD = 0.473), indicating that external verification of ESG disclosures is still uncommon in Indonesia, despite its growing role in promoting accountability and stakeholder confidence.

4.2. Classical Assumption Test

To ensure the accuracy of the regression model, classical assumption tests were conducted. In this study, heteroscedasticity, multicollinearity, and autocorrelation tests were employed. Table 2 presents the results of the heteroscedasticity, multicollinearity and multicollinearity tests, while Figure 1 illustrates the heteroscedasticity test using a scatterplot.

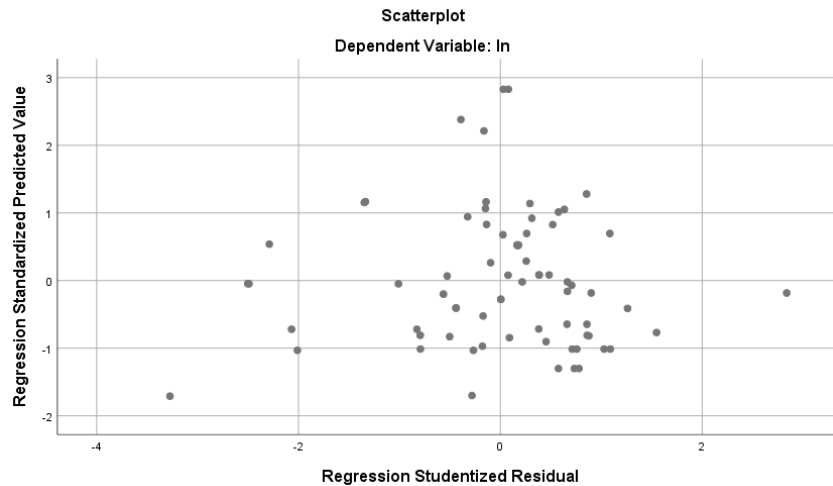
Table 2. Heteroscedasticity, Multicollinearity and Autocorrelation Test

Explanation	Multicollinearity		Heteroscedastisity	
	VIF	Tolerance	t	Significance
BGD	1.067	0.937	0.228	0.820
OWN	1.080	0.926	0.722	0.473
ASSUR	1.021	0.979	0.866	0.390
Durbin Watson Test	1.924			

Note: author's own source

The diagnostic tests confirm that the regression model satisfies the classical assumptions. As shown in Table 2, all independent variables have tolerance values above 0.10 and VIF values well below 10, indicating no multicollinearity. The Park test results ($p > 0.05$) and the scatterplot in Figure 1 further demonstrate the absence of heteroscedasticity, while the Durbin–Watson statistic of 1.924 confirms no autocorrelation. Together, these results validate that the model is free from specification bias and suitable for regression analysis.

Figure 1. Scatterplot Test



4.3. Goodness of Fit

Table 3 shows an adjusted R^2 of 0.068 (6.8%), indicating that ESG performance is influenced by many factors beyond the governance attributes tested. While this reflects the multidimensional nature of ESG, the significant effect of sustainability assurance underscores its substantive role in Indonesia's evolving institutional context. The t-test results further confirm that only sustainability assurance positively affects ESG performance ($t = 3.413$, $p = 0.001$), whereas board gender diversity and ownership concentration show no significant impact.

Table 3. Goodness of Fit Test Results

Variables	β	t test	significance
Constanta	0.152	1.588	0.114
BGD	0.098	0.735	0.464
OWN	0.133	0.814	0.417
ASSUR	0.164	3.413	0.001
Adjusted R^2	0.068		
ESG P as dependent variable			

Note: author's own source

Based on Table 3, so the multiple regression analysis as follows.

$$ESGP_{it} = 0.152 + 0.098 BGD_{it} + 0.133 OWN_{it} + 0.164 ASSUR_{it} + \epsilon_{it}$$

4.4. The Effect of Board Gender Diversity on ESG Performance

The results of this study indicate that board gender diversity has no significant effect on ESG performance. From the lens of stakeholder theory (Freeman, 2010), female representation on corporate boards should enhance legitimacy through inclusive and socially responsible decision-

making. However, in Indonesia, this relationship appears weak, as women on boards may lack sufficient influence in deliberations or strategic committees that directly affect sustainability outcomes. This finding aligns with prior evidence from emerging markets showing that gender diversity often reflects regulatory compliance or reputational considerations rather than substantive governance power (Nerantzidis et al., 2022; Wasiuzzaman & Subramaniam, 2023; Yarram & Adapa, 2021). It also resonates with García-Sánchez et al. (2022), who noted that gender-diverse boards may increase disclosure likelihood without guaranteeing improvements in ESG performance. Overall, these results suggest that structural diversity alone is insufficient; its effectiveness depends on whether female directors are granted real authority and supported by institutional frameworks that prioritize stakeholder-oriented governance.

4.5. The Effect of Ownership Structure on ESG Performance

The findings show that ownership concentration has no significant effect on ESG performance. From a stakeholder theory perspective (Freeman, 2010), concentrated ownership could, in principle, enhance monitoring and align corporate behavior with long-term sustainability. However, in Indonesia, where corporate ownership is often dominated by families or controlling shareholders, the priority tends to be short-term financial gains and private benefits rather than broader stakeholder concerns. This result is consistent with prior studies in both emerging and developed markets, which found that concentrated ownership does not necessarily improve ESG outcomes (Liang & Renneboog, 2020; Nerantzidis et al., 2022; Oh et al., 2011; Velte, 2019; Wasiuzzaman & Subramaniam, 2023). Taken together, these findings suggest that in contexts with weak institutional enforcement, ownership concentration reflects entrenchment rather than stakeholder orientation. Thus, improving ESG performance requires governance mechanisms beyond concentrated monitoring power, particularly alignment between shareholder incentives and sustainability goals.

4.6. The Effect of Sustainability Assurance on ESG Performance

The findings demonstrate that sustainability assurance has a significant positive effect on ESG performance. In line with stakeholder theory (Freeman, 2010), assurance functions as a critical accountability mechanism that reduces information asymmetry, mitigates the risk of greenwashing, and strengthens the credibility of ESG disclosures. By engaging independent third-



party verifiers, firms signal a strong commitment to transparency and long-term value creation. This result is consistent with prior evidence showing that assurance enhances the reliability of sustainability reports and improves stakeholder trust across various contexts (Braam & Peeters, 2023; Casey & Grenier, 2015; García-Sánchez et al., 2022; Hodge et al., 2009; Khan et al., 2022; Simnett et al., 2009). In Indonesia, where regulatory frameworks for ESG reporting are still evolving, these findings underscore that assurance provides more substantive value than structural governance attributes. Overall, the significant effect observed confirms that embedding sustainability assurance into corporate governance frameworks is essential for improving ESG performance and aligning corporate practices with sustainable development goals.

5. CONCLUSION

This study investigates the influence of board gender diversity, ownership concentration, and sustainability assurance on ESG performance using a sample of firms listed in the ESG Leaders Index during 2020–2024. The findings reveal that board gender diversity and ownership concentration do not significantly affect ESG performance, suggesting that structural governance attributes alone are insufficient to drive sustainability outcomes in the Indonesian context. In contrast, sustainability assurance exerts a significant positive effect, confirming its role as a credible accountability mechanism that enhances the reliability of ESG disclosures and strengthens stakeholder trust. These results extend Stakeholder Theory by showing that while symbolic governance structures may have limited influence, assurance mechanisms provide substantive value in aligning corporate practices with stakeholder expectations.

6. IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH

While this study provides novel evidence from Indonesia, its scope is limited to firms included in the ESG Leaders Index, which may restrict generalizability to other sectors or smaller firms. Future research could extend the analysis by incorporating cross-country comparisons, examining industry-specific dynamics, or evaluating the moderating role of institutional quality in the relationship between governance attributes and ESG performance.



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