

# Corporate Governance Mechanisms, Gender Diversity, and Firm Value: Environmental Social Governance as Moderating Variable

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## ABSTRACT

The research aimed to analyze the influence of corporate governance mechanisms and gender diversity on firm value, as well as the moderating role of Environmental, Social, and Governance (ESG) in this relationship. Corporate governance mechanisms were proxied by managerial ownership, institutional ownership, the audit committee, and the independent commissioner. The sample was selected using a purposive sampling method, covering 27 companies included in the ESG Leader index on the Indonesia Stock Exchange, with complete Bloomberg ESG data in 2020–2023. The research obtained a total of 108 panel data observations. The research employed moderated regression analysis with panel data using the Fixed Effect Model (FEM), while generalized least squares corrected heteroskedasticity and autocorrelation to ensure robust and efficient estimations. The research results show that simultaneously, corporate governance mechanisms and gender diversity have a significant effect on firm value. However, partially, only managerial ownership, independent commissioner, and ESG score have a significant positive effect. ESG fails to strengthen the relationships between managerial ownership, institutional ownership, and gender diversity and firm value. Instead, it weakens the effects of the audit committee and the independent commissioner. The research employs Bloomberg ESG scores, offering standardized measurement beyond prior self-reported Corporate Social Responsibility (CSR) or sector-specific samples. The implications of the research emphasize the importance of ESG integration in strategic governance and the need to improve the quality of supervision and more substantive gender empowerment in the company's organizational structure.

**Keywords:** corporate governance, gender diversity, firm value, Environmental, Social, and Governance (ESG)

## INTRODUCTION

Corporate governance plays a crucial role in shaping the relationship between a company and its stakeholders, both internal (management and shareholders) and external (financial institutions, tax authorities and financial regulators) ensuring transparency, accountability, and ethical decision-making, which ultimately enhances the firm value and performance (Sewpersadh, 2022; Hamidah & Arisukma, 2020; Merendino & Melville, 2019). By ensuring transparency and ethical decision-making, corporate governance mechanisms are expected

to reduce agency conflicts and ultimately enhance firm performance and value. In the Indonesian context, where capital markets are still developing and ownership structures are often concentrated, the role of governance becomes even more critical in building investor confidence and maintaining long-term corporate resilience. Corporate governance mechanisms are designed to improve company performance and firm value while mitigating issues such as earnings management, which can harm shareholder interests (Maulana et al., 2022; Merendino & Melville, 2019).

Within the internal mechanisms of corporate

governance, managerial ownership can improve the company's productivity by motivating managers through incentives to achieve corporate goals (Al-Shouha et al., 2024; Sudiyatno et al., 2022). According to agency theory by Jensen and Meckling (1976), managerial ownership can reduce the conflicts of interest in a company, which is caused by a situation where the agent who acts as the authorized party has more knowledge about the situation in a company compared to the principal who is the party that grants authority (Puspaningsih et al., 2024; Agustina & Nariman, 2022). Managers who also act as shareholders will be more careful in making decisions. Thus, they focus on long-term performance, which is in line with stewardship theory that benefits the company (Tun et al., 2024) and increases its value (Ifada et al., 2021). Managers who hold shares are more motivated to make investment decisions that can enhance firm value (Al-Shouha et al., 2024). Previous research has shown that high managerial ownership in a company improves management performance, increases investor confidence, and enhances firm value (Al-Shouha et al., 2024; Sadaa et al., 2023; Ifada et al., 2021). Based on the above considerations, the hypothesis is formulated as follows:

H1: Managerial ownership has a positive effect on firm value.

A company's long-term goal is primarily to increase its value, thereby attracting investors (Ifada et al., 2021). Institutional investors, typically large entities such as banks, non-governmental organizations, pension fund managers, and investment fund managers, both domestically and abroad (Maulana et al., 2022), hold shares referred to as institutional ownership, which can influence management decisions (Prasetya & Carolina, 2023). Institutional ownership plays an important role in monitoring a company's operational activities (Alawi, 2024). Institutional ownership typically has a larger ownership concentration than managerial ownership, allowing it to provide stronger motivation to increase firm value by monitoring managers' opportunistic behavior (Gerged et al., 2023). This large ownership concentration enables institutional owners to have significant influence over management oversight and reassure outside investors about the benefits and safety of their investments (Sudiyatno et al., 2022). Increased management oversight and investor confidence, in turn, drive the optimization of firm value (Wibowo et al., 2021). Previous research has shown that institutional ownership plays an effective supervisory role that can prevent managers' opportunistic behavior and protect shareholder interests (Alawi, 2024; Setiany et al., 2023). Therefore, understanding the dynamics between these two types of ownership is essential, as they can affect the company's performance in achieving corporate goals, ultimately enhancing firm value (Setiany et al., 2023). Based on the previous research, the hypothesis is formulated as follows:

H2: Institutional ownership has a positive effect on firm value.

In addition to managerial ownership, another internal corporate governance mechanism is the audit committee, which can drive company performance by minimizing managerial opportunism (Prasetya & Carolina, 2023). An audit committee with expertise in auditing and accounting serves as an extension of the board of commissioners, providing insights into the directors' work and acting as a bridge between management and external auditors (Maulana et al., 2022). The audit committee is established by the board of commissioners to assist in carrying out its duties and is a key component of corporate governance that can improve transparency in financial reporting (Ferriswara et al., 2022). The audit committee possesses audit and accounting knowledge, enabling it to provide management with an overview of the company's condition and to enhance investor confidence that the financial statements presented are accurate (Maulana et al., 2022). In addition, the audit committee is responsible for overseeing the financial reporting process, ensuring the quality of financial reports, and supervising external auditors (Sewpersadh, 2022; Indarti et al., 2021; Widhiadnyana & Wirama, 2020; Al-Okaily & Naueihed, 2020). This oversight, which improves the quality of financial reports, enhances investor confidence and increases firm value. Previous research has shown that an effective audit committee improves the quality of financial information, ultimately enhancing company performance and firm value (Hezabr et al., 2023; Al-Okaily & Naueihed, 2020). Based on the explanation, the hypothesis is formulated as follows:

H3: Audit committee has a positive effect on firm value.

According to Sewpersadh (2022), the audit committee should consist of independent non-executive directors to prevent management from deviating from their duties, which can adversely affect shareholder interests. However, in Indonesia, for publicly listed companies, the audit committee must be chaired by an independent commissioner and include at least two independent commissioners or other external members (Badan Pengawas Pasar Modal dan Lembaga Keuangan, 2012). To reduce conflicts of interest and ensure effective corporate oversight, the company is recommended to integrate board structures, include independent directors, and separate the roles of CEO and board chair (Aguilar & Maciel, 2019). The presence of independent commissioners, who are not related to management, commissioners, or shareholders, can balance management influence through oversight functions, ensuring fairness and impartiality in decision-making and improving management performance (Humairoh & Nurulita, 2022; Ferriswara et al., 2022). Independent commissioners can act as supervisors because they are

not directly involved in the company's operational activities. An independent board of commissioners usually has good management insights that can increase the firm value of a company (Ferriswara et al., 2022). They can provide more objective oversight of management decisions, reduce conflicts of interest, and ensure that decisions align with shareholder interests (Harlia & Sutrisno, 2022). With independent commissioners, transparency and accountability functions in corporate governance are improved. Increased transparency and accountability in corporate governance will also enhance the company's ability to improve performance, ultimately increasing firm value (Pamungkas et al., 2023). Previous research has shown that companies with independent boards have lower business risks because they can reduce deviant managerial behavior (Bukari et al., 2024; Setiany et al., 2023; Dwiarti et al., 2022). Moreover, companies are more trusted by investors as they consider social expectations when making decisions (Bukari et al., 2024). Based on the above considerations, the hypothesis is formulated as follows:

H4: Independent commissioner has a positive effect on firm value.

Previous studies have shown that good corporate governance practices benefit business value and efficiency (Tun et al., 2024) and contribute to organizational sustainability and long-term success (Ferriswara et al., 2022; Farida et al., 2019). Research indicates that including women on the board of directors can enhance financial performance and improve corporate governance practices, corporate social responsibility, and overall company reputation, reflecting a commitment to equality and social diversity (Ahmad et al., 2024; Alawi, 2024; Abbas & Frihatni, 2023; Wang, 2020; Hatane et al., 2019). The presence of women on boards is essential because they can provide different perspectives in leadership styles and make the decision-making process more diverse (Gerged et al., 2023). According to Yarram and Adapa (2024), the presence of women on boards positively impacts company performance by improving risk management, decision-making, and financial outcomes. Additionally, having female directors, whether independent or board members, can reduce the risk of financial distress and bankruptcy, thereby enhancing board effectiveness (Ali et al., 2023; Guizani & Abdalkrim, 2023). Women's characteristics offer a different perspective from men in running a company, as they are more environmentally and socially concerned and tend to avoid risks, making them more cautious in decisions that could harm society (Yahya, 2025). Previous research has shown that the presence of women on boards can help to reduce agency conflicts between shareholders and managers because they provide better oversight and are more meticulous in monitoring management (Ahmad et al., 2024). Additionally, they can improve company performance because they are more involved in operational

activities compared to men (Alawi, 2024). Although some studies show a positive relationship between gender diversity and firm value, others present mixed results, highlighting the complexity of the issue (Ali et al., 2023). Based on the explanations, the hypothesis is formulated as follows:

H5: Gender diversity has a positive effect on firm value.

Despite its growing importance, ESG research in emerging markets, including Indonesia, remains fragmented and inconsistent. Numerous studies emphasize the importance of Corporate Social Responsibility (CSR) activities and ownership structures in influencing company performance and value, particularly in developing countries where governance systems are still evolving and face challenges (Alawi, 2024). Investor perceptions are influenced by market performance and CSR efforts, reflected in stock prices (Ifada et al., 2021). Tobin's Q measures firm value by comparing market to book value, indicating how effectively management utilizes economic resources (Robiyanto et al., 2019). According to Wibowo et al. (2021), maximizing shareholder wealth can be achieved by enhancing firm value through investment, financing, and dividend policies.

Prior studies often focus on specific industries such as manufacturing or banking, and many rely on self-reported CSR indicators that may lack comparability and credibility (Bukari et al., 2024; Maulana et al., 2022; Abdelkader et al., 2024). Research on African manufacturing firms shows that governance mechanisms (e.g., gender diversity, foreign directors) positively impact firm value, a finding reinforced by ESG performance (Bukari et al., 2024). Conversely, studies on Indonesian banks find that governance negatively affects firm value (Maulana et al., 2022). ESG adoption in developing countries remains inconsistent (Abdelkader et al., 2024). Moreover, limited attention has been paid to the moderating role of ESG in the relationship between governance mechanisms, gender diversity, and firm value, particularly across multi-industry contexts. It creates an important research gap, as ESG performance may alter the strength and direction of these relationships, offering new insights into how sustainability dimensions interact with traditional governance mechanisms. ESG refers to the non-financial aspects of a company that are crucial to investor decision-making, as they contribute to better corporate performance and sustainability (Zawawi et al., 2023). Consequently, the Indonesian government, through the Financial Services Authority (Otoritas Jasa Keuangan), has implemented regulations for financial institutions, issuers, and public companies regarding sustainable finance, including corporate governance principles outlined in POJK No. 51/POJK.03/2017. Under this regulation, OJK mandates sustainability reports for financial firms (Otoritas Jasa Keuangan,

2017).

ESG disclosure positively affects firm value by increasing transparency, accountability, and stakeholder trust, ultimately enhancing firm value by emphasizing social and ethical values (Fuadah et al., 2022). ESG has a broader scope than CSR because it includes governance aspects, whereas CSR focuses solely on environmental and social aspects (Shahrin et al., 2023). According to Ifada et al. (2021), CSR disclosure mediates the effect of managerial ownership on firm value. The presence of managerial ownership, a corporate governance mechanism, can motivate managers to improve social responsibility disclosures as part of the company's strategy to enhance its reputation and ultimately increase firm value (Ifada et al., 2021). Based on the above considerations, the hypothesis is formulated as follows:

H6: ESG strengthens the relationship between managerial ownership and firm value.

Institutional ownership can exert stronger monitoring to prevent managers' opportunistic behavior driven by conflicts of interest, thereby minimizing misuse and potentially increasing firm value (Setiyan et al., 2023; Harlia & Sutrisno, 2022). Additionally, in carrying out activities involving social responsibility (CSR), institutional ownership, as one of the corporate governance mechanisms, can guide and provide input to improve public legitimacy (Harlia & Sutrisno, 2022). Based on the explanation, the hypothesis is formulated as follows:

H7: ESG strengthens the relationship between institutional ownership and firm value.

ESG disclosure positively affects company performance, and the strength of ESG increases firm value (Shahrin et al., 2023). The audit committee is responsible for overseeing both financial and non-financial reporting processes, reducing information asymmetry, and improving disclosure quality (Fuadah et al., 2022; Harlia & Sutrisno, 2022; Sewpersadh, 2022). By integrating ESG considerations into its supervisory role, the audit committee can increase firm value by ensuring transparency, reducing risk, and improving overall performance, ultimately benefiting the company and its stakeholders (Fuadah et al., 2022). Based on the above considerations, the hypothesis is formulated as follows:

H8: ESG strengthens the relationship between the audit committee and firm value.

Next, independent commissioners provide effective supervision and control that positively affects firm value (Harlia & Sutrisno, 2022). By integrating ESG considerations into their supervisory role, independent commissioners can increase firm value by ensuring transparency, reducing risk, and improving overall performance. It ultimately benefits

the company and its stakeholders (Fuadah et al., 2022). Based on the explanations, the hypothesis is formulated as follows:

H9: ESG strengthens the relationship between independent commissioners and firm value.

ESG performance can serve as a mediator between gender diversity and company performance by emphasizing the importance of ESG factors in enhancing overall firm value (Nguyen et al., 2023). Gender diversity is one of the ESG criteria that emphasizes women's empowerment and equal opportunities in decision-making (Zawawi et al., 2023). Based on the above considerations, the hypothesis is formulated as follows:

H10: ESG strengthens the relationship between gender diversity and firm value.

The research contributes to filling that gap by introducing several novel aspects. First, it employs Bloomberg ESG scores as an external and standardized measure of sustainability performance, thereby reducing subjectivity and inconsistency associated with self-reported CSR data. Second, the research examines firms listed as ESG Leaders on the Indonesia Stock Exchange across multiple industries, providing a broader and more representative analysis compared to prior studies limited to specific sectors. Third, it integrates corporate governance mechanisms such as managerial ownership, institutional ownership, audit committee, and independent commissioner, together with gender diversity and ESG, into a single analytical framework. This holistic approach allows for a comprehensive assessment of how both traditional and contemporary governance elements jointly influence firm value in an emerging market setting. The conceptual framework for the research, illustrating the hypothesized relationships among corporate governance mechanisms, gender diversity, ESG, and firm value, is presented in Figure 1.

The research objective is twofold. First, it is to empirically examine the effects of corporate governance mechanisms and gender diversity on firm value in ESG Leader firms in Indonesia. Second, it aims to investigate whether ESG performance moderates these relationships, either strengthening or weakening the impact of governance and diversity on firm value. By doing so, the researchers not only advance theoretical debates rooted in agency theory, stewardship theory, and critical mass theory but also provide practical implications for managers, regulators, and investors seeking to align corporate governance with sustainability goals in emerging economies.

## METHODS

The research employs a quantitative research

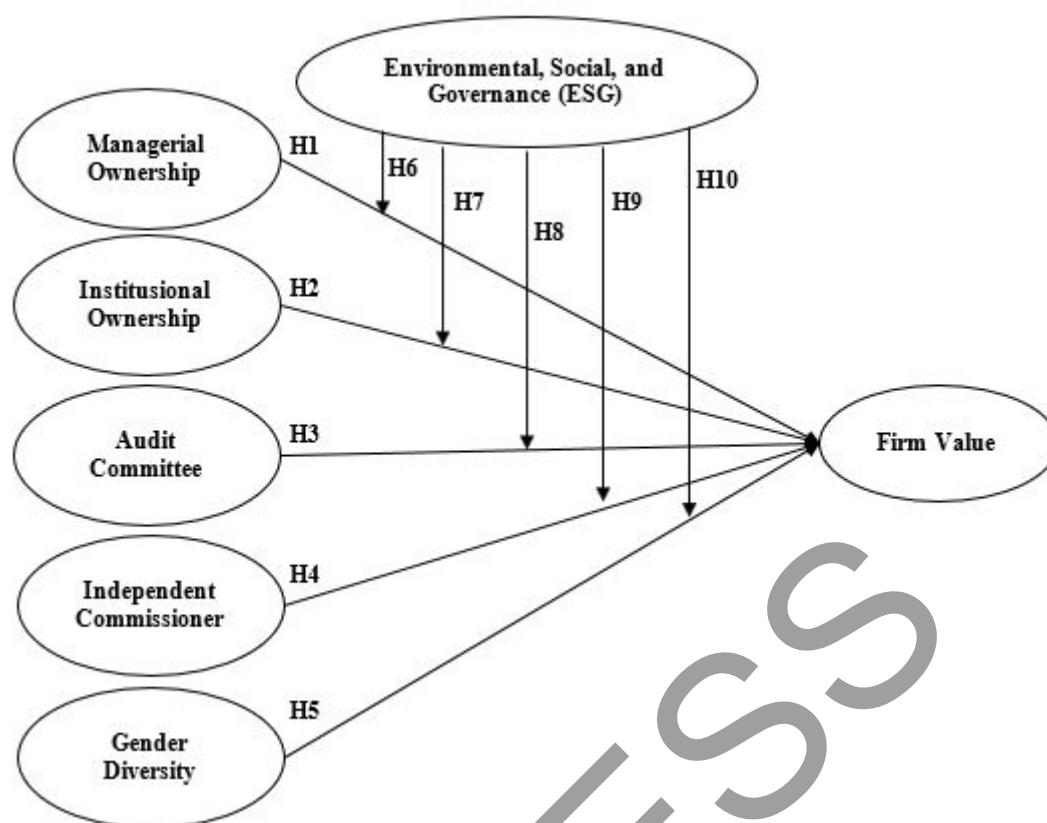


Figure 1 Research Model

Table 1 Sample Company Types

| Industries                                                                   | Total     |
|------------------------------------------------------------------------------|-----------|
| Commercial Banks                                                             | 5         |
| Real Estate                                                                  | 4         |
| Commercial Support Services                                                  | 3         |
| Consumer Discretionary Retail and Wholesale                                  | 3         |
| Electronics Manufacturing Services (EMS)/ Original Design Manufacturer (ODM) | 3         |
| Transport Operations and Services                                            | 2         |
| Cement                                                                       | 2         |
| Apparel Manufacturers and Retailers                                          | 2         |
| Home Products and Personal Care Products                                     | 1         |
| Tobacco                                                                      | 1         |
| Oil and Gas                                                                  | 1         |
| <b>Total</b>                                                                 | <b>27</b> |

method to examine the influence of corporate governance mechanisms and gender diversity on firm value, with ESG performance as a moderating variable. The population consists of companies listed on the Indonesia Stock Exchange (IDX). A purposive sampling method is applied with the following criteria: (i) continuously listed in IDX from 2020 to 2023, (ii) included in the ESG Leaders Index during the observation period, and (iii) possessed complete ESG scores available from Bloomberg Terminal. Based on these criteria, 27 companies are selected (as presented

in Table 1), yielding 108 firm-year observations in the form of dated panel data (Sihombing, 2022).

To ensure clarity and replicability, the research adopts well-established definitions and measurement proxies for all research variables. The dependent variable in the research is firm value which measured using Tobin's Q. Furthermore, the independent variables are represented by managerial ownership, institutional ownership, audit committee, independent commissioner, and gender diversity. In addition, the moderating variable is measured by ESG score.

Table 2 Operational Definition and Measurement of Variables

| Variables                     | Operational Definitions                                                                                                   | Measurement/Proxy                                                                                       |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Managerial Ownership (MO)     | The proportion of shares owned by directors and commissioners.                                                            | MO = number of shares owned by management / outstanding total shares                                    |
| Institutional Ownership (IO)  | The proportion of shares owned by institutional investors, such as banks, pension funds, or investment firms.             | IO = number of shares owned by institution / outstanding total shares                                   |
| Audit Committee (AC)          | The governance body assisting the board in overseeing financial reporting and compliance.                                 | AC = number of committee audits / total number of board of directors                                    |
| Independent Commissioner (IC) | Commissioners not affiliated with management, shareholders, or other commissioners, ensuring objectivity in monitoring.   | IC = number of independent commissioners / total number of board of commissioners                       |
| Gender Diversity (GD)         | Representation of female directors in the boardroom, indicating inclusivity and diverse perspectives.                     | GD = number of female members on the directors' board / total directors                                 |
| Firm Value (FV)               | The firm's market performance relative to its book value, reflecting investor perceptions of future growth.               | Tobin's Q = (MVE + debt)/total asset, MVE (Market Value of Equity) = closing price × outstanding shares |
| ESG Score (ESG)               | Composite index assessing a firm's environmental, social, and governance practices as an external sustainability measure. | ESG score obtained from Bloomberg Terminal                                                              |

Table 2 summarizes the operational definitions and measurement approaches.

The research uses panel data regression to capture variations across firms and over time. Prior to hypothesis testing, descriptive statistics are conducted to summarize the characteristics of each variable. Next, the appropriate panel data estimation model is selected. The three types of panel data models are the Pooled OLS or Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) (Gujarati & Porter, 2009). Then, to determine the most appropriate regression model, the researchers employ the Chow test, Hausman test, and Breusch-Pagan Lagrange Multiplier (LM) test (Sihombing, 2022; Kusumaningtyas et al., 2022). The Chow test is used to compare the CEM and FEM. Meanwhile, the Hausman test is conducted to compare the FEM with the REM. Lastly, the Breusch-Pagan LM test is utilized to compare the REM and the CEM (Asteriou & Hall, 2021; Savitri et al., 2021).

After selecting the appropriate panel data regression model, classical assumption tests are conducted. According to Basuki and Yuliadi (2015), for panel data regression, it is sufficient to perform tests for multicollinearity and heteroscedasticity. Multicollinearity is assessed using pairwise correlations; a correlation coefficient below 0.85 between independent variables indicates the absence of multicollinearity (Napitupulu et al., 2021). Heteroscedasticity, on the other hand, is examined through residual plots. If the residual values fall within the range of -500 to 500, it can be concluded that there is no heteroscedasticity issue (Napitupulu et al., 2021). The FEM uses the Generalized Least Squares (GLS) method to accommodate heteroscedasticity and autocorrelation, as GLS effectively addresses these issues and produces more accurate and efficient

estimates compared to Ordinary Least Squares (OLS) (Gujarati & Porter, 2009).

Moreover, the research applies the Moderated Regression Analysis (MRA) method to test the moderating effect of ESG on the relationship between corporate governance mechanisms, gender diversity, and firm value, using statistical software. The following regression equations are estimated sequentially: base model (without ESG) in Equation (1), direct Effect of ESG in Equation (2), and MRA in Equation (3). The equations show  $i$  as firm,  $t$  as year,  $\alpha$  as constant,  $\beta$  as coefficient of the independent variable,  $e_{it}$  as error term,  $FV_{it}$  as firm value,  $MO_{it}$  as managerial ownership,  $IO_{it}$  as institutional ownership,  $AC_{it}$  as audit committee,  $IC_{it}$  as independent commissioner,  $GD_{it}$  as gender diversity, and  $ESG_{it}$  as ESG.

$$FV_{it} = \alpha + \beta_1 MO_{it} + \beta_2 IO_{it} + \beta_3 AC_{it} + \beta_4 IC_{it} + \beta_5 GD_{it} + e_{it} \quad (1)$$

$$FV_{it} = \alpha + \beta_1 MO_{it} + \beta_2 IO_{it} + \beta_3 AC_{it} + \beta_4 IC_{it} + \beta_5 GD_{it} + \beta_6 ESG_{it} + e_{it} \quad (2)$$

$$FV_{it} = \alpha + \beta_1 MO_{it} + \beta_2 IO_{it} + \beta_3 AC_{it} + \beta_4 IC_{it} + \beta_5 GD_{it} + \beta_6 ESG_{it} + \beta_7 MO*ESG_{it} + \beta_8 IO*ESG_{it} + \beta_9 AC*ESG_{it} + \beta_{10} IC*ESG_{it} + \beta_{11} GD*ESG_{it} + e_{it} \quad (3)$$

Once the classical assumption tests are completed, hypothesis testing is carried out using three statistical tests. The F-test for joint effects at a 5% significance level is used to assess the simultaneous effect of all independent variables on the dependent variable. The coefficient of determination ( $R^2$ ) is used to assess model explanatory power. Finally, the t-test is conducted to evaluate the partial effect of each individual independent variable on the dependent variable. A variable is considered significant if its

p-value is less than 0.05 or its t-statistic exceeds the critical value (Gujarati & Porter, 2009). Then, hypotheses predicting positive relationships are supported if estimated coefficients are positive and statistically significant (Asteriou & Hall, 2021). Meanwhile, moderation is confirmed if interaction terms significantly strengthen or weaken the baseline relationships (Asteriou & Hall, 2021).

## RESULTS AND DISCUSSION

Table 3 shows that the average managerial ownership in the sample is 1.86%, with a maximum value of 44.07% and a very low median of 0.08%. It indicates that most companies have a low level of managerial ownership, and only a few companies have a high level of managerial ownership. In contrast, institutional ownership has a high average value of 74.22%, with a median of 89.06% and a maximum value reaching 99.92%. The result shows that institutional ownership dominates the ownership structure of companies in the sample, indicating the trust and active involvement of institutional investors in company management. Meanwhile, audit committee has an average value of 51.18%, with a maximum value of 83.33% and a minimum of 25%. It shows that most companies have at least three audit committee members, which is the minimum standard required by capital market regulations. independent commissioner has an average of 48% with a maximum value of 83.33%. This result shows that almost half of the board of commissioners in the sample companies are independent, reflecting a relatively good level of corporate governance. Gender diversity has an average value of 28.5%. It means that around 28.5% of board of directors positions are filled by women. The

maximum value of 66.67% indicates that companies are quite progressive in implementing gender diversity, although the median is only 25%. The result indicates that gender diversity is still not evenly distributed across companies. Then, firm value, measured by Tobin's Q, has an average of 1.7427, with a fairly high variation between the minimum value of 0.3053 and the maximum of 14.4147. This result indicates a fairly large disparity in company value between the samples. Last, the ESG shows an average value of 2.7222, with a maximum of 4.76 and a minimum of 0.92. This value indicates an assessment of the company's ESG performance, with most companies showing moderate to high levels.

Table 4 summarizes the results of model selection tests, showing that the Chow, Hausman, and LM tests consistently favor the FEM for Equations (1)–(3). The significance values for all tests are below 0.05. The results indicate that FEM is more appropriate than both the CEM and REM. Therefore, FEM is selected as the most suitable regression model for all equations in the research.

Table 5 presents the results of the multicollinearity test using pairwise correlation values. All variables show correlation coefficients below 0.85, suggesting that there is no indication of severe multicollinearity within the model. The results imply that the independent variables are not highly correlated with each other. Therefore, each variable can independently explain variations in the dependent variable without causing bias in the regression estimation. Consequently, the regression model can be considered statistically reliable and valid for further analysis. The findings align with the criteria proposed by Napitupulu et al. (2021).

Table 3 Result of Descriptive Statistics

| Variable                 | Mean   | Median | Maximum | Minimum |
|--------------------------|--------|--------|---------|---------|
| Managerial Ownership     | 0.0186 | 0.0008 | 0.4407  | 0.0000  |
| Institutional Ownership  | 0.7422 | 0.8906 | 0.9992  | 0.2439  |
| Audit Committee          | 0.5118 | 0.5000 | 0.8333  | 0.2500  |
| Independent Commissioner | 0.4800 | 0.5000 | 0.8333  | 0.2857  |
| Gender Diversity         | 0.2850 | 0.2500 | 0.6667  | 0.1000  |
| Firm Value               | 1.7427 | 1.1942 | 14.4147 | 0.3053  |
| ESG                      | 2.7222 | 2.7000 | 4.7600  | 0.9200  |

Table 4 Result of Panel Data Regression Model Selection Test

| Tests                         | (1)                         | (2)                         | (3)                         |
|-------------------------------|-----------------------------|-----------------------------|-----------------------------|
| Chow test                     | 0.0000                      | 0.0000                      | 0.0000                      |
| Hausman test                  | 0.0229                      | 0.0099                      | 0.0036                      |
| Lagrange Multiplier (LM) test | 0.0000                      | 0.0000                      | 0.0080                      |
| Model selected                | Fixed Effect Model<br>(FEM) | Fixed Effect Model<br>(FEM) | Fixed Effect Model<br>(FEM) |

Table 5 Result of Multicollinearity Test

|               | MO     | IO     | AC     | IC     | GD     | ESG  | MO*ESG | IO*ESG | AC*ESG | IC*ESG | GD*ESG |
|---------------|--------|--------|--------|--------|--------|------|--------|--------|--------|--------|--------|
| <b>MO</b>     | 1.00   |        |        |        |        |      |        |        |        |        |        |
| <b>IO</b>     | 0.13   | 1.00   |        |        |        |      |        |        |        |        |        |
| <b>AC</b>     | (0.26) | (0.29) | 1.00   |        |        |      |        |        |        |        |        |
| <b>IC</b>     | (0.20) | (0.08) | (0.26) | 1.00   |        |      |        |        |        |        |        |
| <b>GD</b>     | 0.14   | 0.26   | 0.04   | 0.25   | 1.00   |      |        |        |        |        |        |
| <b>ESG</b>    | (0.24) | (0.02) | (0.11) | 0.26   | (0.12) | 1.00 |        |        |        |        |        |
| <b>MO*ESG</b> | 0.54   | (0.24) | (0.01) | (0.02) | 0.30   | 0.24 | 1.00   |        |        |        |        |
| <b>IO*ESG</b> | (0.12) | 0.71   | (0.33) | 0.16   | 0.08   | 0.65 | (0.09) | 1.00   |        |        |        |
| <b>AC*ESG</b> | (0.34) | (0.27) | 0.64   | (0.04) | (0.11) | 0.66 | 0.19   | 0.19   | 1.00   |        |        |
| <b>IC*ESG</b> | (0.28) | (0.02) | (0.25) | 0.75   | 0.13   | 0.81 | 0.14   | 0.56   | 0.38   | 1.00   |        |
| <b>GD*ESG</b> | (0.01) | 0.17   | (0.08) | 0.45   | 0.74   | 0.50 | 0.46   | 0.45   | 0.27   | 0.65   | 1.00   |

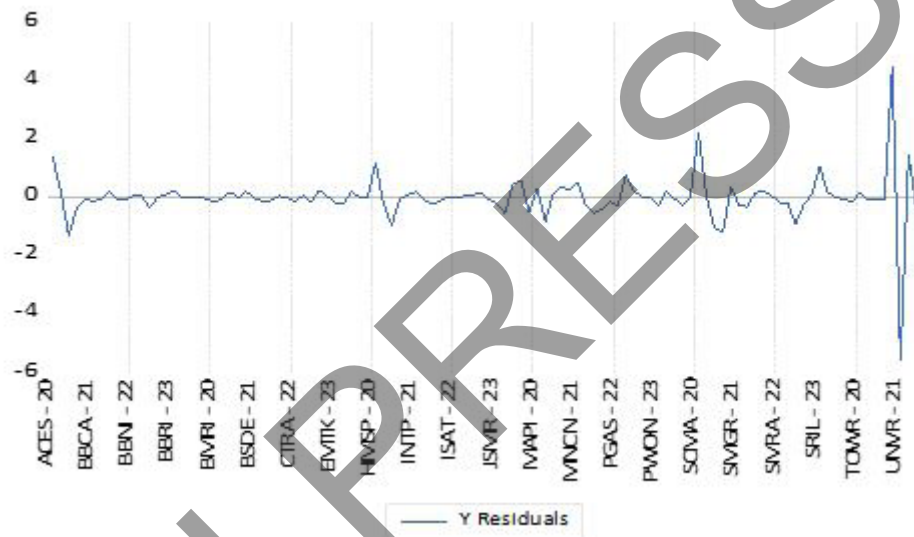


Figure 2 Result of Heteroscedasticity Test

Figure 2 illustrates the residuals from the heteroscedasticity test. They fall within the range of 500 and -500. The results indicate that the residual variance is relatively constant across observations. Therefore, it can be concluded that there is no heteroscedasticity problem in the data.

Table 6 shows that the results of the F-test, indicating that the probability values (Prob. F-statistic) for all models are 0.0000, which is lower than the significance level ( $\alpha = 0.05$ ). The result imply that the null hypothesis is rejected, confirming that the independent variables jointly have a significant effect on the dependent variable. In Equation (1), all independent variables jointly have a significant effect on the dependent variable. In Equation (2), the independent variables together with the moderating variable also significantly influence the dependent variable. Furthermore, in Equation (3), the combination of independent variables, the moderating variable,

and the interaction terms between the independent variables and the moderating variable collectively has a significant effect on the dependent variable.

Table 6 Result of F-Test

|                     | (1)    | (2)    | (3)    |
|---------------------|--------|--------|--------|
| Prob. (F-statistic) | 0.0000 | 0.0000 | 0.0000 |
| $\alpha$            | 0.0500 | 0.0500 | 0.0500 |

Table 7 shows the high adjusted R-square figure (90.83%–91.93%). This result indicates that the model can account for most of the variation in the dependent variable. However, the inclusion of interaction variables in Equation (3) results in a slight decline in the adjusted R-squared value.

Table 7 Result of R-Square Test

|                    | (1)    | (2)    | (3)    |
|--------------------|--------|--------|--------|
| Adjusted R-squared | 0.9193 | 0.9106 | 0.9083 |
| In %               | 91.93% | 91.06% | 90.83% |

Table 8 Regression Hypothesis Test Results

| Variable            | Coefficient | T-Value | P-Value | Conclusion                              |
|---------------------|-------------|---------|---------|-----------------------------------------|
| <b>Equation I</b>   |             |         |         |                                         |
| C                   | 1.2649      |         |         |                                         |
| MO                  | 34.7652     | 10.98   | -       | <b>The data support the hypothesis</b>  |
| IO                  | 0.1916      | 0.30    | 0.77    | The data do not support the hypothesis  |
| AC                  | (1.1950)    | (2.12)  | 0.04    | The data do not support the hypothesis* |
| IC                  | 0.2487      | 0.61    | 0.54    | The data do not support the hypothesis  |
| GD                  | 0.6349      | 0.79    | 0.43    | The data do not support the hypothesis  |
| <b>Equation II</b>  |             |         |         |                                         |
| C                   | 1.2768      |         |         |                                         |
| MO                  | 34.7688     | 10.59   | -       | <b>The data support the hypothesis</b>  |
| IO                  | 0.3082      | 0.45    | 0.66    | The data do not support the hypothesis  |
| AC                  | (1.2462)    | (2.25)  | 0.03    | The data do not support the hypothesis* |
| IC                  | 0.2918      | 0.60    | 0.55    | The data do not support the hypothesis  |
| GD                  | 0.6684      | 0.81    | 0.42    | The data do not support the hypothesis  |
| ESG                 | (0.0377)    | (1.21)  | 0.23    | The data do not support the hypothesis  |
| <b>Equation III</b> |             |         |         |                                         |
| C                   | (1.3022)    |         |         |                                         |
| MO                  | 31.2754     | 7.53    | -       | <b>The data support the hypothesis</b>  |
| IO                  | (0.5271)    | (0.70)  | 0.49    | The data do not support the hypothesis  |
| AC                  | 2.1924      | 1.94    | 0.06    | The data do not support the hypothesis  |
| IC                  | 3.8951      | 2.44    | 0.02    | <b>The data support the hypothesis</b>  |
| GD                  | 0.1362      | 0.06    | 0.96    | The data do not support the hypothesis  |
| ESG                 | 1.5748      | 2.75    | 0.01    | <b>The data support the hypothesis</b>  |
| MO*ESG              | (0.7859)    | (0.55)  | 0.58    | The data do not support the hypothesis  |
| IO*ESG              | (0.4312)    | (1.63)  | 0.11    | The data do not support the hypothesis  |
| AC*ESG              | (1.3738)    | (3.04)  | 0.00    | The data do not support the hypothesis* |
| IC*ESG              | (1.3125)    | (2.34)  | 0.02    | The data do not support the hypothesis* |
| GD*ESG              | 0.1373      | 0.15    | 0.88    | The data do not support the hypothesis  |

\*The data do not support the hypothesis, but it has an effect on the FV

Note: C: Constant, MO: Managerial Ownership, IO: Institutional Ownership, AC: Audit Committee, IC: Independent Commissioner, GD: Gender Diversity, and ESG: Environmental Social Governance.

Table 8 shows the result of the t-test. It shows that managerial ownership demonstrates a strong, positive, and statistically significant effect on firm value across all model specifications, with remarkably high coefficients (34.7652 in Equation (1); 34.7688 in Equation (2); 31.2754 in Equation (3); and all with p-values < 0.05). This finding strongly aligns with agency theory, suggesting that higher ownership stakes for managers effectively align their interests with those of shareholders, thereby incentivizing value-maximizing decisions. The consistency of this

result underscores managerial ownership as a critical governance mechanism for enhancing firm value in the studied context.

Contrary to managerial ownership, institutional ownership and gender diversity does not exhibit a significant effect on firm value. The coefficients are low and statistically insignificant across all equations. The results imply that the anticipated monitoring role of institutional investors, as postulated by agency theory, and the mere representation of women on the board of directors may not be significantly effective

as a driver of translating into tangible firm value increases in this sample.

Conversely, with managerial ownership, the audit committee exhibits a counterintuitive negative effect on firm value in both Equations (1) and (2) (coefficients of  $-1.1950$  and  $-1.2462$ , respectively, and with  $p\text{-value} < 0.05$ ), contradicting theoretical expectations. Even when its interaction is considered, the direct effect remains insignificant (coefficient of  $2.1924$  with  $p\text{-value} > 0.05$ ). The results suggest that, in this specific context, the presence and composition of the audit committee may be associated with operational inefficiencies or may function as a symbolic compliance mechanism more than an effective governance tool that enhances value.

The effect of independent commissioners is nuanced. The direct effect alone is insignificant ( $0.2487$  in Equation (1),  $0.2918$  in Equation (2), and with  $p\text{-value} > 0.05$ ). However, a significant positive direct effect emerges in Equation (3) (coefficient of  $3.8951$  and  $p\text{-value} < 0.05$ ), suggesting that independent oversight is value-relevant. The ESG score itself has a significant positive direct effect on firm value in the full model (coefficient of  $1.5748$  with  $p\text{-value} < 0.05$ , supporting its role as a value driver). However, its hypothesized moderating role (H6–H10) is largely unsupported.

The interaction terms for managerial ownership (MO\*ESG), institutional ownership (IO\*ESG), and gender diversity (GD\*ESG) are insignificant. Most notably, the interaction terms for audit committee (AC\*ESG) and independent commissioner (IC\*ESG) yield significant but negative coefficients ( $-1.3738$  and  $-1.3125$ ), indicating potential moderating complexities that diverge from initial hypotheses. These critical findings suggest that for these specific governance mechanisms, high ESG performance does not complement but rather weakens their effectiveness, potentially due to the complexities and costs of integrating stringent sustainability practices with traditional oversight functions. Collectively, these results underscore the nuanced role of governance structures, where direct effects (managerial ownership, independent commissioner, ESG) generally align with agency theory predictions. However, the interaction effects and the role of audit committees warrant further investigation to reconcile their unexpected negative impacts on firm value.

The regression results consistently demonstrate that managerial ownership significantly and positively influences firm value. H1 is accepted, aligning with prior studies (Al-Shouha et al., 2024; Sadaa et al., 2023; Ifada et al., 2021). According to Ifada et al. (2021), higher managerial ownership incentivizes managers to prioritize long-term performance, as their financial interests are directly tied to the firm's profitability. This result aligns with agency theory, which posits that managerial ownership reduces agency conflicts by aligning managers' and shareholders' interests (Jensen & Meckling, 1976). Additionally, stewardship theory supports this finding, suggesting that managers with

significant ownership stakes act as stewards of the firm, enhancing firm value through prudent decision-making (Ifada et al., 2021). However, contrary to expectations, ESG does not moderate the relationship between managerial ownership and firm value, possibly due to limited managerial involvement in ESG decision-making. Many firms treat ESG initiatives as cost centers rather than value drivers, reducing their moderating effect. Hence, H6 is rejected.

Unlike managerial ownership, institutional ownership does not significantly affect firm value. H2 is rejected. It supports prior research by Wibowo et al. (2021) and Farida et al. (2019). Institutional investors primarily serve a monitoring role rather than actively engaging in strategic decision-making, limiting their influence on firm value (Wibowo et al., 2021). This result contradicts agency theory, which suggests that dispersed ownership structures should mitigate agency conflicts and enhance firm value. Furthermore, ESG does not moderate the independent ownership-firm value relationship. H7 is rejected. The result diverges from findings by Fuadah et al. (2022) and Nugraheni et al. (2022). This discrepancy may stem from difficulties in quantifying ESG's financial impact, leading institutional investors to undervalue its long-term benefits.

The audit committee exhibits a counterintuitive negative effect on firm value. H3 is rejected. The result is consistent with Maulana et al. (2022). This result suggests that ineffective audit committees may introduce operational inefficiencies, reducing firm value. This finding contradicts agency and stewardship theories, which posit that strong oversight mechanisms should enhance transparency and firm performance. Moreover, ESG does not strengthen the audit committee-firm value relationship. H8 is also rejected, aligning with Marpaung et al. (2022) and Safitri et al. (2022). Since audit committees often focus on regulatory compliance rather than strategic ESG integration, their impact on firm value remains limited.

Similarly, independent commissioners do not influence firm value. H4 is rejected. This result supports the findings of Ferriswara et al. (2022). However, when interacting with ESG, independent commissioner has a positive effect, corroborating the findings of Bukari et al. (2024) and Dwiarti et al. (2022). Independent commissioners enhance corporate reputation by ensuring compliance with social norms, thereby increasing firm value. Paradoxically, ESG weakens the independent commissioner-firm value relationship. H9 is also rejected, as noted by Maulana et al. (2022). It may occur when independent commissioners enforce costly ESG mandates without considering profitability, negatively impacting firm performance.

Gender diversity does not significantly affect firm value. H5 is rejected, consistent with Yarram and Adapa (2024) and Wang (2020). The lack of critical mass in female board representation limits their influence on corporate decisions, aligning with

critical mass theory (Kanter, 1977). Moreover, the supervisory function carried out by female directors has proven ineffective because it is still hampered by investor perceptions and other external factors that are not in line with stewardship theory (Bunyaminu et al., 2025). Additionally, ESG does not moderate the gender diversity-firm value relationship. H10 is also rejected, contradicting Yahya (2025) and Ahmad et al. (2024). Symbolic rather than substantive inclusion of women in leadership roles diminishes their impact on ESG-driven value creation.

ESG has a significant positive influence on firm value, a finding consistent with Nguyen et al. (2023) and Bukari et al. (2024). The integration of ESG practices enhances corporate performance and delivers long-term benefits that offset the initial investment costs (Nguyen et al., 2023). Furthermore, firms adopting ESG demonstrate superior performance and long-term value creation by mitigating risks and improving corporate reputation, ultimately leading to higher firm value (Bukari et al., 2024).

The research provides an explanation regarding the influence of corporate governance mechanisms and gender diversity on firm value before and after being moderated by ESG. Managerial ownership can increase firm value because it encourages a focus on long-term performance, although the implementation of ESG has the potential to reduce short-term profits. Therefore, companies need to design balanced incentives so that managers remain committed to sustainability without sacrificing financial performance, one of which is through ESG cost management. On the other hand, passive institutional ownership and ineffective audit committees do not have a significant impact on firm value, so companies need to increase the involvement of institutional investors through strategic dialogue and re-evaluate the role and competence of the audit committee, especially in understanding risk and governance. Independent commissioners can increase investor confidence, but imposing expensive ESG standards actually risks reducing that confidence. The solution is that companies need to increase the transparency of ESG cost reporting and its long-term benefits. Meanwhile, gender diversity does not have a significant effect due to the low representation of women at the board of directors level, so companies are advised to adopt inclusive recruitment policies and career development programs for women to support ESG principles and improve reputation and firm value.

Corporate governance mechanisms proxied by managerial ownership, institutional ownership, audit committee, independent commissioner, and gender diversity have different effects on firm value, especially when moderated by ESG. ESG practices carried out by companies can bring both advantages and disadvantages to firm value. Meanwhile, implementation costs may reduce short-term profits. They can enhance firm value in the long run by boosting the company's prestige. Therefore, it is crucial for companies to develop business strategies

that align with ESG implementation to ensure long-term sustainability.

## CONCLUSIONS

The research addresses the problem of inconsistent findings on the effects of corporate governance, gender diversity, and ESG on firm value in emerging markets and the unclear role of ESG performance as a moderating factor. Using 108 observations from ESG-Leader firms in Indonesia (2020–2023), the results show that governance mechanisms and gender diversity jointly influence firm value. However, only managerial ownership, independent commissioners, and ESG have significant individual effects. Moreover, ESG weakens rather than strengthens the impact of audit committees and independent commissioners. These findings resolve the research gap by showing that ESG does not always reinforce governance mechanisms, but can alter or reduce their effectiveness.

Practically, several implications can be drawn. For companies, the findings emphasize the importance of carefully aligning ESG initiatives with governance structures to ensure that sustainability strategies contribute to, rather than undermine, firm value. For investors, the results suggest that ESG ratings should be interpreted with caution, as their interaction with governance mechanisms may produce mixed effects on financial performance. For regulators and policymakers, the research highlights the need to strengthen ESG reporting standards and ensure alignment between corporate governance codes and sustainability regulations, thereby creating a consistent framework that encourages long-term value creation.

The research has several limitations. First, the sample consists of only 27 companies listed in the ESG Leader index on the Indonesia Stock Exchange over four consecutive years, making the results not generalizable to all Indonesia Stock Exchange-listed companies. Second, the research period is limited to four years (2020–2023) due to the availability of ESG Leader data, meaning the results do not capture long-term impacts. Third, the ESG variable is based on Bloomberg's ESG measurement, without accounting for differences in ESG methodologies or indicator weightings. Fourth, the research does not consider external factors, such as macroeconomic conditions or government regulations.

Future research should expand the sample size and extend the research period to improve generalizability and capture long-term effects. Additionally, instead of relying solely on Bloomberg's ESG scores, researchers can apply a self-constructed ESG measurement using data from financial statements to provide a more detailed explanation of the ESG indicator weightings. It is also recommended to conduct sector-specific studies, as the weight and relevance of ESG practices vary across industries.

## AUTHOR CONTRIBUTIONS

Conceived and designed the analysis, F. M. and A.; Collected the data, F. M. and A.; Contributed data or analysis tools, F. M. and A.; Performed the analysis, F. M. and A.; and Wrote the paper, F. M. and A.

## DATA AVAILABILITY

The data (Managerial ownership, institutional ownership, audit committee, independent commissioner, gender diversity and firm value) that support the findings of the research are openly available in Indonesia Stock Exchange at <https://www.idx.co.id/id> in annual report and audit report.

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