

***THE EFFECT OF ESG DISCLOSURE ON FIRM VALUE: THE MODERATING  
ROLE OF MEDIA ATTENTION***

**PENGARUH PENGUNGKAPAN ESG TERHADAP NILAI PERUSAHAAN:  
PERAN MODERASI PERHATIAN MEDIA**

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**ABSTRACT**

*This study aims to examine the effect of ESG disclosure on firm value and to analyze the moderating role of media attention. Using panel data from 22 energy sector firms listed on the Indonesia Stock Exchange during 2022–2024, this research applies a purposive sampling technique and employs a Random Effects Model for regression analysis. Firm value is measured using Tobin's Q, ESG disclosure is proxied by a GRI-based index, and media attention is measured using the natural logarithm of news coverage. The findings indicate that ESG disclosure has a positive but marginally significant effect on firm value, suggesting limited value relevance. Furthermore, media attention does not significantly moderate the relationship, indicating that external information dissemination has not been fully interpreted by investors as a credible signal. This study contributes by incorporating media attention as an external moderating variable and providing empirical evidence from the Indonesian energy sector.*

**Keywords:** ESG Disclosure; Firm Value; Media Attention; Energy Sector; Emerging Markets.

**ABSTRAK**

Studi ini bertujuan untuk menguji pengaruh pengungkapan ESG terhadap nilai perusahaan dan menganalisis peran moderasi perhatian media. Menggunakan data panel dari 22 perusahaan sektor energi yang terdaftar di Bursa Efek Indonesia selama tahun 2022–2024, penelitian ini menerapkan teknik pengambilan sampel bertujuan dan menggunakan Model Efek Acak untuk analisis regresi. Nilai perusahaan diukur menggunakan Tobin's Q, pengungkapan ESG diwakili oleh indeks berbasis GRI, dan perhatian media diukur menggunakan logaritma natural dari liputan berita. Temuan menunjukkan bahwa pengungkapan ESG memiliki pengaruh positif tetapi signifikan secara marginal terhadap nilai perusahaan, menunjukkan relevansi nilai yang terbatas. Lebih lanjut, perhatian media tidak secara signifikan memoderasi hubungan tersebut, menunjukkan bahwa penyebaran informasi eksternal belum sepenuhnya ditafsirkan oleh investor sebagai sinyal yang kredibel. Studi ini berkontribusi dengan memasukkan perhatian media sebagai variabel moderasi eksternal dan memberikan bukti empiris dari sektor energi Indonesia.

**Kata Kunci:** Pengungkapan ESG; Nilai Perusahaan; Perhatian Media; Sektor Energi; Pasar Berkembang.

**INTRODUCTION**

Over the past few decades, the implementation of Environmental, Social, and Governance (ESG) principles has gained significant attention in global financial markets, driven by the increasing demand for sustainable business practices. The proportion of global investors incorporating ESG considerations into investment decisions increased from 84% in 2021 to 89% in 2022 (Ground, 2022), indicating that sustainability is no longer merely a moral concern but has become an economic factor influencing

risk assessment, investment decisions, and firm value.

The rising importance of ESG has encouraged firms to improve the quality of ESG disclosure as a signaling mechanism to diminish information asymmetry, enhance transparency, and strengthen investor confidence (Yulianti & Djatnicka, 2025). High-quality ESG disclosure is expected to improve corporate reputation and reflect a firm's long-term performance (Bushra et al., 2025). This is particularly relevant in high exposure sectors to sustainability risks, such as the energy sector, which

accounts for approximately 71% of global greenhouse gas emissions (CDP, 2017). Consequently, ESG disclosure in this sector has become a critical consideration for investors and other stakeholders.

In Indonesia, the energy sector plays a critical role in supporting economic development, including its significant contribution to Non-Tax State Revenue (PNBP), which reached IDR 269.5 trillion in 2024 (ESDM, 2025). Despite its economic importance, the sector faces increasing pressure to align with sustainability commitments, including the Net Zero Emissions 2060 target (Nasir & Bengi, 2024). The government has introduced several regulatory frameworks, such as POJK No. 51/POJK.03/2017 and SEOJK No. 16/SEOJK.04/2021, to strengthen ESG disclosure practices. However, the implementation of these policies has not been consistently followed by improvements in the reliability and credibility of ESG disclosure, resulting in variations across firms.

Several cases illustrate the gap between ESG disclosure and actual practices in the Indonesian energy sector. Environmental issues are reflected in allegations of greenwashing by PT Adaro Energy, while social concerns are evident in incidents such as the Plumpang Depot fire involving PT Pertamina and workplace accidents at PT Bukit Asam (BBC News, 2023; Binekasri, 2023; Wakik, 2022). From a governance perspective, corruption allegations involving PT Perusahaan Gas Negara Tbk further indicate weaknesses in transparency and internal control (Susanto & Perwitasari, 2025). These cases suggest that low-quality ESG disclosure can damage corporate reputation, reduce investor trust, and threaten firm value.

Prior studies examining the link between ESG disclosure and firm value have produced mixed results. Some studies find that ESG disclosure positively affects firm value (Aydoğmuş et al., 2022; Dorothy & Endri, 2024; Duan et al., 2023), while others report negative or insignificant relationships (Angir & Weli, 2024; Dzakiyani, 2026; Jizi, 2017). These inconsistencies indicate that the association between ESG disclosure and firm value remains inconclusive and requires further examination.

Furthermore, most existing studies focus on internal firm characteristics as moderating variables, such as firm size (Mumpuni & Hapsari, 2025), profitability (Nguyen & La, 2025), earnings management (Dwipa, et al., 2024), and ownership structure (S. Wu et al., 2022). In contrast, limited attention has been given to external factors that reflect public perception, such as media attention, particularly in the emerging markets context like Indonesia.

Media attention contributes significantly to shaping public perception influencing how information is disseminated to investors (Zheng et al., 2024). Prior studies suggest that media attention can amplify the influence of ESG on firm value (Chen & Chou, 2024). However, empirical findings remain inconsistent across countries and industries. In Indonesia, media attention related to energy transition and sustainability has increased significantly, indicating the increasing importance of media attention in influencing investor perceptions.

Based on these conditions, this study is intended to assess the impact of ESG disclosure on firm value, with media attention as a moderating variable, in energy sector companies listed on the Indonesia Stock Exchange during the 2022–2024 period. This study

contributes to the literature by incorporating media attention as an external moderating variable, thereby extending prior research that predominantly focuses on internal firm factors. In addition, this study offers empirical evidence from an emerging market context, particularly within the energy sector, which is characterized by high environmental risk and regulatory pressure.

This study is expected to provide practical implications for companies in improving ESG disclosure quality and communication strategies to enhance investor confidence, strengthen corporate legitimacy, and support sustainable value creation.

## **LITERATURE REVIEW**

### **Stakeholder Theory**

Stakeholder Theory, first introduced by R. Edward Freeman (1984), argues that a company's sustainability and success are not solely determined not only in terms of its capacity to generate returns for shareholders, but also in how effectively it creates value for all stakeholders involved (Freeman, 2010; Hörisch et al., 2014). These stakeholders include employees, customers, suppliers, government, investors, creditors, and the surrounding community. This perspective emphasizes that firms do not operate in isolation; rather, their existence is shaped by the expectations and perceptions of various stakeholder groups (Hörisch et al., 2014).

From this viewpoint, companies are embedded within a broader social system that requires a continuous balance between economic objectives and social responsibilities. Firms that prioritize only short-term financial gains risk losing public trust, legitimacy, and social support (Liang & Gao, 2025). Conversely, companies that actively

consider stakeholder interests and build mutually beneficial relationships are more likely to strengthen trust, enhance loyalty, and achieve long-term sustainability (Hörisch et al., 2014).

Furthermore, stakeholder relationships are not purely transactional but are grounded in ethical and moral considerations. This implies that companies have a responsibility to disclose not limited to financial data but also encompassing non-financial information, including ESG-related aspects, as a form of accountability to stakeholders (Behl et al., 2022). Such transparency contributes to strengthening corporate reputation and legitimacy.

In relation to ESG disclosure, Stakeholder Theory provides a strong rationale for why companies need to communicate their sustainability practices. ESG disclosure reflects a firm's commitment to responsible operations and its awareness of environmental and social impacts (Liang & Gao, 2025). By providing comprehensive ESG information, companies signal that they are not solely profit-driven but also committed to broader societal well-being, which in turn enhances stakeholder trust (Clark et al., 2015).

This theory is particularly relevant in the energy sector, where business activities often carry significant environmental and social consequences. Through ESG disclosure, energy companies can demonstrate accountability and commitment to sustainability, thereby meeting stakeholder expectations. This process helps strengthen corporate reputation, maintain public support, and ultimately contribute to increased firm value (Dorothy & Endri, 2024).

Thus, Stakeholder Theory offers a robust foundation for determining the

relationship between ESG disclosure and firm value. Firms that are able to align their disclosures with stakeholder expectations are more likely to gain legitimacy, improve performance, and create sustainable value.

### **Signaling Theory**

Signaling theory, introduced by Michael Spence (1973) through the concept of job market signaling, explains that parties with superior information (signal senders) convey signals to less-informed parties (signal receivers) to minimize information gaps (Spence, 1973). Within ESG practices, companies act as signal senders by disclosing sustainability-related information to investors and the public, who function as signal receivers.

Through ESG disclosure, firms aim to reduce information asymmetry between management and external stakeholders while simultaneously signaling their quality, transparency, and commitment to responsible governance (Khatri et al., 2025). This disclosure serves not only as a compliance requirement but also as a strategic communication tool to differentiate the company from less transparent competitors (L. Wu & Sun, 2025).

Empirical evidence suggests that credible and consistent ESG disclosure can enhance investor confidence, improve corporate reputation, and positively influence firm value (Cardillo & Basso, 2025). Therefore, signaling theory explains how ESG disclosure can function as an effective mechanism for shaping market perceptions and strengthening firm valuation.

### **The Effect of ESG Disclosure on Firm Value**

ESG disclosure can be defined as the extent to which a company publicly communicates its performance related to

environmental, social, and governance aspects. This disclosure aims to enhance transparency, reduce information asymmetry, and assist stakeholders in making more informed decisions (Paterdy, 2025). By providing both qualitative and quantitative information regarding sustainability practices, ESG disclosure enables stakeholders to evaluate a firm's operational performance, risk exposure, and long-term commitment to sustainable business practices (Tocchini & Cafagna, 2025).

From the perspective of stakeholder theory, companies are expected to create value not only for shareholders but also for broader stakeholders. Transparent ESG disclosure represents corporate accountability and responsiveness to stakeholder expectations, which can strengthen trust, improve relationships, and enhance corporate reputation. These outcomes are important drivers of long-term firm value, as companies with strong stakeholder support are perceived as more stable and less risky (Judijanto et al., 2024).

In addition, signaling theory explains that ESG disclosure acts as a signal of firm quality to the market (Nuresa & Fatima, 2026). Companies that disclose ESG information transparently convey positive signals regarding their governance quality, risk management, and long-term sustainability prospects. Such signals help reduce unequal access to information between management and investors, thereby enhancing investor confidence and improving market valuation (Lee et al., 2022; Marie et al., 2025).

Empirical studies generally support a positive relationship between ESG disclosure and firm value, as higher transparency improves investor

perception and strengthens corporate credibility (Jizi, 2017; Zumente & Bistrova, 2021). However, some studies report inconsistent findings, suggesting that ESG disclosure may not always be perceived positively, particularly when it is viewed as symbolic or merely a compliance mechanism (Dzakiyani, 2026). Despite these inconsistencies, this study posits that ESG disclosure generally influences firm value.

**H<sub>1</sub>: ESG disclosure significantly affects firm value.**

### **The Moderating Effect of Media Attention on ESG Disclosure and Firm Value**

In the digital era, media attention contributes significantly to shaping public perception and influencing how corporate information is interpreted by stakeholders (Zheng et al., 2024). ESG disclosure is no longer evaluated solely based on corporate reports but also on the extent to which such information receives coverage and attention from the media (Cui et al., 2023).

From a signaling perspective, media attention acts as an information intermediary that amplifies corporate signals. When ESG disclosure receives high media exposure, the information becomes more visible and accessible to a wider audience, thereby strengthening its signaling effect. This increased visibility enhances investor awareness, improves public perception, and reinforces the positive impact of ESG disclosure on firm value (Xue et al., 2024).

Conversely, when media attention is low, ESG information may not be effectively disseminated, limiting its impact on investor decision-making (Guo, 2025). In addition, negative media attention may weaken the credibility of ESG disclosure, especially when discrepancies between reported

information and actual practices are highlighted (Zheng et al., 2024).

Therefore, media attention plays a significant role in determining how ESG disclosure is interpreted by the market. Higher media attention is expected to strengthen the positive relationship between ESG disclosure and firm value by enhancing information dissemination and reinforcing positive signals.

H<sub>2</sub>: Media attention moderates the relationship between ESG disclosure and firm value.

## **RESEARCH METHODS**

### **Research Type**

This study employs a quantitative approach to empirically investigate the impact of ESG disclosure on firm value, with media attention acting as a moderating variable. The quantitative approach is selected because this study focuses on testing relationships among variables that can be quantified and analyzed using statistical methods. According to Sugiyono (2013:8), quantitative research is based on positivist principles and is used to examine specific populations or samples by collecting data through structured instruments and analyzing it statistically to test predetermined hypotheses.

Based on its objective, this research is categorized as descriptive research. Descriptive statistical analysis is used to summarize and present the main characteristics of the data in a systematic manner, including measures such as mean, median, and standard deviation, as well as tables and graphical representations. This analysis provides a general overview of the dataset without directly testing causal relationships (Kaur Parampreet, Stoltzfus, Jill, Yellapu, 2018; Lesley Harbison and Kristen Simmons, 2024).

Through this approach, the study aims to analyze the extent to which ESG disclosure influences firm value and to assess whether media attention strengthens or weakens this relationship. In doing so, this study not only confirms existing theories but also provides new empirical evidence based on statistical testing based on secondary data from energy sector firms listed on the Indonesia Stock Exchange over the 2022–2024 period.

### Type and Source of Data

This study utilizes secondary data. According to Sugiyono (2013:225), secondary data refer to data obtained indirectly through intermediary sources such as documents, reports, and publications. Secondary data are chosen because they provide relevant, reliable, and historical information related to the research variables without requiring direct field data collection.

In this study, data are collected from multiple credible sources. The main data consist of annual reports, sustainability reports, and financial reports obtained from the official websites of energy sector companies listed on the Indonesia Stock Exchange (IDX), as well as from the official IDX website ([www.idx.co.id](http://www.idx.co.id)). In addition, data related to media attention are collected from online media publications (e.g., Google News) and company websites reporting sustainability-related activities (Angela & Rusmanto, 2025).

### Population and Sample

The population in this study encompasses all energy sector firms listed on the Indonesia Stock Exchange. The selection of the energy sector is based on its close association with environmental, social, and governance (ESG) issues, making ESG disclosure an important indicator of firm value.

A sample represents a subset of the population that is considered capable of reflecting its overall characteristics (Sugiyono, 2013:81). This study adopts a purposive sampling approach, selecting samples based on considerations relevant to the research objectives (Sekaran & Bougie, 2016).

Based on this technique, the final sample consists of 22 energy sector companies observed over a three-year period (2022–2024), resulting in a total of 66 firm-year observations.

### Variables Measurement

This study consists of four main variables. Firm value (FVALUE) is used as the dependent variable. ESG disclosure (ESGD) serves as the independent variable. Media attention (MEDIA) is included as a moderating variable to examine its role in strengthening or weakening the linkage between ESG disclosure and firm value. In addition, leverage (LEV) is incorporated as a control variable to account for the firm's financial structure. The measurement of each variable is presented in Table

**Table 1. Variable Measurement**

| Variable | Measurement   |
|----------|---|
| FVALUE   | Firm value is measured using Tobin's Q, calculated as the market value of equity plus the book value of liabilities divided by the book value of total assets (Chung & Pruitt, 1994). |
| ESGD     | Measured using a GRI-based disclosure index with scoring: 0 (no disclosure), 1 (qualitative), 2 (quantitative & comprehensive). Index = Total ESG disclosure score/ Maximum           |

|       |  |
|-------|--|
|       | possible ESG disclosure score (Akhter et al., 2023)  |
| MEDIA | Measured by number of news articles (Google News), transformed using $\ln(1 + \text{total news})$ (Dehdarirad & Karlsson, 2021). |
| LEV   | Measured as total debt divided by total assets (Hadisantoso et al., 2023; Zheng et al., 2024).                                   |

### Data Analysis Technique

This study employs panel data regression analysis using EViews 13 as the analytical tool. Panel data combine time series and cross-sectional data, allowing the analysis of variations across firms and over time. The analysis is conducted to examine the effect of ESG disclosure on firm value, with media attention as a moderating variable.

The data analysis procedure consists of several main stages. First, descriptive statistical analysis is performed to summarize the characteristics of the data, including mean, minimum, maximum, and standard deviation values. This step aims to provide an initial overview of the distribution and variation of the research variables.

Second, panel data regression model selection is conducted by comparing the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The selection of the most appropriate model is determined through Chow Test, Hausman Test, and Lagrange Multiplier (LM) Test.

Third, classical assumption tests are carried out to ensure the validity of the regression model. These include multicollinearity and heteroskedasticity

tests to confirm that the model meets the basic assumptions of regression analysis.

Fourth, moderated regression analysis is applied to examine the influence of ESG disclosure on firm value, including the interaction effect between ESG disclosure and media attention as a moderating variable.

Finally, hypothesis testing is conducted using the t-test to evaluate the significance of individual variables and the coefficient of determination (Adjusted  $R^2$ ) to assess the explanatory power of the model.

## RESULTS AND DISCUSSIONS

### Results

This study employs panel data regression to examine the relationship among the variables. To determine the most appropriate estimation model, several specification tests are conducted, including the Chow test, Hausman test, and Lagrange Multiplier (LM) test. The results of the LM test indicate that the Random Effects Model (REM) is more suitable than the Common Effects Model, as the Breusch-Pagan probability value is below the 5% significance level. Therefore, the Random Effects Model is used for further analysis.

**Table 2. Descriptive Statistics**

| Variables | Mean | Median | Max  | Min  | Std. Dev. | Skewness | Kurtosis |
|-----------|------|--------|------|------|-----------|----------|----------|
| ESGD      | 0.64 | 0.66   | 0.92 | 0.36 | 0.16      | -0.04    | 1.98     |
| FVALUE    | 0.96 | 0.92   | 1.52 | 0.39 | 0.27      | 0.15     | 2.63     |
| MEDIA     | 1.83 | 2.20   | 2.40 | 0.55 | 0.64      | -0.74    | 2.04     |
| ESG_MEDIA | 1.21 | 1.36   | 2.52 | 0.00 | 0.65      | -0.13    | 1.95     |
| LEV       | 0.93 | 1.00   | 2.24 | 0.12 | 0.64      | 0.40     | 2.17     |

Table 2 presents the descriptive statistics of the variables used in this study. The main independent variable, ESG disclosure (ESGD), shows a mean value of 0.64, with a median of 0.66, indicating that, on average, firms in the sample exhibit a relatively moderate level of ESG disclosure. The distribution appears fairly symmetric, as reflected by a skewness value close to zero (-0.04), and a kurtosis of 1.98, suggesting a relatively normal distribution without extreme outliers. The values range from

0.36 to 0.92, with a standard deviation of 0.16, indicating moderate variability across firms.

Firm value (FVALUE), as the dependent variable, has a mean of 0.96 and a median of 0.92, suggesting that most firms cluster around similar valuation levels. The maximum value of 1.52 and minimum of 0.39 indicate some dispersion, supported by a standard deviation of 0.27. The positive skewness (0.15) implies a slight tendency toward higher firm values for a few firms, while the kurtosis of 2.63 indicates a distribution that is relatively normal with limited extreme values.

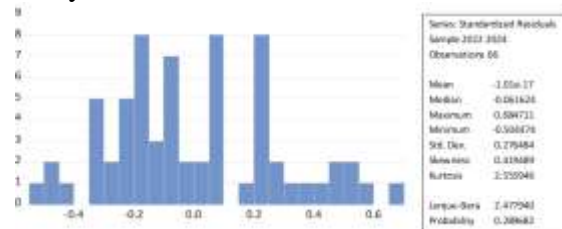
Media attention (MEDIA) shows a mean of 1.83, with a median of 2.20, indicating that most firms receive a relatively high level of media attention. However, the negative skewness ( $-0.74$ ) suggests that the distribution is left-skewed, meaning that a larger proportion of firms experience higher media attention, with fewer firms receiving very low coverage. The standard deviation of 0.64 reflects moderate variability, while the kurtosis of 2.04 indicates a fairly normal distribution.

The interaction variable between ESG disclosure and media attention (ESG\_MEDIA) has a mean of 1.21 and a median of 1.36, suggesting that the combined effect of ESG disclosure and media exposure is relatively substantial across firms. The minimum value of 0.00 indicates that some firms have either low ESG disclosure, low media attention, or both. The distribution is relatively symmetric (skewness  $-0.13$ ) with a kurtosis of 1.93, indicating no significant presence of extreme values.

Lastly, leverage (LEV) shows a mean of 0.93 and a median of 1.00, indicating that firms in the sample tend to have a relatively balanced capital structure between debt and equity. The maximum value of 2.24 and minimum of

0.12 suggest considerable variation in financial leverage across firms, supported by a standard deviation of 0.64. The positive skewness (0.40) indicates that a number of firms have relatively high leverage levels, while the kurtosis of 2.17 suggests a distribution that is moderately concentrated without extreme outliers.

Taken together, these descriptive statistics indicate that the variables exhibit sufficient variation and generally well-behaved distributions, supporting their suitability for further empirical analysis.



**Figure 1. Normality Test**

As part of the classical assumption tests, a normality test is conducted to evaluate whether the residuals of the regression model follow a normal distribution. This assumption is essential to ensure the reliability of statistical inference. The results of the Jarque-Bera test show a probability value of 0.2897, which exceeds the 5% significance level, indicating that the residuals are normally distributed. This finding is also supported by the histogram of standardized residuals, which displays a relatively symmetric pattern.

To further enhance the quality of the data, this study applies winsorization to all variables. This approach aims to mitigate the influence of extreme values by adjusting outliers to a specified percentile threshold, without removing observations from the sample (Hou et al., 2026). Through this treatment, the data distribution becomes more stable, thereby improving the robustness of the regression results.

To further ensure the validity of the regression model, additional diagnostic tests are conducted. As part of these tests, the correlation matrix is examined to identify potential multicollinearity among the independent variables.

The correlation matrix provides an overview of the pairwise relationships between variables and serves as a preliminary assessment of whether any independent variables are highly correlated with one another. High correlation coefficients may indicate the presence of multicollinearity, which can distort coefficient estimates and reduce the reliability of the regression results. The results are presented in Table 3.

**Table 3. Multicollinearity Test**

|       | ESGD     | MEDIA    | LEV      |
|-------|----------|----------|----------|
| ESGD  | 1.000000 | 0.561898 | 0.006921 |
| MEDIA | 0.561898 | 1.000000 | 0.308346 |
| LEV   | 0.006921 | 0.308346 | 1.000000 |

Table 2 reports the correlation matrix of the variables used in this study. The matrix presents the pairwise correlation coefficients among ESG disclosure (ESGD), media attention (MEDIA), and leverage (LEV). The results indicate that the correlations among the independent variables are generally low to moderate, suggesting that multicollinearity is unlikely to be a serious concern in the regression analysis.

Specifically, ESG disclosure (ESGD) is positively correlated with media attention (MEDIA), with a coefficient of 0.5619. This indicates a moderate relationship, suggesting that firms with higher ESG disclosure tend to receive greater media attention. This pattern is consistent with the descriptive findings, where firms exhibit moderate-to-high levels of both ESG disclosure and media attention.

In contrast, the correlation between ESG disclosure (ESGD) and

leverage (LEV) is very weak, with a coefficient of 0.0069. This near-zero correlation suggests that a firm's capital structure is not directly associated with its level of ESG disclosure within the sample, indicating that financial structure and sustainability reporting may operate independently.

Meanwhile, media attention (MEDIA) shows a positive but relatively low correlation with leverage (LEV), with a coefficient of 0.3083. This indicates that firms with higher leverage may receive slightly more media attention, although the relationship remains modest.

None of the correlation coefficients exceed the commonly accepted threshold of 0.80, indicating the absence of strong linear relationships among the independent variables. This suggests that multicollinearity is not a significant issue, and all variables can be included in the regression model without concern for bias arising from high intercorrelations.

Building on this result, the next diagnostic test examines the presence of heteroskedasticity in the regression model. The results are reported in Table 4.

**Table 4. Heteroscedasticity Test**

| Variable  | Coefficient | Std. Error | t. Statistic | Prob.  |
|-----------|-------------|------------|--------------|--------|
| C         | 0.225544    | 0.121746   | 1.852579     | 0.0688 |
| ESGD      | -0.277700   | 0.207802   | -1.336371    | 0.1864 |
| MEDIA     | 0.027184    | 0.060362   | 0.450354     | 0.6541 |
| ESG_MEDIA | 0.025602    | 0.092548   | 0.276632     | 0.7830 |
| LEV       | -0.011426   | 0.019473   | -0.586778    | 0.5595 |

The heteroskedasticity test is conducted to examine whether the variance of the error terms is constant across observations. A well-specified regression model is expected to exhibit homoskedasticity, where the variance of the residuals remains stable. The presence of heteroskedasticity may lead to inefficient estimates and biased standard errors, which in turn affect the reliability of statistical inference.

In this study, the heteroskedasticity test indicates that the probability values of all independent variables, namely ESG disclosure (ESGD), media attention (MEDIA), the interaction term (ESG\_MEDIA), and leverage (LEV), are above the conventional significance level of 5%. This suggests that none of the independent variables significantly explain the variance of the residuals.

Therefore, it can be concluded that there is no evidence of heteroskedasticity in the model, indicating that the assumption of constant variance is satisfied. As a result, the regression estimates can be considered reliable, and the model is appropriate for further interpretation and hypothesis testing.

**Table 5. MRA Test**

| Variable  | Coefficient | Std. Error | t. Statistic | Prob.  |
|-----------|-------------|------------|--------------|--------|
| C         | 0.300167    | 0.343619   | 0.873547     | 0.3858 |
| ESGD      | 1.008492    | 0.566864   | 1.779072     | 0.0802 |
| MEDIA     | 0.147835    | 0.143331   | 1.031424     | 0.3064 |
| ESG_MEDIA | -0.232015   | 0.222874   | -1.041015    | 0.3020 |
| LEV       | 0.015377    | 0.074570   | 0.206207     | 0.8373 |

The hypothesis testing results from the moderated regression analysis (MRA) are presented in Table 4. The model is estimated using the Random Effects Model (REM), and the evaluation of the hypotheses is conducted using the t-test at the 5% and 10% significance levels.

For the first hypothesis ( $H_1$ ), which states that ESG disclosure significantly affects firm value, the results show that ESGD has a coefficient of 1.0085 with a t-statistic of 1.7791 and a probability value of 0.0802. At the 5% significance level, the t-statistic is lower than the critical value (1.9977), and the probability value exceeds 0.05, indicating that  $H_1$  is rejected. However, at the 10% significance level, the probability value is below 0.10, suggesting that ESG disclosure has a marginally significant positive effect on

firm value. Therefore,  $H_1$  is accepted at the 10% level.

For the second hypothesis ( $H_2$ ), which examines whether media attention moderates the relationship between ESG disclosure and firm value, the interaction term (ESG\_MEDIA) shows a coefficient of  $-0.2320$  with a t-statistic of  $-1.0410$  and a probability value of 0.3020. Since the probability value is greater than both 0.05 and 0.10,  $H_2$  is rejected at both the 5% and 10% significance levels. This indicates that media attention does not significantly moderate the relationship between ESG disclosure and firm value.

In addition to the t-test results, the explanatory power of the model is assessed using the adjusted R-squared. The regression results show an adjusted R-squared value of 0.0073, indicating that approximately 0.73% of the variation in firm value (FVALUE) can be explained by ESG disclosure (ESGD), media attention (MEDIA), the interaction term (ESG\_MEDIA), and leverage (LEV)

This relatively low explanatory power suggests that the independent variables included in the model have limited ability to explain variations in firm value. It also indicates that firm value is likely influenced by other factors not captured in this study, such as financial performance, firm size, growth opportunities, or macroeconomic conditions

Nevertheless, a low adjusted R-squared is not uncommon in studies involving ESG and non-financial variables, particularly in emerging markets, where the integration of ESG information into investment decisions is still developing. Therefore, the results remain relevant for understanding the incremental role of ESG disclosure and media attention in explaining firm value.

## Discussion

### **The Effect of ESG Disclosure on Firm Value**

Based on the regression results, the first hypothesis ( $H_1$ ) is rejected at the 5% significance level but accepted at the 10% significance level, indicating that ESG disclosure has a positive but only weakly significant effect on firm value. This indicates that ESG disclosure has not yet exerted a strong and consistent impact on firm value within the observed period.

A fundamental explanation lies in the development stage of ESG practices within the Indonesian energy sector. During the 2022–2024 period, ESG disclosure appears to be in a transitional phase, where reporting is largely driven by regulatory compliance rather than deeply embedded strategic initiatives. ESG disclosure often reflects compliance with reporting requirements rather than real differences in sustainability performance (Hanafi et al., 2025). In such conditions, investors may perceive ESG disclosure as routine or mandatory information, limiting its ability to influence firm valuation.

Energy sector investments are highly capital-intensive and long-term in nature, particularly in infrastructure and energy transition projects (Hanafi et al., 2025; IEA, 2022). Firm value in this context is more directly driven by tangible and short-term indicators such as production output, operational efficiency, and market prices. Compared to these dominant value drivers, ESG disclosure, particularly when still evolving, may not yet carry sufficient weight to affect investor decision-making.

Another important explanation relates to the intertemporal nature of ESG value creation. ESG initiatives, especially in the energy sector, often involve long-term commitments such as energy transition, emission reduction,

and infrastructure transformation (Hanafi et al., 2025; Ningrum et al., 2026; Romli & Abdurrohim, 2025). These initiatives require substantial time before generating observable financial outcomes. Consequently, within a relatively short observation period (2022–2024), the market may not yet fully incorporate the long-term benefits of ESG into firm value, leading to a weak statistical relationship.

Furthermore, the descriptive statistics suggest that ESG disclosure lacks strong cross-sectional differentiation. The moderate mean value (0.64) and relatively low standard deviation (0.16) indicate that most firms disclose ESG information at a similar level. This homogeneity reduces the ability of ESG disclosure to function as a distinguishing factor among firms. When ESG practices become relatively standardized, they lose their potential to generate a valuation premium, as investors are unable to clearly differentiate high-quality firms from others based on ESG information alone.

This argument is further supported by the distributional characteristics of ESG disclosure, which exhibit near symmetry (skewness  $-0.04$ ) and lack extreme values. The absence of firms with significantly superior ESG disclosure reduces the likelihood of observing a strong market response. In this context, ESG disclosure appears to function more as a standardized reporting norm rather than a strategic value-enhancing attribute.

Another key consideration is the informational nature of ESG disclosure. ESG information is often qualitative, aggregated, and requires interpretation before it can be translated into financial implications (Jhan & Hsieh, 2026). When ESG disclosure lacks quantifiable metrics or clear links to economic outcomes, its usefulness in firm

valuation becomes limited (Prengel et al., 2025). As a result, even when ESG disclosure is present, it may not be sufficiently decision-useful for investors.

The weak relationship is also reflected in the low explanatory power of the model (adjusted  $R^2 = 0.0073$ ), indicating that ESG disclosure contributes only marginally to explaining variations in firm value. This suggests that, within the observed context, ESG disclosure has not yet reached a level of maturity, differentiation, and informational clarity required to produce a strong economic impact.

From a theoretical perspective, these findings point to a limitation in the expected role of ESG disclosure within signaling and legitimacy frameworks. ESG disclosure is theoretically expected to function as a signal of firm quality, reducing information asymmetry and influencing investor perception. However, for a signal to be effective, it must be credible, distinctive, and informative (Prengel et al., 2025). In this case, the relatively homogeneous and compliance-driven nature of ESG disclosure reduces its signaling power, as it fails to convey meaningful differences in firm quality.

Similarly, from a legitimacy perspective, ESG disclosure is expected to enhance corporate legitimacy by demonstrating alignment with societal expectations. However, when ESG practices become standardized across firms, disclosure may serve primarily as a tool for maintaining legitimacy rather than enhancing firm value (Ningrum et al., 2026). In such conditions, legitimacy becomes a baseline requirement rather than a source of competitive advantage, thereby limiting its impact on valuation.

These findings further suggest that the effectiveness of ESG disclosure is conditional within both theoretical

frameworks. From a signaling perspective, ESG disclosure fails to exert a strong impact on firm value because it does not provide sufficiently distinctive and economically meaningful information. When disclosure becomes homogeneous and compliance-oriented, its ability to reduce information asymmetry diminishes. From a legitimacy perspective, ESG disclosure may successfully maintain social acceptance but does not necessarily translate into increased firm value unless it exceeds minimum expectations and demonstrates substantive performance. This indicates that legitimacy alone is insufficient to drive valuation effects without accompanying differentiation and measurable impact.

Overall, the results indicate that ESG disclosure has a positive but weak economic relevance in influencing firm value within the Indonesian energy sector during the 2022–2024 period. The combination of sector-specific characteristics, early-stage ESG integration, limited variation, and the long-term nature of sustainability value creation collectively explains why ESG disclosure has not yet become a strong determinant of firm value. Moreover, these findings highlight important boundary conditions in the application of signaling and legitimacy theories, particularly in emerging market contexts where ESG practices are still evolving.

### **The Moderating Role of Media Attention**

Based on the regression results, the second hypothesis ( $H_2$ ), which posits that media attention moderates the relationship between ESG disclosure and firm value, is rejected. The interaction term (ESG\_MEDIA) is statistically insignificant ( $p = 0.3020$ ), indicating that media attention does not strengthen nor

weaken the relationship between ESG disclosure and firm value.

A fundamental explanation lies in the limited economic relevance of media attention within the observed context. The results show that media attention does not have a significant direct effect on firm value ( $p = 0.3064$ ), suggesting that it is not perceived by the market as value-relevant information. In capital markets, only information that is considered credible, relevant, and decision-useful is incorporated into valuation (Kamotho & Moloi, 2022). In this case, media attention appears to function more as a channel of exposure rather than as a source of value-relevant information (Angela & Rusmanto, 2025; Ningrum et al., 2026; Romli & Abdurrohman, 2025). Consequently, its ability to act as a moderating variable becomes constrained.

Furthermore, the descriptive statistics indicate that media attention lacks sufficient cross-sectional variation. The relatively high mean value (1.83) combined with negative skewness ( $-0.74$ ) suggests that most firms already receive consistently high levels of media attention. This condition creates a ceiling effect, where additional increases in media attention do not generate incremental informational benefits. When a variable exhibits limited variation across observations, its ability to explain differences in firm value or to strengthen relationships between variables becomes inherently weak. As a result, media attention fails to function as a meaningful differentiating factor.

In addition, although ESG disclosure and media attention exhibit a moderate correlation (0.5619), this relationship does not translate into a significant interaction effect. This suggests that media attention primarily enhances the visibility of ESG disclosure without improving its informational

depth or credibility (Cui et al., 2023). In other words, higher media attention increases the extent to which ESG information is observed, but does not necessarily improve how that information is interpreted or valued by investors. As such, visibility alone is insufficient to strengthen the ESG–firm value relationship (Angela & Rusmanto, 2025).

Another important explanation relates to the nature of media attention as an information channel. Information conveyed through media attention is often fragmented, heterogeneous, and varies in tone and quality (Fischbach et al., 2023; Libgober et al., 2023). Since this study measures media attention based on the frequency of news articles rather than their sentiment or content quality, it does not capture whether the information is positive, negative, or neutral (Zhang et al., 2026). As a result, the aggregated measure of media attention may dilute its potential impact, as different types of information are treated equivalently. This limitation reduces the ability of media attention to function as an effective moderator.

Moreover, the effectiveness of media attention in moderating the ESG–firm value relationship depends on the extent to which it can transform ESG disclosure into actionable signals. However, ESG information is inherently complex and often requires contextual interpretation. When transmitted through media attention without sufficient standardization or depth, such information may increase awareness but fails to provide clear implications for firm valuation. Consequently, investors may not rely on media attention as a primary basis for decision-making (Ningrum et al., 2026; Romli & Abdurrohman, 2025).

The insignificant moderating effect may also reflect the short-term

measurement horizon of the study. The influence of media attention is likely cumulative and persistent, requiring repeated exposure over time to shape investor perception and market behavior. Given the relatively limited observation period (2022–2024), the long-term reinforcing effect of media attention may not yet be fully realized in firm value.

This finding is further supported by the low explanatory power of the model (adjusted  $R^2 = 0.0073$ ), indicating that the interaction term contributes minimally to explaining variations in firm value. Based on these results, media attention can be classified as a homologizer moderator, as it does not exhibit a significant direct effect nor a significant interaction effect (Sharma et al., 1981). This implies that media attention does not alter the strength or direction of the relationship between ESG disclosure and firm value.

From a theoretical perspective, these findings highlight a limitation in the expected role of media attention within signaling and legitimacy frameworks. While media attention is theoretically expected to amplify corporate signals and enhance legitimacy, the results suggest that visibility alone is insufficient without strong informational content, credibility, and differentiation. In this context, media attention functions more as a passive dissemination mechanism rather than an active enhancer of firm value.

These findings further indicate that the effectiveness of media attention is conditional within both theoretical frameworks. From a signaling perspective, media attention fails to strengthen the ESG–firm value relationship because it does not enhance the clarity, credibility, or distinctiveness of ESG signals. A signal becomes effective only when it conveys meaningful and distinguishable

information; however, when media attention merely increases exposure without improving informational quality, its signaling function remains weak. Similarly, from a legitimacy perspective, media attention does not significantly influence stakeholder perceptions, as increased visibility alone does not necessarily translate into greater trust or acceptance without consistent and substantive information. This suggests that the role of media attention as a legitimacy-enhancing mechanism is also limited in this context.

Overall, the results indicate that media attention has not yet developed into an effective moderating mechanism in the relationship between ESG disclosure and firm value. Its limited variation, lack of informational depth, and absence of direct economic relevance collectively explain why it fails to strengthen the impact of ESG disclosure within the observed context. Moreover, these findings point to important boundary conditions in the application of signaling and legitimacy theories, particularly in emerging market settings where the informational role of media attention remains underdeveloped.

## CONCLUSION AND SUGGESTION

### Conclusion

This study examines the effect of ESG disclosure on firm value and the moderating role of media attention in energy sector companies listed on the Indonesia Stock Exchange during the 2022–2024 period. The findings indicate that ESG disclosure has a positive but only marginally significant effect on firm value, suggesting that its economic relevance remains limited. This implies that ESG practices in the Indonesian energy sector are still in a transitional stage, where disclosure is largely driven by regulatory compliance rather than substantive strategic integration. As a

result, ESG disclosure has not yet become a strong determinant of firm value.

Furthermore, media attention is found to have no significant moderating effect on the relationship between ESG disclosure and firm value. This indicates that media attention has not functioned effectively as a mechanism to enhance the value relevance of ESG information. Instead, it primarily serves as a channel of information dissemination without significantly improving its credibility or interpretability for investors.

Overall, these findings suggest that both ESG disclosure and media attention have not yet reached the level of maturity, differentiation, and informational quality required to significantly influence firm value. The results also highlight important boundary conditions in the application of signaling and legitimacy theories, particularly in emerging markets where ESG practices and information environments are still developing.

### Suggestions

Based on the findings, several recommendations can be proposed. First, companies, particularly in the energy sector, are encouraged to improve the quality and depth of ESG disclosure by providing more measurable, consistent, and decision-useful information. Moving beyond compliance-oriented reporting toward substantive ESG integration may enhance the credibility and value relevance of such disclosures.

Second, regulators and standard-setting bodies should continue to strengthen ESG reporting frameworks to ensure greater standardization, comparability, and transparency across firms. Clearer guidelines and enforcement mechanisms may help reduce information asymmetry and

improve investor confidence in ESG-related information.

Third, future research is recommended to incorporate longer observation periods to better capture the long-term impact of ESG initiatives on firm value. Additionally, future studies may refine the measurement of media attention by considering sentiment analysis (positive, negative, neutral) or content quality, which may provide deeper insights into its role in shaping investor perception.

Finally, researchers are encouraged to include additional control variables or alternative moderating variables, such as corporate governance quality, institutional ownership, or analyst coverage, to better explain variations in firm value and to provide a more comprehensive understanding of ESG dynamics in emerging markets.

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