

The Influence of Environmental, Social, and Governance (ESG) Disclosure on Firm Value: An Asymmetric Information Perspective in Indonesian Listed Companies

Putri Angir¹; Weli^{2*}

^{1,2}Magister Akuntansi, Fakultas Ekonomi dan Bisnis, Universitas Katolik Indonesia Atma Jaya Jakarta
Jakarta, Indonesia 12930

¹putri.202100120015@student.atmajaya.ac.id; ²weli.imbiri@atmajaya.ac.id

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ABSTRACT

The research explored how Environmental, Social, and Governance (ESG) disclosure impacted company value, with information asymmetry as the mediator. Data collection involved content analysis of sustainability and annual reports, supplemented by market data, including quarterly stock prices collected immediately after the publication of the sustainability report. The measurement for ESG disclosure used the index scoring method with disclosure indicators based on technical guidelines from SEOJK No. 16 of 2021. Meanwhile, measuring information asymmetry applied the bid-ask spread formula, and company value employed the approximate Tobin's Q formula. Then, market data utilized quarterly stock prices taken in the period immediately after the sustainability report was published to observe market reactions reflected in stock price movements. The population consisted of public companies listed on the Indonesian Stock Exchange from 2019 to 2021, with purposive sampling by selecting only companies that provided information relevant to ESG indicators. Data collection resulted in 286 analysis units from 109 companies. Using SPSS 27.0 and the Hayes Macro process for path analysis, the findings indicate that ESG disclosure has no impact on information asymmetry. Similarly, information asymmetry does not affect firm value or mediate the relationship between ESG disclosure and firm value. However, it should be noted that ESG disclosure has a negative impact on company value. The novelty of the research lies in the use of instruments to assess the quality of ESG disclosure and the utilization of information asymmetry as a mediator between ESG disclosure and company value.

Keywords: Environmental, Social, and Governance (ESG) disclosure, firm value, asymmetric information, Indonesian Listed Companies

INTRODUCTION

The issue of sustainability remains a prominent and widely debated topic across global communities (Aydoğmuş et al., 2022). Sustainability entails developing practices that cater to present needs while safeguarding the capacity of future generations to meet their needs without compromise (Armstrong, 2020). The emergence of sustainability concerns in the mid-20th century is due to growing awareness of energy crises, climate change, and the human-induced

greenhouse effect (Armstrong, 2020). This situation leads to the United Nations creating the Sustainable Development Goals (SDGs), consisting of 17 goals and 169 targets to be achieved by 2030.

The significance of sustainability profoundly affects the future of life forms, prompting investors to demand greater attention to sustainability aspects, particularly in the current era of sustainable development (Tjahjadi et al., 2021). However, the global COVID-19 pandemic has significantly shifted the landscape, fostering increased awareness among

stakeholders about the imperative of integrating sustainability into business and investment practices (Steblianskaia et al., 2023). Both domestic and international investors are now prioritizing transparency in information on sustainability aspects, which encompass Environmental, Social, and Governance (ESG) considerations, to make more informed investment decisions (Mohammad & Wasiuzzaman, 2021).

Nevertheless, Indonesia's adoption of ESG practices, as evidenced by data from KPBU Indonesia (2021), still lags behind the intended target. It raises concerns, particularly during the pandemic's peak. According to Corporate Knights (2022), Indonesia ranks 19th among G20 nations in Earth Index Scores, signifying suboptimal management of negative ESG sectors, such as emissions, waste, transportation, and industry.

The inconsistency in ESG reporting formats and standards poses another challenge. ESG reporting differs across companies due to industry variations and national regulations (Buallay, 2019). To address this, the Financial Services Authority of Indonesia (Otoritas Jasa Keuangan (OJK)) has issued regulation POJK No.51/POJK.03/2017, compelling financial institutions, issuers, and public companies to integrate sustainability principles into their activities and publish sustainability reports (Otoritas Jasa Keuangan, 2017; Putri et al., 2022). Additionally, SEOJK No. 16/SEOJK.04/2021 complements this by outlining guidelines for the content of issuer and public company annual reports, including sustainability reports (Vellin et al., 2022).

Moreover, the lack of a globally standardized format or reporting standard for ESG poses another challenge. It leads to discrepancies in information disclosure between companies (Buallay, 2019). Variations in disclosure also stem from the differing characteristics, situations, and conditions of countries and industries, influenced by diverse regulations and management perspectives on addressing ESG information aligned with stakeholders' needs (Buallay, 2019).

To encourage optimal ESG information disclosure, Indonesia's Financial Services Authority urges financial institutions, issuers, and public companies to integrate sustainability principles into business activities (Otoritas Jasa Keuangan, 2017; Putri et al., 2022). According to Rossiana (2022), the regulation mandates these entities to publish sustainability reports and financial and annual reports. Financial service institutions had to engage in sustainability reporting, with compliance deadlines by 2019, while non-financial companies had until 2022 (Theodorus & Rudyanto, 2022). The OJK's regulations seek to heighten companies' awareness and commitment to adopting sustainability principles and promoting sustainable finance, in line with the objectives of the Sustainable Finance Roadmap Phase II (2021-2025) (Adhariani & Du Toit, 2020). Moreover, implementing OJK regulations has positively impacted

company performance and investor considerations (Rossiana, 2022).

In contemporary investment contexts, ESG information is increasingly material, and companies are expected to provide comprehensive and high-quality ESG disclosures to investors (Yu & Luu, 2021). Investors, like Badía et al. (2022), suggest that the value of non-financial attributes as ESG information assists in identifying future opportunities and risks. Integrating ESG aspects into investment decisions empowers investors to make well-rounded assessments of company performance beyond financial metrics (Mohammad & Wasiuzzaman, 2021).

ESG disclosure also contributes to building favorable reputations and positive images for companies, showcasing their commitment beyond financial considerations (Buallay, 2019; Garel & Petit-Romec, 2021; Abdi et al., 2022; Zhou et al., 2022). Transparency and accountability of ESG information enhance company performance, resource efficiency, risk mitigation, cost reduction, and investor confidence in long-term performance (Porter et al., 2019; Mohammad & Wasiuzzaman, 2021; Pranesti et al., 2022). Furthermore, ESG information offers a competitive edge, differentiating companies and enhancing their overall value (Buallay, 2019; Garel & Petit-Romec, 2021; Abdi et al., 2022; Zhou et al., 2022).

Numerous international studies have examined the relationship between ESG disclosure and firm value. It has a positive relationship, indicating that companies excelling in ESG practices and providing comprehensive disclosures tend to possess a higher firm value (Wong et al., 2021; Mohammad & Wasiuzzaman, 2021). Moreover, the impact of ESG disclosure extends beyond financial considerations, mitigating agency issues and reducing associated costs in the investor-manager relationship (Yu & Luu, 2021). High-quality disclosures reflect a company's industry understanding and competitive environment, even aiding in predicting future performance (Mohammad & Wasiuzzaman, 2021). ESG disclosures can send positive signals to investors and constructively impact society (Zhang et al., 2020).

The dynamic between companies and investors may introduce information asymmetry concerns. ESG disclosure bridges this gap, enhancing transparency and minimizing agency costs (Yu & Luu, 2021). Nevertheless, various findings exist concerning the relationship between ESG disclosure and information asymmetry (Cui et al., 2018; Yoon & Lee, 2019). Information asymmetry can be considered a catalyst for voluntary additional information disclosure to address the agency's issues and align management actions with the company's interests (Cheryta et al., 2018). As a poor signal, information asymmetry can impact investors' decisions and potentially affect a company's valuation. Accurate information is crucial for investors' decision-making, making knowledge a symbol of an efficient market (Huynh et al., 2020). Information inequality hampers accurate valuation,

indicating information asymmetry as a signal of market failure that can influence the market value of listed companies. Moreover, recent research, exemplified by Safitri et al. (2021) and Huynh et al. (2020), supports the notion that information asymmetry significantly influences capital market stock price fluctuations and negatively impacts firm value. However, differing results, like Cheryta et al. (2018), highlight the complexity of this relationship.

Based on the findings of Safitri et al. (2021) and Huynh et al. (2020), the research is conducted utilizing Signaling theory. The disclosure of ESG information is considered a signal to investors, representing firm value. Meanwhile, information asymmetry is expected to mediate the relationship between ESG disclosure and firm value. Information asymmetry signifies a situation where market participants lack equal access to relevant information, influencing divergent investment decisions (Gomes et al., 2019; Fosu et al., 2016; Huynh et al., 2020). Theoretically, information asymmetry is believed to increase costs and reduce firm value (Fosu et al., 2016). As a result, companies anticipate positive signals from comprehensive ESG disclosure to persuade investors (Friske et al., 2023; Huang, 2022; Spence, 1973).

The research theorizes the unique Indonesian context of ESG disclosure and firm value, emphasizing local factors like OJK regulations. It investigates the role of information asymmetry in connecting ESG disclosure and firm value, shedding light on stakeholders' interpretation. Focusing on the Indonesian financial market significantly contributes to limited local literature on ESG, information asymmetry, and firm value nationally. By profoundly understanding market dynamics and applying relevant methodologies, the research contributes substantially to the global understanding of sustainably integrating ESG, information asymmetry, and firm value.

The research aims to examine the effect of ESG disclosure on firm value with information asymmetry as a mediating variable. The research novelty uses instruments to assess the quality of ESG disclosure and the use of information asymmetry as a mediator between ESG disclosure and company value. The

research model is illustrated in Figure 1. There is ESG disclosure as the independent variable, information asymmetry as the mediator, and firm value as the dependent variable. Based on the description, the conceptual hypotheses are formulated as follows.

- H1: ESG disclosure has a significant effect on information asymmetry.
- H2: Information asymmetry has a significant effect on firm value.
- H3: Information asymmetry mediates the relationship between ESG disclosure and firm value.
- H4: ESG disclosure has a significant effect on firm value.

METHODS

The research population comprises reports from publicly listed companies on the Indonesian Stock Exchange from 2019 to 2021. It consists of companies from various sectors listed on the Indonesia Stock Exchange. The sample selection process in the research utilizes purposive sampling, specifically focusing on companies that present complete sustainability reports and annual reports in Indonesian Rupiah from 2019 to 2021. Consequently, a total of 286 unit analyses from 109 companies are obtained as the sample for analysis.

Then, the ESG disclosure is assessed using indicators stipulated in SEOJK No.16/SEOJK.04/2021, which mandates that ESG information in sustainability reports should encompass 32 indicators (Otoritas Jasa Keuangan, 2021). The breakdown includes 13 indicators of environmental performance, 14 indicators of social aspects, and 5 indicators of governance aspects (Otoritas Jasa Keuangan, 2021). Each indicator is obtained using content analysis methods applied to the sustainability reports of each company. After determining the number of ESG disclosure indicators from the research sample, these values are calculated using a scoring index adapted from Aggarwal and Singh (2019), as presented in Table 1.

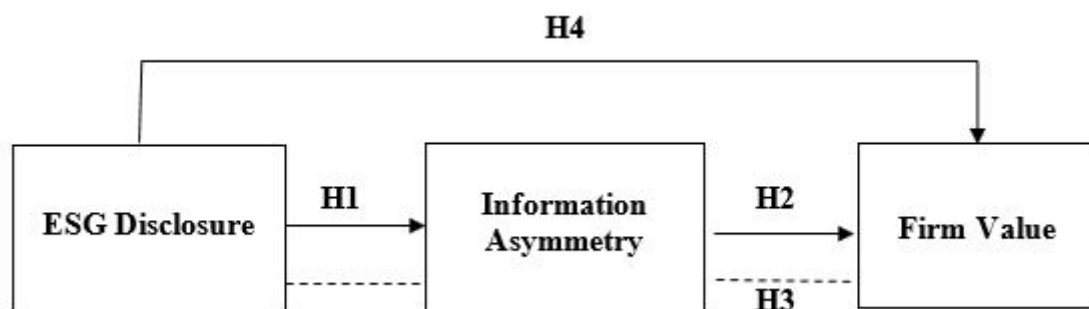


Figure 1 Theoretical Framework

Table 1 Environmental, Social, and Governance (ESG) Disclosure Score Index

Score	Criteria
0	Have no disclosure
1	Make disclosures, but only in general terms (not according to indicators)
2	Disclose according to indicator, but only one or part of it (incomplete)
3	Provide complete information on all indicators appropriately

Calculating the cumulative ESG disclosure score uses Equation (1) adapted from Ghazali and Zulmaita (2022). A higher score indicates that the ESG information presented by the company is excellent. Conversely, a lower score signifies incomplete ESG information disclosure.

$$ESG = \frac{\text{Total items disclosed}}{\text{Total score items disclosed}} \quad (1)$$

Furthermore, the bid-ask spread calculation is employed for the level of information asymmetry. Based on Callahan et al. (1997), the bid-ask spread method reflects the risk of information asymmetry due to adverse selection costs or a situation with a shortage of information and uncertainty in stocks. Consequently, the risk of adverse selection will increase, manifested through a widening bid-ask spread value.

The bid price represents the highest price a buyer is willing to pay and reflects the buyer's perception of the company's stock value (Gregoriou et al., 2005). Information asymmetry influences the bid because of the difference in perception between buyers and sellers. The party with more information will leverage it to negotiate a better price for themselves (Gregoriou et al., 2005). Similarly, the ask price depends on the direction of information asymmetry, causing the price to be higher or lower.

The bid-ask spread value can be calculated by taking the difference between the average or the lowest bid price of the stock and the ask price or highest demand for each stock (Salnika et al., 2021; Weli & Betseda, 2021). The stock prices used are those recorded immediately after the publication of the sustainability report, specifically three months (quarterly). The cumulative stock prices during that quarterly period are taken as the average stock price used in the bid-ask spread formula. This approach aims to reflect better the level of information asymmetry resulting from companies' ESG disclosures through market reactions, i.e., stock price fluctuations. Equation (2) calculates the level of information asymmetry (Salnika et al., 2021; Weli & Betseda, 2021). It has *SPREAD* as the difference between the ask and bid prices, *i* as company, *t* as reporting period, *Ask* as the highest asking price of company's shares that occurred in period *t*, and *Bid* as the lowest bid price of company

shares in period *t*.

$$SPREAD_{i,t} = \frac{(Ask_{i,t} - Bid_{i,t})}{\frac{(Ask_{i,t} + Bid_{i,t})}{2}} \times 100 \quad (2)$$

The assessment of firm value is executed through Tobin's Q. It is derived from a simplified version of the method introduced by Chung and Pruitt (1994), referred to as the "Approximate Tobin's Q". This approach has been embraced by several studies including Yu et al. (2018), Budiyanto et al. (2019), Dzahabiyya et al. (2020), Mohammad and Wasiuzzaman (2021), Kurniawan and Dalimunthe (2022), Prabawati and Rahmawati (2022), Vuong (2022), and Ahmad et al. (2023). Tobin's Q formula is expressed in Equation (3). It consists of *Q* as Approximate Tobin's Q, *MVE* as Market Value Equity (*market cap = number outstanding shares × share price*), *D* as debt [*(current liabilities - current assets) + long-term liabilities*], and *TA* as total assets (company's total assets).

$$Q = \frac{MVE + D}{TA} \quad (3)$$

If Tobin's Q value is below 1 ($Q < 1$), the company is undervalued due to inadequate asset management. Then, Tobin's Q value of 1 ($Q = 1$) signifies the company's balanced and average state. Conversely, if Tobin's Q value surpasses 1 ($Q > 1$), the company excels in asset management and is consequently considered overvalued (Chung & Pruitt, 1994).

Next, descriptive statistical methods are employed for data analysis. Additionally, the path analysis technique, facilitated by the process macro developed by Hayes, is utilized in SPSS version 27.0 to examine the relationships within the research model, as presented in Figure 2. The process macro developed by Hayes is a nonparametric regression using bootstrapping, unlike other traditional methods such as Sobel's test. Importantly, this test does not require prerequisites like the assumption of normality (Abu-Bader & Jones, 2021). Another advantage of this method compared to traditional testing and Sobel's test is the comprehensive results provided. It encompasses direct, indirect, and total effects between variables, standardized and unstandardized coefficients, and various other tests. All of them are accomplished in a single step (Abu-Bader & Jones, 2021; Hayes, 2018).

RESULTS AND DISCUSSIONS

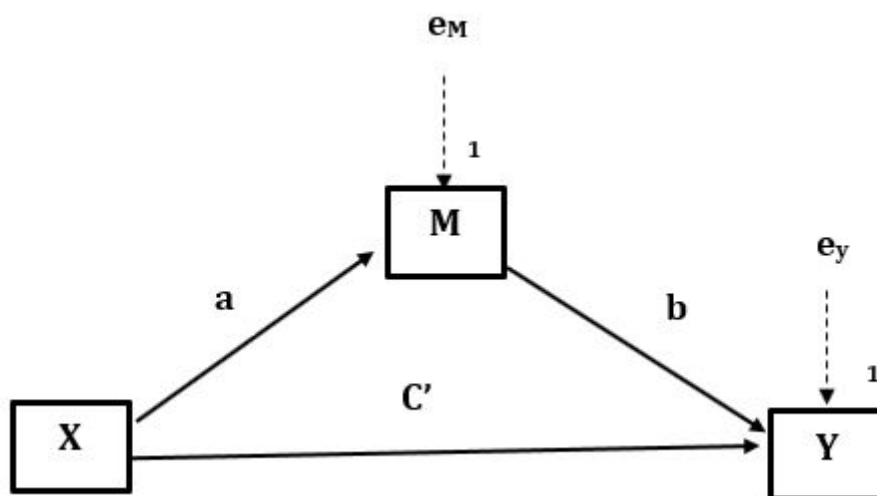
The data analysis outcomes are presented in Table 2. It illustrates the mean ESG disclosure across various sectors. Notably, the energy sector demonstrates the most robust environmental disclosure, and the healthcare sector exhibits the least pronounced environmental disclosure. In the context of social

disclosure, the financial sector records the highest average score, while the consumer non-cyclical sector displays the lowest score. In governance disclosure, the infrastructure sector garners the highest average score, unlike the consumer non-cyclical sector, which exhibits the lowest average score.

The descriptive statistical examination in Table 3 unveils that the lowest ESG disclosure value is 0.208, while the highest and average values stand at 0.592. It implies that, on average, companies have disclosed ESG information corresponding to 57 points from the entirety of ESG indicators. It constitutes approximately 59.3% of the total. The standard deviation value generated by the research is 0.151, which is smaller than the average ESG score. Hence,

the ESG disclosure data are evenly distributed and do not exhibit significant deviations. The result suggests that the ESG scores are closely clustered around the mean, demonstrating a consistent pattern without significant deviations.

Furthermore, concerning information asymmetry, represented by SPREAD, it is noteworthy that the minimum recorded value is 1.554, while the maximum reaches 97.411. Following the findings of Nagar et al. (2018) and Baldauf and Mollner (2020), a positive correlation is observed between the bid-ask spread value and the degree of information asymmetry. In simpler terms, as the bid-ask spread value increases, the information asymmetry level also increases conversely.



Note: X = Environmental, Social, and Governance (ESG) disclosure, M = mediation variable (SPREAD), Y = firm value (Q), a, b, and c' = regression coefficient, and eM and eY = error term

Figure 2 Simple Mediation Model

Table 2 Environmental, Social, and Governance (ESG) Disclosure by Various Sectors

Industry Sector	Average-Environment	Average-Social	Average-Governance
Basic Materials	1.83	1.79	1.87
Consumer Cyclical	1.70	1.70	1.85
Consumer Non-Cyclical	1.67	1.57	1.58
Energy	2.02	1.77	1.92
Financial	1.55	1.93	1.86
Health care	1.45	1.79	1.68
Industrial	1.73	1.81	2.00
Infrastructure	1.78	1.82	2.12
Property and Real Estate	1.73	1.83	1.98
Technology	1.69	1.82	1.97
Transportation and Logistics	1.62	1.78	1.91
Min.	1.45	1.57	1.58
Max.	2.02	1.93	2.12

As for the mean of information asymmetry (SPREAD), it surpasses the standard deviation of 17.423. It suggests a balanced and uniform distribution of data points across the range of values for information asymmetry. It implies that information asymmetry is not biased towards specific conditions or values, which can impact the validity of statistical analyses and conclusions drawn from the data.

Regarding firm value characterized by Tobin's Q (Q), it is important to note that the minimum value recorded is 0.001, while the highest reaches 3.805. Notably, the data for the subsequent year ($t + 1$) during the research period are adjusted to measure information asymmetry, ensuring that the performance assessment remains pertinent to the chosen time frame. This alteration ensures heightened relevancy of the measured performance.

Concurrently, the average value derived for Tobin's Q is 0.737. It exceeds the standard deviation value of 0.611. This outcome signifies a reasonably

uniform distribution of data points across the range of Tobin's Q values.

Furthermore, the findings of hypothesis testing utilizing the process macro by Hayes are depicted in Tables 4 to 6. Table 4 presents the results of H1, which examines the relationship between ESG disclosure and information asymmetry. The results indicate an insignificant relationship, as evidenced by the t-value of -0.3667, $P > 0.05$ (0.714), and an R-squared value of 0.005, indicating a very small value. Therefore, it can be concluded that ESG disclosure does not affect information asymmetry. Thus, H1 is rejected.

Table 5 illustrates the results with a t-value of -2.1549 for the effect of ESG disclosure on firm value (Q), indicating a significant relationship with a P-value of 0.0320. However, for the relationship of information asymmetry on firm value, the t-value is -0.9971 with a P-value of 0.3196, signifying no effect of information asymmetry on firm value. Consequently, the findings do not support H2 and H3, but they support H4 with a negative direction.

Table 3 The Results of Descriptive Statistics Analysis

Variable	Min	Max	Mean	Std Dev.
ESGD	0.208	0.9270	0.5920	0.1510
SPREAD	1.554	97.412	27.609	17.423
Q	0.001	3.8050	0.7370	0.6110

Note: ESGD= Environmental, Social, and Governance (ESG) Disclosure. SPREAD measures information asymmetry, and Q (Tobin's Q) measures firm value.

Table 4 The Path A of X (Environmental, Social, and Governance (ESG) Disclosure) on M (Information Asymmetry)

Outcome Variable: SPREAD (286 sample size)						
Model Summary						
R	R-Sq.	MSE	F	df1	df2	P
0.0218	0.0005	304.5154	0.1345	1.0000	284.0000	0.7141
Model						
	Coeff.	SE	T	P	LLCI	ULCI
Constant	29.0950	4.1809	6.9591	0.0000	20.8656	37.32440
ESGD	-2.5059	6.8332	-0.3667	0.7141	-15.9561	10.94444
Standardized Coefficients						
	Coeff.					
ESGD	-0.0218					
Covariance Matrix of Regression Parameter Estimates						
	Constant	ESGD				
Constant	17.4795	-27.6850				
ESGD	-27.6850	46.6933				

Note: SPREAD measures information asymmetry. R= correlation, R-Sq= R-Square (coefficient of determination), MSE= mean squared error, F= f-value, df1= degrees of freedom 1, df2= degrees of freedom 2, P= probability, Coeff= coefficient, SE= standard error, T= t-value, LLCI= Lower Level Confidence Interval, ULCI= Upper-Level Confidence Interval, and ESGD= Environmental, Social, and Governance (ESG) Disclosure.

The output for testing the direct effect of ESG disclosure on firm value is presented in Table 6. The direct effect of ESG disclosure on firm value has a path coefficient value of -0.5122 with a significance level of 0.0320, indicating a significant effect ($p < 0.05$). Meanwhile, the indirect effect or mediation effect is 0 between the Lower Level Confidence Interval (LLCI) and the Upper-Level Confidence Interval (ULCI). If the value between BootLLCI and BootULCI contains 0, it can be said that there is no mediation effect in the relationship between ESG disclosure and firm value (Abu-Bader & Jones, 2021; Hayes, 2018). In the research, the value of BootLLCI is -0.0412, and BootULCI is 0.0475, with a value of 0 between these two values. Hence, information asymmetry does not mediate the relationship between ESG disclosure and firm value. The results only support H4, which indicates an effect of ESG disclosure on firm value, but with a negative direction.

An overview of the hypothesis testing results is presented in Table 7. There is no empirical support for H1. There is an effect of ESG disclosure on information asymmetry. However, the results do not align with Agency theory, which expects disclosure to have a negative impact on information asymmetry. The research data indicates that the ESG disclosure

by companies has not yet influenced information asymmetry. This finding is consistent with Usman et al. (2020) that ESG disclosure does not significantly affect information asymmetry. According to Usman et al. (2020), the insignificant relationship is due to the information absorption process regarding Corporate Social Responsibility (CSR) reporting practices and ESG scores requiring more time (lagged time) compared to other information. The market needs a longer time lag than usual to absorb this information fully.

Another factor considered to contribute to the insignificance of ESG disclosure on information asymmetry is the company's sustainability performance, deemed as not materially valuable and only conducted by companies as a greenwashing tactic (Kim & Lyon, 2015). Furthermore, according to Kim and Lyon (2015), the lack of credibility in sustainability reports can lead stakeholders to assume that non-financial information is inaccurate and unimportant, potentially misleading information about the actual situation and condition of the company. Additionally, the different backgrounds of investors also play a role in determining the level of importance of sustainability-related information, such as aspects within ESG (Masulis & Reza, 2015).

Table 5 The Path B of M (Information Asymmetry) on Y (Firm Value) and Regression coefficient of X (Environmental, Social, and Governance (ESG) Disclosure) on Y (Firm Value)

Model Summary						
R	R-Sq.	MSE	F	df1	df2	P
0.1386	0.0192	0.3683	2.7734	2.0000	283.0000	0.0641
Model						
	Coeff.	SE	T	P	LLCI	ULCI
Constant	1.0985	0.1573	6.9828	0.0000	0.7888	1.4081
ESGD	-0.5122	0.2377	-2.1549	0.0320	-0.9801	-0.0443
SPREAD	-0.0021	0.0021	-0.9971	0.3196	-0.0061	0.0020
Standardized Coefficients						
	Coeff.					
ESGD	-0.1269					
SPREAD	-0.0587					
Covariance Matrix of Regression Parameter Estimates						
	Constant	ESGD	SPREAD			
Constant	0.0247	-0.0338	-0.0001			
ESGD	-0.0338	0.0565	0.0000			
SPREAD	-0.0001	0.0000	0.0000			

Note: SPREAD measures information asymmetry. R= correlation, R-Sq= R-Square (coefficient of determination), MSE= mean squared error, F= f-value, df1= degrees of freedom 1, df2= degrees of freedom 2, P= probability, Coeff= coefficient, SE= standard error, T= t-value, LLCI= Lower Level Confidence Interval, ULCI= Upper-Level Confidence Interval, and ESGD= Environmental, Social, and Governance (ESG) Disclosure.

Table 6 The Results of the Effects of X (Environmental, Social, and Governance (ESG) Disclosure) on Y (Firm Value)

Total Effect of X on Y						
Effect	SE	T	P	LLCI	ULCI	C-es
-0.571	0.2376	-2.1337	0.0337	-0.9748	-0.0393	-0.1256
Direct Effect of X on Y						
Effect	SE	T	P	LLCI	ULCI	C-es
-0.5122	0.2337	-2.1549	0.0320	-0.9801	-0.0443	-0.1269
Indirect Effect(s) of X on Y						
	Effect	BootSE	BootLLCI	BootULCI		
SPREAD	0.0052	0.0205	-0.0412	0.0475		
Direct Effect of X on Y						
	Effect	BootSE	BootLLCI	BootULCI		
SPREAD	0.0013	0.0051	-0.0101	0.0119		

Note: SPREAD measures information asymmetry. SE= standard error, T= t-value, P= probability, LLCI= Lower Level Confidence Interval, ULCI= Upper-Level Confidence Interval, and C-es= the centered total effect.

Table 7 Summary of Hypothesis Test

	Hypothesis Statement	Results	Meaning
H1	Environmental, Social, and Governance (ESG) Disclosure → Information Asymmetry	Negative, Insignificant	Rejected
H2	Information Asymmetry → Firm Value	Negative, Insignificant	Rejected
H3	Environmental, Social, and Governance (ESG) Disclosure Information Asymmetry → Firm Value	No mediation effect	Rejected
H4	Environmental, Social, and Governance (ESG) Disclosure → Firm Value	Negative, significant	Accepted

The second hypothesis, which is the relationship between information asymmetry and firm value, is also not supported by empirical evidence. It is inconsistent with the Signaling theory. According to Cheryta et al. (2018), this nonsignificant relationship can be explained as companies' awareness and initiative to disclose financial and non-financial information in Indonesia, which is sufficient to meet investors' expectations. This result is in line with the Stakeholder theory, which states that the company's goal is to improve the welfare of its stakeholders, including the shareholders, and each stakeholder has the same right to obtain the necessary information.

The lack of empirical support for the mediation effect of information asymmetry on the relationship between ESG disclosure and firm value indicates a discrepancy with Signal theory. The information presented by companies does not serve as positive signals that enhance firm value. ESG information, considered a signal, has not been effectively absorbed. Thus, it fails to reduce information asymmetry and impact firm value (Sugianto et al., 2022). Additionally, information asymmetry as a negative signal may not function as a mediator due to factors such as

firm size, industry type, economic conditions, and market situations, which can influence investors' considerations regarding the importance of ESG-related information (Satrio, 2021). The failure of the mediating role and state is that investors perceive non-financial information as having no influence or relevance in their decision-making (Mosallanezhad et al., 2021). Investors still prioritize financial information as more relevant to their goals and expectations, aiming to achieve maximum returns (Cornell, 2020).

Meanwhile, the relationship between ESG disclosure has a statistically significant negative direct impact on firm value. Greater ESG disclosure is associated with lower firm value. The result challenges the Signal theory, suggesting that ESG disclosure does not act as a positive signal for the improvement of firm value. Unlike the expectation that ESG disclosure provides valuable information and transparency, the research aligns with studies indicating a negative impact on firm performance due to perceived ESG costs (Fatemi et al., 2018; Farvaque et al., 2011; Farooq, 2015). High ESG costs may lead to inaccurate and complex disclosures, potentially reducing investors' trust.

Additionally, specific industries like food and beverage, steel, and financial services may be more vulnerable to negative media coverage on sustainability issues. The research by Wong and Zhang (2022) suggests that information spreads quickly in the current technological landscape, putting a company's reputation more at risk if there is negative media coverage related to sustainability performance. The findings indicate that certain industries, like food and beverage, steel, and financial services (particularly banking and insurance), are most susceptible to the negative impacts of sustainability information circulating through the media, potentially deviating from investors' expectations (Wong & Zhang, 2022).

In conclusion, the research challenges established theories by revealing that ESG disclosure does not significantly reduce information asymmetry as expected by Agency theory. The slow absorption of ESG information contributes to its limited impact on information asymmetry. Moreover, the research contradicts Signaling theory by demonstrating a direct negative impact of ESG disclosure on firm value, suggesting that increased disclosure is associated with lower firm value. The lack of empirical support for the mediation effect of information asymmetry on the relationship between ESG disclosure and firm value further underscores the complex dynamics of ESG-related information in influencing firm performance. Additionally, specific industries, such as food and beverage, steel, and financial services, emerge more vulnerable to negative media coverage related to sustainability issues. While acknowledging the research limitations, such as data dispersion and the need for alternative measurement methods, these findings offer valuable insights into the intricate interplay between ESG disclosure, information asymmetry, and firm value in the Indonesian context.

CONCLUSIONS

Based on the data analysis and tests performed, the research cannot prove the effect of ESG disclosure on information asymmetry and the mediating effect of information asymmetry. Notably, the research findings reveal a negative relationship between ESG disclosure and firm value. It implies that ESG disclosure is viewed as an activity that adds costs to the company, potentially diminishing its profits and the returns for investors. Consequently, it will reduce the company's overall value. The information conveyed through ESG disclosure is also deemed unreliable and not crucial in the decision-making process for investors. Furthermore, ESG disclosure indirectly exposes various factors indicating the limitations or shortcomings of the company, thereby influencing the level of trust and valuation placed on the company. Meanwhile, the insignificance of the other three effects indicates that many factors can affect firm value as the dependent variable in the research.

The research also has several limitations, such as a relatively short research period, population or

sample sizes that are less able to describe ESG more effectively, and variable measurement indicators that have an element of subjectivity in measuring ESG disclosure through content analysis and index scoring, which tends to depend on the researchers' perception. Some suggestions from the limitations are an attempt to extend the research period, especially since SEOJK No. 16 of 2021 was enacted only in 2019 for the financial sector. Meanwhile, the non-financial sector started in 2021 with a grace period until 2022. In addition, the population and sample need to be classified by industry sector, considering that ESG depends on the type of industry and has different interests in ESG information.

Moreover, future research can use other variables besides information asymmetry and try to re-identify what factors may influence companies in communicating ESG information. It is essential to note that regulations mandating the disclosure of information have been enacted, influencing investor considerations about a company's compliance level. Then, to minimize subjectivity in measurement through content analysis and index scoring, future researchers can try peer review to balance the perception and objectivity of the disclosure indicators or standards used. Future research can also examine the assurance in each company's sustainability report to ensure that the disclosed information meets the credibility aspect.

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