

The Moderating Role of Firm Values in ESG Disclosure: An Integrated Signaling and Legitimacy Theory

Maristiana Ayu

Email: maristiana@saburai.ac.id

Faculty of Economics and Business, Sang Bumi Ruwa Jurai University

Adress: Imam Bonjol 468, Langkapura, Bandar Lampung, Lampung

ABSTRACT

Environmental, Social, and Governance (ESG) disclosure is crucial for enhancing investor confidence through sustainable business practices. However, not all high-value performance firms in Indonesia apply or complete ESG disclosure. This study analyzes the moderating role of Firm Value in the effect of ESG disclosure on Stock Liquidity. It also examines the direct effect of Firm Value on Stock Liquidity. The study uses data from LQ 45 companies on the Indonesia Stock Exchange (2020-2024) and a moderated regression model. The results show that Firm Value strengthens the positive effect of ESG disclosure on Stock Liquidity. ESG disclosure and Firm Value also directly affect Stock Liquidity. This finding implies that high-value companies receive a more favorable market response to ESG disclosure. Strong Firm Values can increase investor attractiveness and company Stock Liquidity by extending signaling theory integrated with legitimacy theory

Keywords: *ESG Disclosure; Firm Value; Stock Liquidity*

©2026 The Author (s). Published by Faculty of Economics and Business University of Lampung. This article is an open-access article distributed under Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0)

INTRODUCTION

The rapid growth of the business world is evident in increasingly diverse industrial sectors and fiercer competition. This competition often drives profit-oriented activities with little regard for negative impacts. Businesses that focus solely on short-term profits may not survive in the long term. For sustainable growth, companies should consider improvement factors, account for environmental impact, and publish sustainability reports.

Sustainability has become central in corporate governance, driven by global pressure on environmental, social, and governance (ESG) issues. The Financial Services Authority (OJK) now requires companies in the financial sector and public issuers to prepare and publish Sustainability Reports in accordance with OJK Regulation No. 51/POJK/03/2017. Sustainability disclosure can increase investor confidence by conveying the company's commitment to social and environmental responsibility, referring to the theory of information asymmetry. The presence of sustainability disclosure, especially ESG disclosure, can reduce market uncertainty, thereby increasing stock liquidity by boosting trading volume and narrowing bid-ask spreads.

Some studies still yield inconsistent results. Cao et al (2024) found that the quality of ESG disclosure is positively correlated with stock liquidity in China. Liang, Yet al.(2023) prove that ESG disclosure increases stock liquidity by reducing information asymmetry and improving corporate reputation. Liu, L. et al., (2023) show that ESG disclosure strengthens stock liquidity in Japan during the COVID-19 pandemic. However, research also reveals conflicting or negative results Wong, J. B., & Zhang, (2022) demonstrate that companies with strong reputations are more negatively affected by ESG-related media coverage, and smaller, less liquid companies are more vulnerable to these negative impacts. Haddad, R. H., et al. (2024) showed that CSR disclosure negatively affects stock liquidity Ardianto, F., & Sukardi (2024) showed that ESG negatively affects the volatility of Sharia stock prices. Meng-tao, C.,et al (2023) found that stock liquidity is not affected by ESG disclosure when considering industry classifications and company characteristics. Other research shows the low level and incompleteness of disclosure provided Faransahad, G. F., & Wulandari, (2024); Wardani, I. A. et al. (2025); Nipper, M. et al. (2025); and Permatasari, P., & Gunawan (2023) report limited human resources, regulations that lack enforcement, and assessments that lack uniformity. Adiasih, P., & Lianawati (2018) found that these factors result in low investor confidence. Another factor that can influence in-compliance ESG disclosure and internal bias is firm value (Brooks, C., & Oikonomou, 2018; Shaikh, 2022).

Firm value is the market's assessment of a company's overall worth, based on factors such as profitability, growth potential, and perceived risk. This value reflects the market's perception of a company's long-term prospects and performance, and can be an important moderating factor in the influence of sustainable disclosure on stock liquidity. High-value companies are generally considered more stable, credible, and attractive to investors. Sustainability disclosure by high-value companies tends to be responded to more positively by the market than that of low-value companies.

Several studies support the notion that ESG disclosure positively affects firm value. Rafi, M., & Hadiprajitno (2024) prove that ESG disclosure affects firm value in the textile industry sector, while Tamasiga, P., et al. (2024); Li, L. et al. (2024); and Propheta, M. et al. (2025) examined various industrial sectors and found the same results that ESG disclosure has a positive and significant effect on firm value. However, several other studies show different results, namely the study by Mahendra, D. A., & Purwanto (2024), which shows that sustainability report disclosure has a negative and significant effect on firm value, in line with the study conducted by Ersoy, E. et al. (2022), which proves that at a certain point in the banking industry, ESG disclosure did not affect firm value. The research presented

by Qurniasih, R., et al. (2024) proves that ESG disclosure has negatively affected firm value. Another study has shown conflicting results, indicating that industry classification and the information presented are irrelevant or too general, and that ESG disclosure indicators remain insufficient, even though ESG disclosure is mandatory and not all companies in Indonesia have yet implemented it (Luthfiani, 2025). Data reports that 93% of 943 listed companies in the IDX (Indonesia Stock Exchange) have implemented ESG disclosure (Noviani, 2025), with the high ESG rating firms at 15 - 26 %, the medium 50%, and the low rating firms of ESG disclosure or having a high risk of ESG disclosure 24-35% (Pop&Toni, 2023 ;Kusumo, 2024 ; BION, 2023 ; Prasadhita, C., & Nawawi, 2024). Those figures indicate that the highly rated ESG disclosure firms are still low. It means many companies do not fully comply with the ESG disclosure standard.

Most research still focuses on the direct relationship between ESG disclosure and firm performance or value, particularly in the context of developed country capital markets with relatively mature reporting standards and market efficiency. A study by Del Gesso, C., & Lodhi (2025) generally assumes that the quality of information signals and corporate legitimacy automatically improve with increased ESG disclosure. However, this assumption is problematic in emerging markets like Indonesia, where ESG disclosure is driven by regulatory pressure from the Financial Services Authority and is still characterized by heterogeneous reporting quality and high information asymmetry. Furthermore, previous research in Indonesia has shown conflicting empirical results regarding the impact of ESG on market responses, suggesting the existence of an unexplained contingency mechanism. Furthermore, the literature on signaling and legitimacy theory often treats the two perspectives separately. Furthermore, they have not examined how firm value functions as a moderating factor determining the credibility of ESG disclosure under sustainability regulations. Consequently, there is insufficient research on how ESG disclosure functions in the Indonesian capital market as a credible signal or simply as a symbolic legitimacy tool.

Thus, the relationships between ESG disclosure and firm value, and between ESG disclosure and stock liquidity, do not always hold. It is important to include firm value as a moderating variable. Firm value can strengthen or weaken the relationship between ESG disclosure and stock liquidity. When a company has high value, investors are more likely to trust it and respond more positively to ESG disclosure. This can lead to increased trading activity and stock liquidity. Few studies have specifically examined the role of firm value as a moderating variable in the relationship between ESG disclosure and stock liquidity. This role follows the research recommendation by Bhimavarapu, V. M., et al. 2022. and Fuadah, L. et al. (2022). Firm value can moderate and influence the relationship between ESG disclosure and stock liquidity. This research helps deepen the understanding of corporate management in developing ESG disclosure strategies to strengthen investor confidence. Examining the role of firm value as a moderating variable is especially timely in emerging markets such as Indonesia, which has not been extensively explored in previous research.

By examining the moderating role of firm value in the relationship between ESG disclosure and market response in the context of the Indonesian capital market, which is moving towards sustainable investment practices, this study offers theoretical and

contextual novelty. The Indonesian capital market is still characterized by high levels of information asymmetry, heterogeneity in disclosure quality, and increasing regulatory pressure from the Financial Services Authority (OJK) regarding sustainability, in contrast to capital markets in developed countries that have mature and effective ESG standards.

In this context, this study integrates signaling and legitimacy theories by using firm value as a moderating variable to determine whether ESG disclosure is perceived by investors as a credible signal of a company's fundamental quality or as a symbolic tactic to gain institutional legitimacy. Therefore, this study enhances our understanding of the ESG signal selection mechanism in the Indonesian capital market. It also explains why market responses to ESG vary, in line with evolving market dynamics that have not yet fully taken hold.

This study integrates signaling theory with legitimacy theory to test the research hypothesis. Signaling theory, proposed by Spence (1973), holds that parties with more information (insiders) send signals to others (outsiders) to reduce information asymmetry. ESG disclosure is a strategic signal. Companies use it to reduce information asymmetry, build trust, differentiate in the market, justify business strategies, and encourage increased stock liquidity. Legitimacy theory (Dowling, J., & Pfeffer, 1975) holds that companies can gain social support by aligning with society's values and expectations. Information disclosure is one way to achieve this. Social legitimacy helps reduce negative information or uncertainty (Clarkson, P. M. et al. 2013; Al Amosh, H., & Khatib, 2022). Meng-tao, C. et al. (2023) stated that ESG disclosure is transparent information that signals social and environmental responsibility. It can increase investor and public confidence. As a result, investors become more confident and interested in trading, which ultimately increases stock liquidity. Based on these theories, this research develops the following research hypotheses: the effect of ESG disclosure on Stock Liquidity; the effect of Firm Value on Stock Liquidity; and the moderating role of Firm Value in the effect of ESG disclosure on Stock Liquidity.

LITERATURE REVIEW

ESG (Environmental, Social, and Governance) disclosure is a company's responsibility. It conveys non-financial information to stakeholders about its performance, risk management, policies, and sustainability strategies. This information is compiled in an ESG report. Including an ESG report in the annual report aims to provide transparency to investors, the government, customers, and the public. It also shows that the company conducts business sustainably and responsibly. Subagio (2025) noted that ESG disclosure plays a crucial role in shaping investor perceptions, building investor confidence, and influencing reactions. Meanwhile, stock liquidity is a measure of how quickly and easily a stock can be bought or sold on the stock market without significantly affecting its price, or the ability of investors to quickly convert stocks into cash at a low transaction cost. It plays a key role in shaping investor comfort and confidence in investment decisions in the capital market, as liquid stocks tend to attract more investors and drive active trading, thereby enhancing price efficiency and stability. This aligns with research conducted by Nguyen, H. T., & Nguyen (2024), which shows that liquidity can influence stock price stability and investors' reactions to market

information. Therefore, stock liquidity is crucial for investors and policymakers in making investment decisions and designing capital market policies.

Furthermore, better ESG disclosure will increase transparency, reduce information asymmetry, thereby increasing investor confidence and encouraging high stock trading activity. In line with the research by Cao, X. et al. (2024), which shows that the quality of ESG disclosure is positively correlated with stock liquidity, Liang, Y. et al. (2023) found that ESG disclosure increases liquidity by reducing asymmetry and improving reputation. Research by Liu, L. et al. (2023) shows that ESG disclosure strengthens stock liquidity in Japan, and Ha, N. T. T. et al. (2024) and Wang, K. et al. (2023) confirm this, finding that ESG disclosure has a positive effect on stock liquidity.

Firm value is the total economic value of a company, reflecting how much the market values it and investors' perceptions of the company's potential profits, risks, and long-term prospects. When the firm value is high and stable, investors tend to believe that the company has a bright future, which increases interest in buying shares (Tang, H. et al. 2024). In addition, it acts as a link between the company's actual performance and investor perceptions and decisions, as evidenced by the fact that changes in firm value trigger rapid market reactions, reflected in increases or decreases in share prices. Companies with high firm value reflect market perceptions of long-term performance and prospects. High firm value reflects investor confidence in the profitability that can sustain performance. Sustainable growth in companies' performance tends to lead to a better reputation, greater access to capital, and stronger growth expectations. This condition can attract investors, which drives increased trading volume. Higher trading volume reduces the bid-ask spread and increases stock liquidity. Several studies, including Tran, T. T., et al. (2018), Reny, A. R. et al. (2019), and Shamsi, N. I., et al. (2022), provide evidence that high firm value can positively affect stock liquidity.

Additionally, firm value reflects the market's response to a company's performance, prospects, and risks. Companies with high values generally attract investors because they have good reputations, which boosts market confidence. The link between ESG disclosure and high firm value will strengthen investors' interest in owning the company's shares, thereby increasing stock liquidity. Similarly, if the firm's value is low, ESG disclosure can be perceived as window dressing or not very credible by the market, thereby reducing the impact on stock liquidity. Research by Wang, K., Li, T., et al (2023), Li, L et al. (2024), and Cao, X. et al. (2024) found that firm value strengthens the effect of ESG disclosure on liquidity. Lestari, N. D., et al. (2024), who studied Indonesian companies in industries listed on the Jakarta Islamic Index in 2021-2023, showed that internal company factors, with a primary focus on firm value, can moderate the impact of ESG disclosure on stock liquidity.

This study not only confirms the relationship between Environmental, Social, and Governance (ESG) disclosure and firm value that has been widely discussed in previous literature, but also provides new theoretical insights through the integration of Signaling Theory and Legitimacy Theory in explaining the moderating role of firm value.

To explain the various mechanisms of ESG disclosure, this study considers it necessary to integrate Signaling Theory and Legitimacy Theory. However, these theories have not been able to consistently explain when ESG affects stock liquidity. This study shows that whether ESG disclosure is perceived as a credible signal or merely a symbolic legitimacy tool is influenced by firm value. Therefore, firm value bridges the two theories

and explains how the influence of ESG on stock liquidity is contextual, depending on the level of firm value.

Theoretically, this study demonstrates that, in addition to serving as an outcome or consequence of ESG practices, firm value also serves as a contextual mechanism that strengthens or weakens ESG signals communicated to its stakeholders. In Signaling Theory, ESG disclosure is seen as a signal a company sends to the market regarding its social responsibility, sustainability commitment, and governance quality. However, this study finds that the strength of ESG signals depends on firm value, such that firms with higher values tend to have higher ESG signal credibility in the eyes of investors.

From a Legitimacy Theory perspective, this study reveals that firms with high market value face greater legitimacy expectations from society and investors, making ESG disclosure a strategic instrument for maintaining social legitimacy and corporate reputation. Thus, this study proposes that firm value serves as a conceptual link between market signaling mechanisms and corporate social legitimacy efforts.

Therefore, the purpose of this study is to analyze the moderating role of firm value in the relationship between ESG disclosure and stock liquidity, examine the effect of ESG disclosure on stock liquidity, and provide evidence of the effect of firm value on stock liquidity.

This study captures the unique dynamics of ESG disclosure in the Indonesian capital market, where sustainability reporting is evolving faster than its credibility, by using firm value as a moderating mechanism within an integrated signal-legitimacy framework. The study's unique focus is on strengthening market reputation through ESG effects, particularly in the Indonesian and Southeast Asian capital markets.

The research model for this study is shown in Figure 1

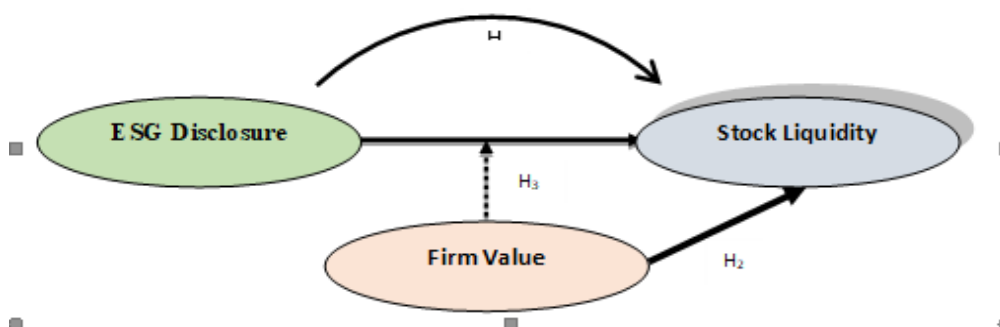


Figure 1
Research Model

METHODS

This study employed a quantitative research design using secondary panel data taken from the companies in the LQ 45 group. However, not all LQ 45 companies actively disclosed ESG reports during the 2020–2024 period, even though they have various ESG ratings (High, Medium, and Low), as reported by Prasadhita, C., & Nawawi, (2024). The LQ 45 index comprises companies with high liquidity, large market capitalization, and sound financial fundamentals. Therefore, the main sample criteria for this study are the LQ 45 companies that actively disclose ESG reports during the

period 2020-2024, using a purposive sampling technique, a data collection method based on criteria relevant to the research aims.

The detailed sample criteria were applied as follows:

1. Companies published corporate sustainability reports, annual reports, and financial statements for the period 2020–2024.
2. The LQ 45 companies listed on the IDX disclosed annual reports for the period from 2020 to 2024. The study uses secondary panel data from company financial and sustainability reports published from 2020 to 2022, using the GRI 2016 standard, and from 2023 to 2024, using the GRI 2021 standard, sourced from Yahoo Finance and company websites, based on data availability from 2020 to 2024.

Given the use of the LQ 45 sample, as it represents the upper limit of ESG adoption capacity and market oversight, this sample choice provides a conservative test of the proposed relationships, although the use of LQ 45 firms implies that the generalizability of the findings is limited to large, liquid, and highly visible firms in the Indonesian capital market. Although the level of ESG disclosure cannot be generalized to smaller or less liquid firms, the underlying mechanism—that firm value moderates the interpretation of ESG disclosure within an integrated signaling and legitimacy framework—would still be theoretically valid outside the LQ 45 context. This suggests that the findings are more informative in explaining how ESG functions under favorable market conditions compared to estimating the average effect for each firm.

After selecting the sample that fulfilled the criteria, 22 companies were selected and categorized into eight industries (Energy Mining, Banking, Gas and Energy, Consumer Goods, Telecommunication, Heavy Equipment, Non-Cyclical Consumer Goods, and Health Care). So, the total sample based on Panel Data is 110 observations (22 companies multiplied by 5 years).

To avoid potential biases arising from using a sample of LQ 45 companies, this study conducted robustness tests using a different measure of firm value, namely Market to Book Value, to ensure that the results were not solely driven by the characteristics of large companies. This is to avoid potential sample bias and to confirm that the relationships found in the study are not solely driven by the characteristics of large firms.

The independent variable is the disclosure of ESG taken from the company's sustainability report, measured by comparing the number of environmental, social, and governance indicators with the total environmental, social, and governance disclosure index, referring to GRI 300 for the environment, GRI 400 for social and governance based on GRI 2 or 102 (Christy, & Sofie., 2023).

Measurement is conducted through content analysis of the company's annual report and sustainability report using a dummy scoring method, where a value of 1 is assigned if an indicator is disclosed and a value of 0 if it is not disclosed. The ESG score is then calculated as the ratio between the number of disclosed indicators and the total indicators used.

$$\text{Env} = \text{number of company disclosures} / \text{total overall index}$$

Firm value is another independent variable, and plays the moderating role, measured by Tobin's Q (Tobin, 1967), with the following formulation:

$$\text{Tobin's Q} = (\text{MVE} + \text{DEBT}) / \text{TA}$$

In which are:

MVE= Market Value Equity

DEBT = Book Value of the Total Debt

TA= Total Assets

The dependent variable in this study is stock liquidity, measured using trading volume activity/TVA (Foster, 1986) with the following formulation:

TVA = Number of Company Shares Traded at Time

Number of Company Shares in Circulation at Time t

The model analysis used a moderated regression analysis by using the equation model in hypothesis testing, according to Hayes (2022;259-260), is:

$$Y \text{ Stock liquidity} = \alpha + \beta_1 X_1 \text{disc} + \beta_2 X_2 \text{Firmv} + \beta_3 X_1 \text{disc} * X_2 \text{Firmv} + \varepsilon \dots\dots$$

In which are:

$X_1 \text{disc}$ = ESG disclosure

$X_2 \text{Firmv}$ = Firm value

β_1 , β_2 , and β_3 will determine how much the effect of the independent variable and the moderating variable on the dependent variable is.

RESULTS

The results from Statistical Application “Eviews 12” using model testing with the Chow, Hausman, and Lagrange Multiplier tests, as well as the classical assumptions, are shown in Table 1.

Table 1
Results of Classical Model and Assumption Tests

Classical Assumption Tests	Test Results	Information
Chow Test	Probability 0.0001 < 0.05	FEM (Fix Effect Model) selected
Hausman Test	Probability 0.3637 > 0.05	REM (Random Effect Model) selected
Lagrange Multiplier Test	Probability 0.000 < 0.05	REM selected until testing with REM
Normal distribution	Probability 0.0630 > 0.05	Shows normal distribution
Multicollinearity	Correlation between variables $X_1 \text{disc}$, $X_2 \text{firm}$, $X_1 * X_2$ results < 0.8, namely 0.3020, -0.4260, 0.6448	No Multicollinearity
Heteroscedasticity	Test results of variable $X_1 \text{disc}$, $X_2 \text{firm}$, $X_1 * X_2$ show 0.560; 0.6356; 0.6514 > 0.05	No Heteroscedasticity
Autocorrelation Test	Shows Durbin Watson (DW) of $du < dw < 4 - du$ = 1.8719 < 2.0608 < 4 - 1.8719 (2.128)	No Autocorrelation

Sources: Data, Processed by Eviews 12, 2025

Then, the hypothesis testing results from the Moderated Regression Analysis model are presented in Tables 2 and 3.

Table 2
Results of Hypothesis Testing

LogY Stock liquidity = a + b₁LogX₁disc + b₂LogX₂Firmv + b₃LogX₁disc* X₂Firmv + ε...

$$\text{LogY}_{\text{Stock liquidity}} = 5.35 + 3.784\text{LogX}_{1\text{disc}} + 3.764\text{LogX}_{2\text{Firmv}} + 2.550\text{LogX}_{1\text{disc}} * \text{X}_{2\text{Firmv}} + \epsilon_{it}$$

Hypothesis 1:

Probability $0.0006 < 0.05$ shows that ESG disclosure results have a significant positive effect on stock liquidity, with the estimated effect value 3.784.

Hypothesis 2:

Probability $0.0066 < 0.05$ shows that the firm value has a significant positive effect on stock liquidity, with the estimated effect value 3.764.

Hypothesis 3:

Probability $0.0036 < 0.05$ shows that the firm value positively moderates the effect of ESG disclosure on stock liquidity, with the estimated effect value 2.550.

R^2 (R Square) after interaction

0.328 or 32.8%, which shows that firm value strengthens the ESG disclosure influence on stock liquidity, 32.8%. It has increased from 27.1%, compared to R^2 before the moderation interaction.

R^2 (R Square) before interaction

0.271 or 27.1%, which shows that firm value before the moderation interaction with ESG disclosure influences st

Sources: Data, Processed by Eviews 12, 2025

Table 3
Average ESG Disclosure and Tobin's Q Value

Average ESG Disclosure of LQ 45		0.328
Average component		
-	Environmental	0.21
-	Social	0.32
-	Governance	0.47
Average Firm value (Tobin's Q) LQ 45		1.13

Sources: Processed Data by Excel Application, 2025

To determine the ESG disclosure rankings of the companies based on the 110 data sample from 2020 to 2024 by using the Excel Application, descriptive statistical data, the ESG disclosure rankings are as follows:

1. Companies that disclose high values and receive awards until 2024 are: UNVR (Unilever), BBNI (Bank BNI), Bank BRI, INCO (PT. INTERNASIONAL NIKEL INDONESIA), and ITMG (INDO TAMBANG RAYA MEGAH), or a total of 5 companies
2. Moderate disclosure: BBTN (Bank BTN), BMRI (Bank Mandiri), CPIN (Charoen Pokphand Indonesia Tbk), ICBP (PT Indofood CBP Sukses Makmur Tbk), KLBF (Kalbe Farma), and ANTM (PT Aneka Tambang Tbk), totaling 6 companies.
3. Low disclosure: UNTR (PT United Tractors Tbk), TOWR (PT Sarana Menara Nusantara Tbk), TLKM (PT Telkom Indonesia (Persero) Tbk), TBIG (PT Tower Bersama Infrastructure Tbk, PTBA (PT Bukit Asam Tbk), PGAS (PT Perusahaan Gas Negara Tbk), ASII (PT Astra International Tbk), EXCL (PT XL Smart Telecom Sejahtera Tbk), TBIG (PT Tower Bersama Infrastructure Tbk), INKP (PT Indah Kiat Pulp & Paper Tbk), and INDF (PT Indofood Sukses Makmur Tbk), totaling 11 companies, that can be seen in Figure 2.

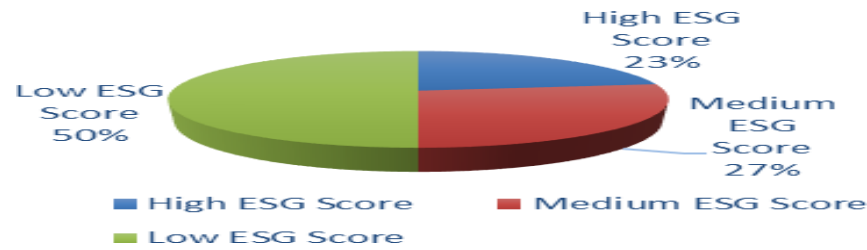


Figure 2
ESG Disclosure Ranking

Sources: Statistics Descriptive Results, Processed by Excel Application, 2025, Based on Sustainability Reports, 2020 – 2024

Table 4.
Test Results for Market Book Value

Chow Test	Probability 0.0003 < 0.05	FEM (Fix Effect Model) selected
Hausman Test	Probability 0.2627 > 0.05	REM (Random Effect Model) selected
Lagrange Multiplier Test	Probability 0.001 < 0.05	REM selected until testing with REM
Normal Distribution	Probability 0.0730 > 0.05	Indicates a normal distribution
Multicollinearity	The correlation between variables X1Disc, X2Firm(MTB), X1*X2results is < 0.8, namely 0.5020, 0.3260, and 0.7448	No multicollinearity
Heteroscedasticity	Test results for variables X1disc, X2Firm(MTB), and X1*X2results are shown. 0.360; 0.5276; 0.7514 > 0.05	No heteroscedasticity
Autocorrelation Test	Shows the Durbin Watson (DW) of $du < dw < 4 - du = 1.9719 < 2.0608 < 4 - 1.8719 (2.328)$	No autocorrelation
LogY Stock liquidity = $a + \beta_1 \text{LogX1disc} + \beta_2 \text{LogX2Firmv(MTB)} + \beta_3 \text{LogX1disc} * \text{X2Firmv} + \epsilon...$ (after moderation)		
LogY Stock liquidity = 0.55 + 5.055LogX1disc + 4.95LogX2Firmv(mtb) + 2.989LogX1disc* X2Firmv(mtb) + $\epsilon...$		
with probability: 0.0021 0.031 0.029 0.016		
LogY Stock Liquidity = $a + \beta_1 \text{LogX1disc} + \beta_2 \text{LogX2Firmv(MTB)} + \epsilon.....$ (before moderation)		
LogY Stock Liquidity = 0.426 + 4.805LogX1disc + 2.107LogX2Firmv(MTB) + $\epsilon...$		
with probability : 0.0175 0.048 0.0008		

Source: Data processed by eviews 12, 2026

Table 4 demonstrates robustness testing to ensure that the empirical results are insensitive to model specifications and variable measurements. Market-to-book (MTB) firm value is used to re-estimate the analysis. The results indicate the best model is the Random Effect Model (REM), with a probability test result before moderation of 0.0175 < 0.05 and after moderation of 0.0021 < 0.05, indicating consistent results with those measured using Tobin's Q. Winsorizing of extreme values was performed to reduce

potential bias, and the results remained consistent. Overall, these results confirm that firm value moderation in the relationship between ESG disclosure and stock liquidity is robust to various estimation approaches and model specifications.

DISCUSSION

The first requirement to get the best results must be fulfilled by using the best estimation model, namely the REM (Random Effect Model) or FEM (Fixed Effect Model), and classical assumption tests. The best-estimation model test shows that the REM model supports hypothesis testing in advance. Normality, Multicollinearity, Heteroscedasticity, and Autocorrelation tests support the classical assumption test results for the log-transformed data.

Normal distribution and Heteroscedasticity testing results show the probability value above 0.05. Besides that, Multikoleniarity also supports the assumption of no bias data, based on the correlation results of $X1_{disc}$, $X2_{firm}$, and interaction $X1$ and $X2$ ($X1 \times X2$) < 0.8. Also, Autocorrelation test results support the classical assumption, measured by Durbin Watson (DW) of $du < dw < 4 - du = 1.8719 < 2.0608 < 4 - 1.8719$ (2.128), so that the regression model test coefficient estimates are not biased, then continued to test the hypothesis.

It was proven that ESG disclosure has a positive and significant effect on stock liquidity, measured by a probability of $0.0006 < 0.05$, with an estimated value of 3.784, providing evidence that transparent ESG disclosure also shows a significant influence on the level of stock liquidity as measured by trading volume. The estimated value of 3.784 means that if ESG disclosure increases by 1 (one) time, stock liquidity will increase by 3.784 times. The estimated 3.784 value of ESG disclosure has a greater effect on stock liquidity than on firm value. This result aligns with the findings of Cao et al. (2024), Wang et al. (2023), and Liu et al. (2023). These results illustrate that complete, targeted, and relevant ESG disclosure provides a high level of investor confidence and reduces information asymmetry, as Signaling Theory postulates, thereby increasing the company's stock trading volume and liquidity.

It was shown that firm value has a positive and significant effect on stock liquidity, as indicated by the p -value of $0.0066 < 0.05$ and an estimated effect of 3.764. This effect value represents that if the firm value increases by 1 (one) time, stock liquidity will increase by 3.764 times. These findings support those of Tran et al. (2018), showing that high firm value, as measured by Tobin's Q, is positively associated with stock liquidity. These results illustrate that high firm value plays a fundamental role in increasing the attractiveness of stocks to investors and encouraging active buying and selling, thereby legitimizing the highest level of investor confidence and aligning with Legitimacy theory, which posits that increased stock trading volume is an indicator of stock liquidity.

The moderating role of firm value in the influence of ESG disclosure on stock liquidity, resulting in a probability value of $0.0036 < 0.05$, with the estimated effect value 2.550. It means that firm value can positively moderate the significant influence of ESG disclosure on stock liquidity. The estimated value effect 2.550 of the moderating role of firm value represents that the more strengthened firm value at least 1 (one) time, the higher stock liquidity due to ESG disclosure increases 2.550 times. These results support the research suggestion and implication by Wang, K. et al. (2023); Li, L. et al. (2024); and Cao, X. et al. (2024). These research results show that firm value strengthens the influence of ESG disclosure on stock liquidity. This result shows the

quasi-moderation type (Ghozali, 2013;224), showing that firm value moderates the influence of the independent variable (ESG disclosure) on the dependent variable (stock liquidity), and firm value can also play as an independent variable.

Research on the companies in the LQ 45 index shows an average ESG disclosure score of 0.328, indicating medium ESG risk. These results indicate that ESG disclosure has been adopted and disclosed ESG, but not comprehensively. It can be measured by the data per ESG component. The average governance component (G) shows the highest value at 0.47, while the social (S) and Environmental (E) components are 0.32 and 0.21, respectively. These show the minimum environmental disclosure on carbon emissions and energy efficiency. This illustrates that many LQ 45 companies have not entered the extractive industry, so attention to environmental aspects remains low or has not yet been explicitly required.

The firm's value, on average, is 1.13, indicating that the market values the company above its physical asset value due to strong future profit prospects and growth expectations. This shows a strong association between ESG disclosure and stock liquidity, with ESG disclosure values that have a moderate impact on the environment and society.

In the determination test of the influence value of R² before moderation of 27.1%, which means that ESG disclosure affects stock liquidity by only 27.1%, the remaining 72.9% is influenced by other factors, such as stakeholder engagement, top management commitment, corporate sustainability strategy, and industry uncertainty (Ho, L. et al. 2024; Rahman, H. et al. 2023; Zhang, D., & Liu, 2022). With moderation, the influence increases to 32.8%, indicating a 5.7% increase in moderation strength and suggesting that the firm's value has a strong influence.

That shows that firm value acts as a moderating variable, strengthening the relationship between ESG disclosure and stock liquidity: the higher the firm value, the greater investor confidence in ESG disclosure and the stronger its impact on stock liquidity. This implies that a Signaling theory integrates with the Legitimacy theory. When the ESG disclosure effect on stock liquidity is examined through signaling theory, it suggests that ESG disclosure primarily induces high investor confidence and, consequently, reduces information asymmetry. Then, when firm value plays a moderating role, strengthening the ESG disclosure effect on stock liquidity, it can enhance investor confidence in trading stocks in the market.

The fact that ESG disclosure automatically increases stock liquidity substantially challenges the dominant assumption in the literature on this subject. These findings suggest that this relationship is not universal, but rather depends on the condition of firm value as a key contingency factor. In other words, the effectiveness of ESG disclosure in increasing stock liquidity is determined by the extent to which the information is perceived as a credible signal, rather than merely symbolic.

Conceptually, this study suggests that the market employs a reputation-based filtering mechanism, where firm value serves as a credibility indicator that determines whether ESG disclosure will be accepted or not. This demonstrates that the limitation of the Signaling Theory approach in explaining the ESG-stock liquidity relationship lies in the implicit assumption that the market always responds to information rationally and homogeneously.

Furthermore, this study considers the application of Legitimacy Theory, which tends to view ESG disclosure as a tool for gaining social acceptance without considering how the market assesses the quality of such disclosure. This research suggests that legitimacy is insufficient to influence investor behavior unless it is supported by a strong foundation of firm value; this shifts perceptions from symbolic approval to substantive approval.

This study proposes, by integrating both perspectives, that firm value serves as a selection mechanism that determines the rules of market interpretation of ESG disclosure.

CONCLUSION

Firm value strengthens the influence of ESG disclosure on stock liquidity, especially among LQ 45 companies. These results indicate that high company values generally attract investors because they have a strong reputation and high market trust, thereby strengthening the impact of ESG disclosure on stock liquidity.

ESG disclosure will be more informative to the market if it comes from a company already considered high-value. Conversely, if the company's value is low, ESG disclosure can be perceived as window dressing or be viewed as less trusted by the market, and its impact on stock liquidity can be smaller.

These research results extend Signaling theory by showing that investors use company quality signals to infer trustworthiness. When ESG disclosure is not properly disclosed, the company's value can be a determinant of whether the signal is trusted. However, Signaling theory cannot stand alone in this study context; it should be integrated with Legitimacy theory. The results of either the firm value effect on stock liquidity or the moderating firm value effect on the effect of ESG disclosure on stock liquidity require the Legitimacy theory, even though ESG disclosure directly affects stock liquidity as a signal to reduce asymmetric information. This draws a Signaling theory.

Legitimacy theory makes a contribution that can assess the suitability of the firms' values with social norms and environmental issues, so that it can reduce reputation risk, especially for investors, and even investors can strengthen their legitimacy to be more trusted in the firm value, which creates higher investor confidence to increase trading stock volume.

The robustness test employing MTB as an alternative proxy verifies that the moderating effect of company value persists, suggesting that the empirical results are not susceptible to variations in measurement.

Contributions to developing markets such as Indonesia show that ESG signals are only effective when supported by strong firm values, meaning that ESG disclosure is measured not only by the scores achieved but also by company performance and values such as profitability, efficiency, and innovation.

Contribution for companies to focus more on long-term value strategies, such as developing ESG disclosure strategies by doing the right ways, not only chasing the high profit with cost efficiency, but also caring the social and environmental issues with innovation activity and good governance because it will strengthen the positive impact of ESG on investor trust to increase their trading stock volume, and ESG disclosure is not only about reports but building company credibility or reputation through sustainable company performance in the context of the ESG disclosure.

REFERENCES

- . (2023). *IDX ESG leaders: Index Saham Yang Berkontribusi Dalam Keberlanjutan*. BIONS.COM.https://www.bions.id/edukasi/saham/indeks-saham-idx-esg-leaders?utm_source=chatgpt.com (Upload tgl 1 Juni 2025)
- Adiasih, P., & Lianawati, V. (2018). *Asymmetry and Governance of Corporate Social Responsible Disclosure in Indonesia*. Doctoral dissertation, Petra Christian University).
- Al Amosh, H., & Khatib, S. F. (2022). Ownership structure and environmental, social and governance performance disclosure: the moderating role of the board independence. *Journal of Business and Socio-Economic Development*, 2(1), 49-66. <https://www.emerald.com/insight/2635-1374.htm>
- Ardianto, F., & Sukardi, A. S. (2024). Pengungkapan Environmental, Social, and Governance Disclosure Terhadap Volatilitas Harga Saham Syariah Dimoderasikan oleh Likuiditas. *Jurnal Ilmiah Ekonomi Islam*, 10(3), 3171-3180. <http://dx.doi.org/10.29040/jiei.v10i3.15431>
- Bhimavarapu, V. M., Rastogi, S., Gupte, R., Pinto, G., & Shingade, S. (2022).). Does the Impact of Transparency and Disclosure on the Firm's Valuation Depend on the ESG?. *Journal of Risk and Financial Management*, 15(9), 410. <https://doi.org/10.3390/jrfm15090410>
- Brooks, C., & Oikonomou, I. (2018). The effects of environmental, social and governance disclosures and performance on firm value: *A Review of the Literature in Accounting and Finance*, 50(1), 1–15. <https://doi.org/10.1016/j.bar.2017.11.005>
- Cao, X., Mei, T., & Li, S. (2024). Research on the relationship between ESG disclosure quality and stock liquidity of Chinese listed companies. *Green Finance*, 6(1), 24. doi: 10.3934/GF.20240
- Christy, E., & Sofie. (2023). Pengaruh Pengungkapan Environmental, Social, dan Governance terhadap Nilai Perusahaan. *Jurnal Ekonomi Trisakti*, 3(2), 3899–3908. <https://doi.org/10.25105/jet.v3i2.18233>
- Clarkson, P. M., Fang, X., Li, Y., & Richardson, G. D. (2013). The relevance of environmental disclosures: Are such disclosures incrementally informative? *Journal of Accounting and Public Policy*, 32(5), 410–431. <http://dx.doi.org/10.1016/j.jaccpubpol.2013.06.008>
- Del Gesso, C., & Lodhi, R. N. (2025). Theories underlying environmental, social and governance (ESG) disclosure: a systematic review of accounting studies. *Journal of Accounting Literature*, 47(2), 433–461.
- Dowling, J., & Pfeffer, J. (1975). Organizational legitimacy: Social values and organizational behavior. *Pacific Sociological Review*, 18(1), 122–136. <https://doi.org/10.2307/1388226>
- Ersoy, E., Swiecka, B., Grima, S., Özen, E., & Romanova, I. (2022). The impact of ESG scores on bank market value? Evidence from the US banking industry. *Sustainability*, 14(15), 9527. <https://doi.org/10.3390/su14159527>
- Faransahad, G. F., & Wulandari, I. (2024). The Effect of Sustainability Report Disclosure and Intangible Asset Value on Company Financial Performance (Case Study on Manufacturing Companies Listed on the Indonesia Stock Exchange for the 2018-2021 Period). *EKONOMIKA45. Jurnal Ilmiah Manajemen, Ekonomi Bisnis*,

- Kewirausahaan*, 12(1), 1075–1089. <https://doi.org/10.56709/mrj.v3i2.226>
- Fuadah, L. L., Mukhtaruddin, M., Andriana, I., & Arisman, A. (2022). The ownership structure, and the environmental, social, and governance (ESG) disclosure, firm value and firm performance: the audit committee as moderating variable. *Economies*, 10(12), 314. <https://doi.org/10.3390/economies10120314>
- Ghozali, I. (2013). *Aplikasi Analisis Multivariate dengan program SPSS* (Edisi ke t).
- Ha, N. T. T., Nguyen, T. C., & Ho, N. T. B. (2024). The impact of environmental, social and governance disclosure on stock prices. *Empirical Research in Vietnam. Heliyon*, 10(19), 1–10. <https://doi.org/10.1016/j.heliyon.2024.e38757>
- Haddad, R. H., Haddad, A. E., Haddad, A., & Sawalha, N. (2024). Corporate Social Responsibility Disclosure and Stock Market Liquidity. *The Case of Jordan. Sustainability*, 16(1), 88. <https://doi.org/10.3390/su16010088>
- Hayes, A. F. (2022). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York: Guilford.
- Ho, L., Nguyen, V. H., & Dang, T. L. (2024).). ESG and firm performance: do stakeholder engagement, financial constraints and religiosity matter?. *Journal of Asian Business and Economic Studies*, 31(4), 263–276. <https://doi.org/.https://www.emerald.com/insight/2515-964X.htm>
- Kusumo. (2024). Daftar Saham Ramah Lingkungan dengan Skor Tertinggi di Indeks ESG Leaders 2024. *Bisnis.Com.*, 1. <https://hijau.bisnis.com/read/20240630/653/1778157/daftar-saham-ramah-lingkungan-> (di upload tgl 1 juni 2025)
- Lestari, N. D., Wahyuni, N., & Meldona, M. (2024). The Impact of ESG Performance on Firm Value with Moderation of Corporate Sustainable Growth Rate (Study on JII Indexed Companies for the 2021-2023 Period). *Jurnal Ilmiah Ekonomi Islam*, 10(3), 3109–3118. <https://dx.doi.org/10.29040/jiei.v10i3.15069>
- Li, L., Saat, M. M., & Jiayi, W. (2024a). The Effect of ESG Disclosure on Firm Value: An Empirical Evidence from Chinese Listed Companies. *International Journal of Academic Research in Business and Social Sciences*, 14, 1091–1101. doi:10.6007/IJARBSS/v14-i1/20524.
- Li, L., Saat, M. M., & Jiayi, W. (2024b). The Effect of ESG Disclosure on Firm Value: An Empirical Evidence from Chinese Listed Companies. *International Journal of Academic Research in Business and Social Sciences*, 14(1), 1091–1101. doi:10.6007/IJARBSS/v14-i1/20524.
- Liang, Y., Xue, C., & Zhang, J. (2023). The impact of ESG ratings on stock liquidity risk: Evidence from the Chinese market. *Review of Integrative Business and Economics Research*, 12(4), 1–16.
- Liu, L., Nemoto, N., & Lu, C. (2023). The Effect of ESG performance on the stock market during the COVID-19 Pandemic—Evidence from Japan. *Economic Analysis and Policy*, 79, 702–712. <https://doi.org/10.1016/j.eap.2023.06.038>
- Luthfiani, D. (2025). BEI Sebut 97 Persen Emiten bikin Laporan SR Prinsip ESG. *Stock Exchange News*, 1. <https://kabar Bursa.com/market-hari-ini/113512>
- Mahendra, D. A., & Purwanto, A. (2024). Pengaruh Profitabilitas, Leverage, Likuiditas, Dan Aktivitas Terhadap Pengungkapan Laporan Keberlanjutan Dan Nilai Perusahaan (Studi Kasus pada Perusahaan non-Keuangan yang Terdaftar di Indeks Kualitas ESG 45 KEHATI Bursa Efek Indonesia Periode 2021-2023). *Diponegoro Journal of Accounting*, 13(4), 1–15.

- Meng-tao, C., Da-peng, Y., Wei-qi, Z., & Qi-jun, W. (2023). How does ESG disclosure improve stock liquidity for enterprises—empirical evidence from China. *Environmental Impact Assessment Review*, 98, 106926. <https://doi.org/10.1016/j.eiar.2022.106926>
- Nguyen, H. T., & Nguyen, H. T. N. (2024). Stock price crash risk, liquidity and institutional blockholders: evidence from Vietnam. *Journal of Economics and Development*, 26(3), 174–188. <https://doi.org/10.1108/JED-09-2023-0177>
- Nipper, M., Ostermaier, A., & Theis, J. (2025). Mandatory disclosure of standardized sustainability metrics: The case of the EU Taxonomy Regulation. *Corporate Social Responsibility and Environmental Management*, 32(2), 2171–2190. <https://onlinelibrary.wiley.com/doi/pdf/10.1002/csr.3046>
- Noviani, A. (2025). "BEI: 97% Emiten Patuh Sampaikan Laporan Keberlanjutan. *Bisnis.Com*. https://market.bisnis.com/read/20250110/192/1830697/bei-97-emiten-patuh-sampaikan-laporan-keberlanjutan?utm_source=chatgpt.com. https://market.bisnis.com/read/20250110/192/1830697/bei-97-emiten-patuh-sampaikan-laporan-keberlanjutan?utm_source=chatgpt.com. (Upload, 27 Juni 2025)
- Permatasari, P., & Gunawan, J. (2023). Sustainability policies for small medium enterprises: WHO are the actors?. *Cleaner and Responsible Consumption*, 9, 100–122. <https://doi.org/10.1016/j.clrc.2023.100122>
- Prasadhita, C., & Nawawi, M. (2024). The Financial Performace of ESG (Environmental, Social and Governance) Star Listed Companies in Indonesia. *Journal of Applied Business, Taxation and Economics Research*, 3(5), 573–580. <https://doi.org/https://doi.org/10.54408/jabter.v4i5>
- Propheta, M., Irmadariyani, R., & Kustono, A. S. (2025). The Effect of ESG Disclosure and Financial Performance on Company Value with Company Size as a Control Variable on Companies Listed on the ESG Leaders Index. *Asian Journal of Economics, Business and Accounting*, 25(2), 49-63. <https://doi.org/10.9734/ajeba%2F2025%2Fv25i21663>
- Qurniasih, R., Pramurindra, R., Fakhruddin, I., & Isna Inayati, N. (2024). Pengaruh Pengungkapan ESG Terhadap Nilai Perusahaan Dengan Praktik Good Corporate Governance Sebagai Variabel Moderasi. *E-Jurnal Akuntansi*, 35(2), 301–319. <https://doi.org/10.24843/EJA.2025.v35.i02.p01>.
- Rafi, M., & Hadiprajitno, P. T. B. (2024). Analisis Pengaruh Environmental, Social, Dan Governance (Esg) Terhadap Nilai Perusahaan (Studi Empiris pada Industri Tekstil di Indonesia di BEI Periode Tahun 2020-2023). *Diponegoro Journal of Accounting*, 13(4), 1–12. <http://ejournal-s1.undip.ac.id/index.php/accounting>
- Rahman, H. U., Zahid, M., & Al-Faryan, M. A. S. (2023). (2023). ESG and firm performance: The rarely explored moderation of sustainability strategy and top management commitment. *Journal of Cleaner Production*, 404, 136859. <https://doi.org/https://doi.org/10.1016/j.jclepro.2023.136859>
- Reny, A. R., Saleh, M. Y., & Sapiri, M. (2019). Pengaruh return on asset dan Tobin's Q terhadap volume perdagangan saham pada perusahaan perbankan yang listing di Bursa Efek Indonesia periode tahun 2013-2017. *Indonesian Journal of Business and Management*, 1(2), 9–16. <https://journal.unibos.ac.id/jbm/article/view/294/54>
- Shaikh, I. (2022). Environmental, social, and governance (ESG) practice and firm performance: an international evidence. *Journal of Business Economics and*

- Management*, 23(1), 218-237.). <https://doi.org/10.3846/jbem.2022.16202>
- Shamsi, N. I., Quader, S. M., & Abdullah, M. N. (2022). Investigating the relationship between stock liquidity and firm value. *Business Perspective Review*, 4(2), 16-31. <https://doi.org/10.38157/bpr.v4i2.450>
- Spence, M. (1973). Job Market Signaling. *Quarterly Journal of Economics*, 87(3), 355-374. <https://doi.org/10.2307/1882010>
- Subagio, I. S. (2025). Peran Pengungkapan Esg Dalam Meningkatkan Nilai Perusahaan Melalui Kinerja Keuangan: Studi Pada Sektor Energi Dan Barang Baku 2019-2023. *Jurnal TAMBORA*, 9(1), 109-114. <https://doi.org/10.36761/tambora.v9i1.5476>
- Tamasiga, P., Onyeaka, H., Bakwena, M., & Ouassou, E. H. (2024). . Beyond compliance: evaluating the role of environmental, social and governance disclosures in enhancing firm value and performance. *SN Business & Economics*, 4(10), 118. <https://doi.org/10.1007/s43546-024-00714-6>
- Tang, H., Xiong, L., & Peng, R. (2024). The mediating role of investor confidence on ESG performance and firm value: Evidence from Chinese listed firms. *Finance Research Letters*, 61, 104988. <https://doi.org/10.1016/j.frl.2024.104988>
- Toni, P. O. & (2023). the-state-of-esg-risk-across-industries--three-key-takeaways-from-our-annual-industry-reports. *Sustainalytics.Com.*, 1. <https://www.sustainalytics.com/esg-research/resource/investors-esg-blog/the-state-of-esg-risk-across-industries--three-key-takeaways-from-our-annual-industry-reports>. (Upload tgl 1 Juni 2025)
- Tran, T. T., Ngo, X. T., & Nguyen, L. N. (2018). Relationship between Corporate Capital Structure and Stocks Liquidity: Empirical Evidence in Vietnam. *Asian Journal of Finance & Accounting*, 10(2), 151166-151166. <http://dx.doi.org/10.5296/ajfa.v10i2.13719>
- Wang, K., Li, T., San, Z., & Gao, H. (2023). How does corporate ESG performance affect stock liquidity? Evidence from China. *Pacific-Basin Finance Journal*, 80, 102087. <https://doi.org/10.1016/j.pacfin.2023.102087>
- Wardani, I. A., Juanda, A., & Wicaksono, A. P. N. (2025). Structural ownership and ESG disclosure: Unveiling their impact on corporate financial performance. *Journal of Accounting and Investment*, 26(1), 314-334. <http://dx.doi.org/10.18196/jai.v26i1.24193>
- Wong, J. B., & Zhang, Q. (2022). Stock market reactions to adverse ESG disclosure via media channels. *The British Accounting Review*, 54(1), 1-44. <https://doi.org/10.1016/j.bar.2021.101045>
- Zhang, D., & Liu, L. (2022). Does ESG performance enhance financial flexibility? Evidence from China. *Sustainability*, 14(18), 11324. <https://doi.org/https://doi.org/10.3390/su141811324>