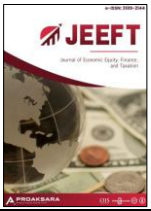
PROAKSARA

Journal of Economic Equity, Finance, and Taxation

Journal homepage: https://ojs.proaksara.com/index.php/jeeft



The Effect of Environmental, Social, and Governance (ESG) Disclosure on Firm Value with Government Ownership as a Moderating Variable (Empirical Study on Construction Sector Companies Listed on the Indonesia Stock Exchange in 2018–2024)

Azmi Fitriani[1*], Suherman[2], I Gusti Ketut Agung Ulupui[3]

[1-3]Master of Accounting, Faculty of Economics, Universitas Negeri Jakarta, Indonesia

E-mail: [1)] amiftrn01@gmail.com

ARTICLE INFO

Article History
Received : 28.07.2025
Revised : 18.08.2025
Accepted : 26.08.2025

Article Type : Research Article

ABSTRACT

The main objective of this research is to assess how the communication of sustainable practices (Environmental, Social, Governance/ESG) impacts the worth of companies within the construction sector that are publicly traded on the Indonesia Stock Exchange (IDX) from 2018 to 2024. The value of these companies will be gauged utilizing measures like Tobin's Q. Information for this study will be gathered from the yearly and sustainability reports of selected firms. Panel data regression will be employed as the analytical method. This investigation aims to offer valuable insights for stakeholders connected to ESG and company worth, with government ownership being considered as a moderating factor.

Keywords: Environmental Social Governance, Firm Value, Government Ownership, Construction Industry

1. INTRODUCTION

In recent years, the issue of sustainability has become a central focus across various sectors of the global economy. Companies are no longer solely expected to generate profits but are also required to operate responsibly towards the environment and society. A rising trend in incorporating sustainability into corporate strategy is by implementing Environmental, Social, and Governance (ESG) disclosure. ESG is now considered a vital factor for investors and stakeholders when evaluating a company's ongoing credibility. According to a report by the Global Sustainable Investment Alliance (2021), the value of global ESG-based investments reached over USD 35 trillion in 2020, reflecting a paradigm shift towards more ethical and sustainable investing. Today, investors evaluate companies not only based on financial reports but also on non-financial disclosures such as ESG. Recent research indicates that firm value tends to be higher for firms that are transparent in their sustainability aspects. This makes ESG a significant issue influencing investor perception of firm value, particularly in the construction sector, which carries high environmental and social risks. Firm value reflects how the market assesses a firm's ability to create future economic value.

Tobin's Q is commonly used in the financial research field to gauge a company's value, indicating investor confidence in its growth potential by examining the correlation between its market value and asset value. There is an idea that ESG plays a role in impacting the value of a company, with companies that prioritize transparency and sustainability being more highly regarded by investors. A robust ESG framework can indicate to investors that a company excels in governance, manages risks effectively, and fosters positive connections with different parties. A study by Friede et al. (2015) found that over 90% of global empirical research shows a positive correlation between ESG disclosure and firm value. In Indonesia, although awareness of ESG is still developing, investors are beginning to show interest in companies with good ESG disclosure. Previous research in the banking and energy sectors indicates that ESG disclosure can enhance a firm's market value. However, very little research has been conducted on the relationship between ESG

disclosure and company value within the construction industry, even though this sector carries high socio-environmental risks. Therefore, it is important to examine whether ESG disclosure influences the value of construction companies in Indonesia.

Several research gaps also form the basis for this study. For instance, Brooks & Oikonomou (2018), who studied property companies in the UK, found that environmental, social, and governance disclosure affects firm value. This in line with research by Aboud & Diab (2018), Li et al. (2018), Yu et al. (2018), and Fatemi et al. (2018), who also studied environmental, social, and governance (ESG) disclosure in various companies, stating that it influences firm value. However, Mahfuzhah (2022), researching plantation companies listed in the IDX ESG Leaders, found that environmental and governance factors do not affect firm value, but social factors do. Putri & Puspawati (2023) found that environmental and social factors affect firm value, but governance does not. Conversely, Revita (2020) found that environmental factors affect firm value, but social and governance factors do not.

SG disclosure aligns strategically with stakeholder theory and legitimacy theory principles. Stakeholder theory recognizes that organizations must address the interests of multiple constituencies beyond shareholders, encompassing employees, customers, communities, and government entities. This approach emphasizes the critical importance of developing and maintaining positive stakeholder relationships to support long-term organizational success and strategic goal achievement (Hannigan et al., 2019). In the context of ESG disclosure, companies that consider stakeholder interests tend to adopt sustainable practices to maintain their legitimacy and reputation in the public eye. Alternatively, legitimacy theory proposes that businesses need to comply with societal expectations and norms to gain social approval. In this context, ESG disclosure can be seen as a form of strategic communication by the firm to maintain its reputation and existence in the public eye (Deegan, 2002).

Empirically, the connection between disclosing ESG information and the value of a company continues to yield contradictory findings. Some studies, such as the meta-analysis by Friede et al. (2015), show contemporary empirical literature predominantly indicates a demonstrable correlation between corporate ESG disclosure practices and financial performance metrics. Nevertheless, these findings exhibit inconsistency across sectors, particularly within industries characterized by distinctive operational parameters such as construction, where ESG implementation presents sector-specific complexities. Within the Indonesian research context, scholarly investigation into the relationship between ESG disclosure and firm valuation remains predominantly concentrated within banking and manufacturing sectors (Minggu et al., 2023; Toti & Johan, 2022). Meanwhile, studies in the construction sector are still very limited. Yet, the construction industry contributes significantly to the national GDP and is a highly strategic sector for long-term economic development.

In Indonesia, attention to ESG disclosure has begun to increase, especially since the enactment of Minister of State-Owned Enterprises Regulation (Permen BUMN) No. PER-05/MBU/04/2021, which is an improvement on previous regulations and strengthens the obligation for government-owned companies to prepare sustainability reports, mandating public companies to submit sustainability reports as part of their annual reports. This regulation aims to promote transparency and accountability in environmental, social, and governance aspects. This is highly relevant for the construction industry, which is known to have significant environmental and social impacts due to high natural resource consumption, carbon emissions, and social risks in the infrastructure development process. Therefore, implementing ESG disclosure in the construction industry is not only a regulatory demand but also a strategic necessity to maintain a firm's legitimacy and competitiveness amid global dynamics.

This research includes government ownership as an additional factor that can impact the connection between ESG disclosure and company value. Theoretically, companies with government ownership have different characteristics compared to private companies. On one hand, state-owned companies have access to strategic projects, regulatory protection, and government incentives. On the other hand, companies with government ownership may also face efficiency barriers due to high bureaucratic interference and political pressure. Empirically, Prior empirical research has demonstrated that the association between ESG disclosure practices and firm valuation is subject to moderation by corporate ownership structure configurations. Wu et al. (2022) showed that the way in which a company is owned, whether publicly or privately, can impact how environmental, social, and governance (ESG) disclosure affects the overall worth of the firm. Another study

by Liao et al. (2018) found that businesses that are owned by the government usually follow ESG disclosure guidelines more closely. However, the extent to which ESG disclosure affects a company's value is greatly influenced by how involved and efficient the government entity is in managing the business. Thus, the involvement of government ownership could offer valuable perspectives on how ESG factors impact the value of companies in a country such as Indonesia that is still developing.

In practice, ESG disclosure can enhance firm value through several mechanisms. First, companies with good ESG disclosure are more trusted by investors and financing institutions, thus gaining easier access to capital. Second, ESG disclosure can improve operational efficiency, reducing potential environmental and social risks that could harm the firm. Third, ESG disclosure increases customer loyalty and strengthens firm reputation. The combined effect of these factors creates a positive perception of the firm's future, which will ultimately be reflected in an increase in market value or firm valuation on the stock exchange. This study uses control variables, which play an important role in eliminating the influence of unwanted external factors on the main relationship between variables. In this context, when researching the effect of ESG disclosure on firm value, many other factors can simultaneously influence that firm value. Therefore, to maintain the internal validity of the model, other relevant variables need to be controlled. Control variables help ensure that the observed effect between ESG disclosure and firm value is not the result of a third factor's influence. Thus, the research results become more objective and scientifically accountable. The model incorporates several control variables, namely firm size, firm age, leverage, business risk, and profitability.

This study aims to introduce a fresh perspective by examining how government ownership can impact the connection between ESG reporting and corporate worth, with a specific emphasis on construction companies traded on the Indonesia Stock Exchange (IDX). Another novelty lies in the methodological approach that simultaneously controls several important variables such as firm age, size, leverage, profitability, and business risk, as well as the long time span (2018–2024), which allows for an analysis of ESG disclosure trends over the long term. This combination makes this study unique and contributes significantly to the development of ESG literature in Indonesia. Within the established research parameters, this study objectives to quantify the impact of ESG disclosure on firm value among construction sector companies listed on the IDX during the 2015-2024 period, incorporating government ownership as a moderating variable to enhance the analytical framework's explanatory power.

2. LITERATURE REVIEW

2.1. Stakeholder Theory

Freeman (1984) introduced the idea of stakeholder theory, which highlights a company's responsibility to various groups beyond just shareholders, such as employees, customers, the community, government, and the environment. In relation to ESG criteria, businesses must oversee how their operations affect the environment and society, showing accountability to those with a stake in the company. ESG reporting is a means to show that the firm has considered stakeholder interests in strategic decision-making (Fernando & Lawrence, 2014). Thus, stakeholder theory explains that the better a firm meets stakeholder expectations through ESG disclosure, the greater the likelihood the firm will gain support, trust, and a positive reputation, which will ultimately contribute to improved firm performance.

2.2. Signaling Theory

Signaling theory explains how parties with more information can send signals to reduce uncertainty for other parties in decision-making. Introduced by Michael Spence (1973) in the context of the labor market, this concept is now applied in capital markets to show how companies communicate internal information to investors through various disclosures. Information asymmetry between internal management and investors can lead to adverse selection and moral hazard, so companies need to provide valid signals to build trust. One form of modern signaling is ESG (Environmental, Social, and Governance) disclosure, which reflects a firm's awareness of sustainability, good governance, and socio-environmental responsibility. In construction companies, ESG disclosure, for example, the use of environmentally friendly materials, work safety, community relations, and procurement integrity, becomes an indicator of signal quality. Signaling theory helps explain how ESG disclosure can influence firm value through investor perception of firm performance and risk.

2.3. Environmental, Social, and Governance (ESG) Disclosure

Disclosure of ESG (Environmental, Social, and Governance) factors is becoming a common practice in the financial industry, combining company guidelines with criteria related to environmental sustainability, social accountability, and business management (Noviarianti, 2020). To enhance their worth, businesses should focus on enhancing their ESG metrics. Investors tend to choose companies with a good public image because it increases customer loyalty and provides incentives such as easier bank credit according to Bank Indonesia Regulation No: 7/2/PBI/2005, especially for companies that comply with environmental management, thus impacting firm value. Environmental disclosure affects quality of life and guarantees human sustainability, so companies are obliged to maintain balance, preservation, and prevent environmental damage (Hadi, 2018). Environmental responsibility requires companies to accept their operational impact and commit to producing environmentally friendly goods/services, including improving the surrounding environment.

Meanwhile, governance disclosure is the system of firm regulation and control that creates added value for stakeholders. Good governance emphasizes accountability and transparency at all management levels, the emergence of leaders who build organizational culture, and consistency in carrying out responsibilities (Hadi, 2018). Disclosure of good governance can increase firm value by reducing the risk of self-serving decisions and increasing investor confidence.

2.4. Firm Value

Investors assess the value of a company based on how well they believe the managers are handling the resources allocated to them, which can be reflected in the company's stock price (Indrarini, 2019). The worth of a company reflects the level of confidence the public has in the company, which is built over many years of undertaking various activities starting from the company's inception to the present day (Hery, 2019). Firm value is a critical performance metric. Its growth directly elevates stock prices and shareholder wealth, serving as a key indicator of managerial success. For investors, rising firm value signals a compelling investment opportunity, as it reflects enhanced company performance and the effective achievement of corporate objectives (Indrarini, 2019).

2.5. Government Ownership

One important aspect that can influence the effectiveness of ESG's impact on firm value is the structure of government ownership. Government ownership has special characteristics because most of its shares are owned by the government, and it often receives priority in national strategic projects. However, state-owned companies also face challenges of bureaucracy, low efficiency, and potential political interference in strategic decision-making. Conversely, companies with non-government ownership are more competitive and responsive to the market, and more flexible in implementing internal policies, including ESG disclosure.

Previous research shows that companies with government ownership implement ESG disclosure as part of an integrated business strategy, while with government ownership, companies tend to implement it as a form of administrative compliance. Liao et al. (2018) and Wu et al. (2022) state that the ownership configuration plays a crucial role in influencing how ESG impacts a company's worth. As a result, studying the influence of government ownership in this study is crucial for developing a deeper insight into ESG disclosure patterns. Sihombing & Akbar (2022) found that government ownership affects firm performance, indicating that government involvement can influence the efficiency and effectiveness of firm operations. Angela et al. (2019) also stated that government ownership has a notable adverse correlation with company performance, indicating that government interference may lead to conflicting interests that impact company performance.

2.6. Firm Size

Firm size is a picture of a firm's financial capability in a certain period. In various studies, a firm's financial capability is viewed from various sides, such as net sales amount, number of employees involved, or the amount of assets owned by the firm (Febriyani & Srimindarti, 2010). Firm size is an important variable in studies of ESG disclosure and firm value because it relates to visibility, resources, and market expectations of the entity. Large companies generally have more resources to support the implementation and reporting of ESG, and have more complex reporting and risk management systems. Furthermore, large companies are more susceptible to public and regulatory scrutiny, thus encouraged to maintain their reputation through

sustainability disclosure. Firm size also determines the extent to which a firm can influence investor perception of firm value.

2.7. Leverage

Leverage serves as a gauge to show the level to which a company's assets are funded by borrowing rather than equity (Puspitaningrum & Indriani, 2021). By using debt as a source of financing, companies can expand operations or make investments without relying solely on their own capital (Puspitaningrum & Indriani, 2021). A high amount of leverage will indicate greater investment risk. This is supported by research conducted by Sutama & Lisa (2018) which states that leveraging can have a beneficial impact on a company's worth by effectively utilizing borrowed capital or debt-financed assets to boost profits. Thus, companies can optimize their operations and increase the profits they earn.

Meanwhile, according to Muharramah & Hakim (2021), leverage does not affect firm value because the use of high leverage tends to increase the firm's financial risk, which can result in significant financial pressure. The limitation of resources associated with debt that must be repaid can reduce the firm's ability to allocate funds efficiently for long-term growth, which in turn can limit the growth of firm value. Leverage measures the extent to which a firm finances its operations using debt. This variable is very important in financial research because the capital structure can influence strategic policies, including ESG disclosure.

2.8. Profitability

Profitability is used as the first control variable in this study. Assessing profitability is a common way to determine how successful a company is at making money within a certain timeframe (Wijaya, 2020). A high level of profitability is an indicator of good prospects for the firm, as companies with high profitability tend to attract investor interest. When investors see a firm with high profitability, they usually respond positively, which has the potential to increase firm value (Arifah & Wirajaya, 2018).

This notion is backed up by studies carried out by Pratomo & Sudibyo (2023) which states that having a strong level of profitability can greatly enhance a firm's overall value. Studies have revealed a strong correlation between a company's profitability and how investors view its success. Meanwhile, according to S. S. P. Putri & Wahyuningsih (2021), profitability does not affect firm value because, although there was an increase during the research period, the firm's profits did not increase significantly. This causes investors to assess that the firm's performance is ineffective in optimizing the use of its assets to obtain maximum profit. In this study, profitability can be measured using a ratio such as Return on Assets (ROA). ROA measures net profit against total assets, reflecting management's efficiency in managing assets.

2.9. Firm Age

Firm age describes how long an entity has been carrying out operational activities since it was first established. Firm age can influence stability and experience in facing business dynamics. Santosa & Herawati (2021) state that older companies tend to have more mature governance systems and experience in managing risk, including in the implementation of ESG. More mature companies generally have established management systems and broad market relations, thus able to increase operational efficiency and attract more investment.

Firm age or firm age is a control variable often used in accounting and financial research because it reflects the level of operational maturity of an entity. The longer a firm has been established, the more stable its operations and management systems are assumed to be. Firm age also shows accumulated experience in facing risks, utilizing market opportunities, and building reputation in the eyes of investors and regulators. In the context of ESG, older companies tend to have more systematic reporting structures and are accustomed to non-financial reporting practices such as sustainability. Furthermore, older companies generally already have infrastructure that supports the more effective implementation of ESG, such as internal audit systems and corporate social responsibility divisions. However, it is not always the case that older companies are superior in ESG, as they may be trapped in conservative organizational structures.

2.10. Business Risk

Business risk is the level of uncertainty faced by a firm in running its operations that can affect revenue stability and the ability to generate profit. This risk can come from various sources, such as fluctuations in raw material prices, instability in market demand, industry competition, regulatory changes, or dependence on

long-term projects. In the context of the construction industry, business risk is very high due to the capital-intensive nature of projects, long durations, and influence by external factors such as weather, politics, and government policies.

Business risk influences management decisions in allocating resources for activities like ESG disclosure. Companies with high risk may be more cautious and reluctant to allocate budgets for ESG programs because they are considered not to provide direct benefits. Conversely, companies that can manage business risk effectively tend to be bolder in adopting sustainability practices as part of a differentiation strategy. Risk management becomes an important aspect in maintaining firm stability and sustainability, which ultimately affects the firm's overall value and performance.

2.11. The Effect of ESG Disclosure on Firm Value

Environmental, Social, and Governance (ESG) disclosure has become increasingly important for investors, stakeholders, and corporate leadership teams across global markets. These disclosures demonstrate organizational commitment to environmental sustainability initiatives, social responsibility programs, and effective governance structures. This analysis evaluates whether such disclosures create measurable value for organizations, utilizing Tobin's Q as the key performance indicator for firm valuation assessment.

Several previous studies show a positive relationship between ESG disclosure and firm value. For example, research by Frias-Aceituno et al. (2013) shows that companies that actively disclose sustainability information have better market performance. Previous research by Melinda & Wardhani (2020) showed that a statistically significant and positive association between the disclosure of corporate environmental performance, as measured by the environmental dimension of ESG, and firm value. Separately, social disclosure is defined as the reporting of a firm's performance in social domains, including but not limited to labor relations, human rights adherence, product responsibility, and community involvement. Research by Masruroh and Makaryanawati (2020,56) showed that social responsibility disclosure has a positive effect on firm value.

Previous research on the relationship between governance and firm value has been conducted by Aboud & Diab (2018); Brooks & Oikonomou (2018); A. Fatemi et al. (2018); Y. Li et al. (2018); Z. Li et al. (2020); Melinda & Wardhani (2020); Safriani & Utomo (2020), who stated that governance has a positive and significant effect on firm value. Different results were stated by Erkanawati (2019) that governance does not affect firm value. In general, the majority of research results indicate that disclosing ESG information has a beneficial impact on the value of companies. This is achieved by boosting reputation, lowering information uncertainty, facilitating access to funding, cutting down on capital costs, and bolstering investor trust. According to signaling theory and research results, it can be inferred that disclosing ESG information sends a positive message to investors regarding the sustainability of the business and the competence of management. This, in turn, boosts the appeal for investment and contributes to the rise in the firm worth.

H1: Environmental, Social and Governance (ESG) has a positive effect on firm value.

2.12. The Effect of ESG Disclosure on Firm Value is Moderated by Government Ownership

Wu et al. (2022) in their research found that corporate ownership structures, especially those involving government stakeholder participation, play a fundamental role in determining the effectiveness of ESG practices on company valuation. Specific ownership profiles appear to strengthen the positive impact of ESG disclosure on business performance, suggesting that government ownership may serve as a catalyst that enhances the relationship between ESG transparency and corporate value creation. Companies with government ownership that conduct good ESG disclosure will tend to receive more positive assessments from the market, as they are considered to have higher reputation, stability, and social responsibility. Conversely, in companies with non-government ownership, ESG signals may not be as strong or not captured positively by investors if not accompanied by high credibility. Thus, the effect of ESG disclosure on firm value is not linear but depends on the structural characteristics of the firm, such as government ownership. Drawing upon both theoretical principles and real-world observations, the next hypothesis outlined in this research study is:

H2: Government ownership as a moderation can strengthen the effect of ESG disclosure on firm value in the construction sector.

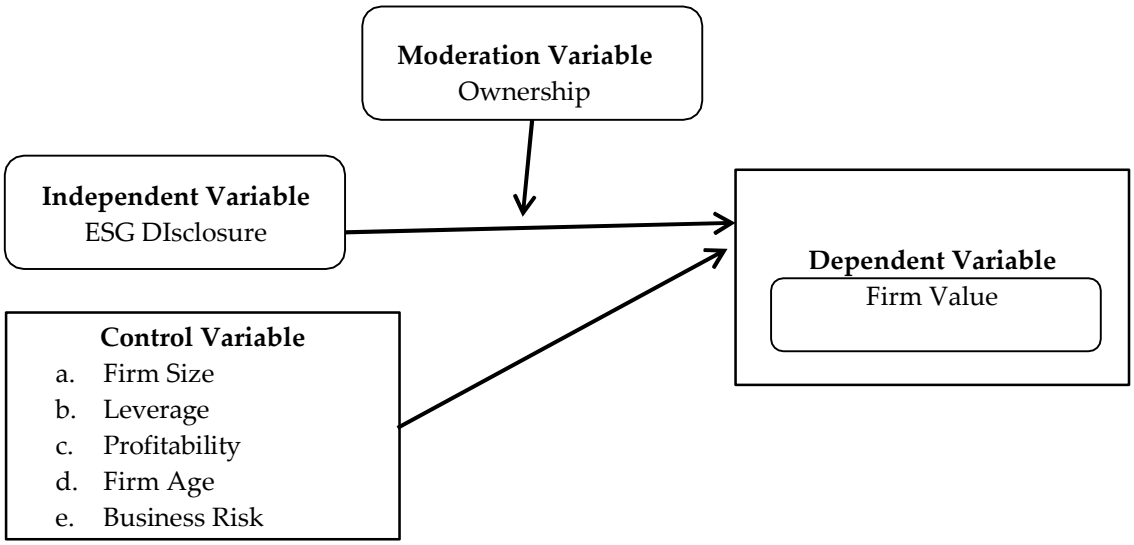


Figure 1. Conceptual Framework

The theoretical framework presented in the aforementioned figure delineates the interrelationships among research variables in examining the impact of ESG disclosure on firm valuation, incorporating government ownership as a moderating construct, while including additional control variables to enhance the model's explanatory power and statistical robustness.

3. RESEARCH METHODS

3.1. Unit of Analysis

This study focuses on examining companies operating in the construction industry that are publicly traded on the Indonesia Stock Exchange (IDX) between the years 2018 and 2024. Each firm that is a unit of analysis will be observed based on secondary data reflecting firm value, the level of ESG disclosure, government ownership, as well as control variables such as profitability, firm age, and business risk.

3.2. Research Population

The study encompasses all companies within the construction industry that:

1) Were listed on the Indonesia Stock Exchange (IDX) during the research period (2018-2024).
2) Published annual reports and/or sustainability reports containing Environmental, Social, and Governance (ESG) disclosure information.
3) Had the status of government ownership (often referred to as SOEs - State-Owned Enterprises) or non-government ownership (Non-SOEs).

Based on a search on the official website of the Indonesia Stock Exchange (www.idx.co.id) and meeting the above requirements, 61 construction stock issuers were obtained as the research population.

3.3. Research Sample

To ensure the data was relevant to our research objectives, researcher used a purposive sampling method, applying specific selection criteria to companies in the construction sector. This process identified 61 qualified companies. By collecting data from each company over six years, we established a robust dataset of 366 observations, allowing for longitudinal analysis. The specifics of this sampling process are detailed in the following table.

Table 1. Research Sample Calculation Criteria

No	Sample Criteria	Number of Companies
1	Construction companies listed on the IDX period 2018-2024	61
2	Companies presenting annual reports and/or sustainability reports	(1)
3	Companies presenting complete data related to research variables	(1)

4	Companies not delisted during the observation period	(1)
	Final Sample Count	58
	Number of Observations (×6 years)	348

3.4. Data Collection Techniques and Sources

The study utilizes existing data gathered from publicly available documents of construction companies that are traded on the Indonesia Stock Exchange between 2018 and 2024. The main sources of information are the companies' annual and sustainability reports which were obtained from either the Indonesia Stock Exchange website or the companies' own websites.

Data collection was carried out systematically, starting with identifying construction companies that met the population and sample criteria. Each report was reviewed to ensure data consistency over the research period, particularly for ESG components covering environmental, social, and governance indicators. Other financial data, such as total assets, total equity, and net profit, were extracted to calculate relevant additional financial performance indicators. This process was conducted to ensure data accuracy and completeness before further analysis.

3.5. Data Analysis Technique

Panel data regression analysis was utilized in this research project. This method was selected due to the nature of the data, which consists of observations from various construction companies between 2018 and 2024. The data set includes both time series and cross-sectional data, enabling the examination of dynamic patterns within and across companies. The analysis involved several techniques such as descriptive statistical analysis, Classical Assumption Tests, Multiple Linear Regression Analysis, and Statistical Significance Tests.

4. RESULTS AND DISCUSSION

4.1. Data Descriptive Statistics

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
tobins	403	6.99961	3.157262	-1.942687	11.23709
esg	403	3.203474	12.41822	0	71
kep	403	8.576605	2.242172	0	11.09479
lev	403	7.406327	2.069141	0	9.974701
prof	403	-1.295316	.7253719	-3	1.393926
age	403	3.049628	1.498762	1	5
risk	403	-.9925415	.7100363	-3	1.541454

Table 2 presents the descriptive statistics for all variables. Tobin's Q (TOBINS) shows a high average value of 7.00 (SD = 3.16), ranging from -1.94 to 11.24. The ESG disclosure score (ESG) has a mean of 3.20 (SD = 12.42), with values from 0 to 71, indicating substantial variation across the sample. Firm size (KEP) averages 8.58 (SD = 2.24), while leverage (LEV) averages 7.41 (SD = 2.07). Profitability (PROF) has a negative mean of -1.30 (SD = 0.73), and both firm age (AGE) and business risk (RISK) exhibit considerable ranges from their means of 3.05 (SD = 1.50) and -0.99 (SD = 0.71), respectively.

4.2. Model Selection Test

4.2.1. Chow Test

Table 3. Chow Test Results

sigma_u	.69362294	
sigma_e	2.0784361	
rho	.10021076	(fraction of variance due to u_i)

F test that all u_i=0: F(6, 391) = 6.38 Prob > F = 0.0000

Table 3 and the Chow test results suggest that the fixed effect model is preferable over the common effect model, as the probability value of 0.000 is lower than 0.05.

4.2.2. Hausman Test

Table 4. Hausman Test Results

Test: Ho: difference in coefficients not systematic	
chi2(5)	= (b-B)'[(V_b-V_B)^(-1)](b-B)
	= 2.84
Prob>chi2	= 0.7252

(V_b-V_B is not positive definite)

In Table 4, the Hausman test results indicated a probability value of 0.725, suggesting that the random effects model is more suitable than the fixed effects model since the probability value exceeds 0.05.

4.2.3. Lagrange Multiplier Test

Table 5. LM Test Results

	Var	**sd = sqrt(Var)**
tobins	9.968302	3.157262
e u	4.319896	2.078436
tobins	.3014317	.549028

Estimated results:
Test:
Var(u) = 0
chibar2(01) = 60.28
Prob > chibar2 = 0.0000

Based on the information presented in Table 5, the probability value was determined to be 0.000, suggesting that the random effects model outperforms the common effects model. The results of these analyses indicate that the random effects model is the most appropriate option.

4.2.4. Classical Assumption Tests

1) Normality Test

Table 6. Normality Test Results

Variable	**Shapiro-Wilk W test**				
	Obs	**W**	**V**	**z**	**Prob>z**
res	403	0.99685	0.872	-0.327	0.62819

The probability value from Table 6 for the normality test is 0.628, which is greater than 0.05, so it is concluded that the residual data is normally distributed.

2) Multicollinearity Test

Table 7. Multicollinearity Test

Variable	**VIF**	**1/VIF**
prof	3.32	0.301277
risk	3.02	0.331469
lev	1.27	0.790367
esg	1.06	0.942584
age	1.01	0.988943
Mean VIF	1.93	

Table 7 displays the results of the multicollinearity test, which revealed that the VIF values of the independent variables are each below 10. This suggests that there is no issue of multicollinearity among the independent variables.

3) Heteroscedasticity Test

Table 8. Heteroscedasticity Test

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of tobins	
chi2(1)	2.39
Prob > chi2	0.1223

The heteroscedasticity test in Table 8 indicates a probability value of 0.122, which is higher than 0.05. Thus, the conclusion is to accept H0, suggesting no heteroscedasticity in the residual data.

4) Autocorrelation Test

Durbin-Watson d-statistic (6,403) = .5092768

From the autocorrelation test results, a Durbin-Watson value of 0.509 was obtained, which is between -2 and +2; therefore, it is concluded that there is no autocorrelation in the residual data.

5) Panel Data Regression Model

According to Ghozali (2018), panel data is a regression technique that integrates time series data with cross-sectional data. Therefore, panel data has more comprehensive characteristics, covering various entities and specific time periods.

Table 9. Model Without Moderation

tobins	Coef.	Std. Err.	z	P>z	95% Conf.	Interval
esg	.0217977	.0086977	2.51	0.012	.0047505	.0388448
lev	.7918304	.057585	13.75	0.000	.6789658	.9046951
prof	-.3320541	.2619101	-1.27	0.205	-.8453885	.1812804
age	.0153772	.0700638	0.22	0.826	-.1219453	.1526998
risk	-1.193591	.2556227	-4.67	0.000	-1.694602	-.6925797
_cons	-.5953251	.5159788	-1.15	0.249	-1.606625	.4159747

$TOBINS = -0{,}595 + 0{,}021\ ESG + 0{,}791\ LEV - 0{,}332\ PROF + 0{,}015\ AGE - 1{,}193\ RISK$

It is noted from the data in Table 9 and the regression equation provided in the panel that there is a relationship between an increase in the ESG variable and a subsequent rise in the TOBINS variable of 0.021.

Table 10. Model With Moderation

tobins	Coef.	Std. Err.	z	P>z	95% Conf.	Interval
esg	.0299251	.2084266	0.14	0.886	-.3785835	.4384337
esg_kep	-.0009205	.0197424	-0.05	0.963	-.039615	.037774
kep	.4286206	.1747521	2.45	0.014	.0861128	.7711284
lev	.3726045	.181723	2.05	0.040	.0164339	.7287751
prof	-.2545937	.2751643	-0.93	0.355	-.7939057	.2847184
age	.0172913	.0720845	0.24	0.810	-.1239917	.1585743
risk	-1.162877	.2628916	-4.42	0.000	-1.678135	-.647619
_cons	-1.037744	.497576	-2.09	0.037	-2.012975	-.062513

$TOBINS = -1{,}037 + 0{,}029\ ESG - 0{,}0009\ ESG * KEP + 0{,}428\ KEP + 0{,}372\ LEV - 0{,}254\ PROF + 0{,}017\ AGE - 1{,}162\ RISK$

From Table 10 and the panel data regression equation above, it is concluded that an increase in the interaction variable ESG with KEP can influence a decrease in the TOBINS variable by 0.0009.

4.2.5. Hypothesis Testing

1) Simultaneous Test (F Test)

Table 11. Simultaneous Test Model Without Moderation

Random-effects GLS regression				Number of obs	403
Group variable: year				Number of groups	7
R-sq:	within	0.5305	Obs per group	Min	56

	between	0.6121		avg	57.6
	overall	0.5370		max	59
				Wald chi2(5)	451.34
corr(u_i, X)	= 0 (assumed)			Prob > chi2	0.0000

The significance value of the F test in Table 11 from this research is 0.000, indicating that the regression model is appropriate for this study as it is below the threshold of 0.05. This implies that the independent variables work together in this study.

Table 12. Simultaneous Test Model With Moderation

Random-effects GLS regression				Number of obs	403
Group variable: year				Number of groups	7
R-sq:	within	0.5356	Obs per group	Min	56
	between	0.6345		avg	57.6
	overall	0.5442		max	59
				Wald chi2(5)	451.52
corr(u_i, X)	= 0 (assumed)			Prob > chi2	0.0000

The F test results from Table 12 in the study reveal a significance value of 0.000, indicating that the regression model is suitable for this research. These findings suggest that the independent variables have a collective impact.

2) Coefficient of Determination Test (R^2 Test)

Table 13. Coefficient of Determination Model Without Moderation

Random-effects GLS regression				Number of obs	403
Group variable: year				Number of groups	7
R-sq:	within	0.5305	Obs per group	Min	56
	between	0.6121		avg	57.6
	overall	0.5370		max	59
				Wald chi2(5)	451.34
corr(u_i, X)	= 0 (assumed)			Prob > chi2	0.0000

Based on Table 13, it is known that the Adjusted R-squared (R^2) value is 0.612 or 61.2%. This means that 61.2% of the variation in TOBINS is influenced by ESG, LEV, PROF, AGE, and RISK. Meanwhile, the remaining 38.8% is influenced by other variables outside the regression model.

Table 14. Coefficient of Determination Model With Moderation

Random-effects GLS regression				Number of obs	403
Group variable: year				Number of groups	7
R-sq:	within	0.5356	Obs per group	Min	56
	between	0.6345		avg	57.6
	overall	0.5442		max	59
				Wald chi2(5)	471.52
corr(u_i, X)	= 0 (assumed)			Prob > chi2	0.0000

According to the information presented in Table 14, it can be determined that the Adjusted R-squared (R^2) value is 0.634, which equates to 63.4%. This indicates that ESG, in conjunction with KEP, KEP, LEV, PROF, AGE, and RISK, collectively contribute to 63.4% of the variation in TOBINS. On the other hand, the remaining 36.6% is impacted by factors not included in the regression model.

3) The Partial Test (t-test)

Table 15. t-test Model Without Moderation

tobins	Coef.	Std. Err.	z	P>z	95% Conf.	Interval
esg	.0217977	.0086977	2.51	0.012	.0047505	.0388448

lev	.7918304	.057585	13.75	0.000	.6789658	.9046951
prof	-.3320541	.2619101	-1.27	0.205	-.8453885	.1812804
age	.0153772	.0700638	0.22	0.826	-.1219453	.1526998
risk	-1.193591	.2556227	-4.67	0.000	-1.694602	-.6925797
_cons	-.5953251	.5159788	-1.15	0.249	-1.606625	.4159747

From Table 15 above, the following variable significance test results can be obtained:

a. Statistical analysis reveals that the ESG variable demonstrates a probability value of 0.012, falling below the critical threshold of 0.05. This finding establishes a statistically significant positive relationship between ESG and TOBINS at the 95% confidence interval, thereby providing empirical support for the acceptance of hypothesis H1.
b. The probability value of 0.012 for the ESG variable remains below the 0.10 significance threshold, substantiating a positive and statistically significant association with TOBINS at the 90% confidence level. Consequently, hypothesis H1 receives empirical validation and is accepted.

Table 16. t-test Model With Moderation

tobins	Coef.	Std. Err.	z	P>z	95% Conf.	Interval
esg	.0299251	.2084266	0.14	0.886	-.3785835	.4384337
esg_kep	-.0009205	.0197424	-0.05	0.963	-.039615	.037774
kep	.4286206	.1747521	2.45	0.014	.0861128	.7711284
lev	.3726045	.181723	2.05	0.040	.0164339	.7287751
prof	-.2545937	.2751643	-0.93	0.355	-.7939057	.2847184
age	.0172913	.0720845	0.24	0.810	-.1239917	.1585743
risk	-1.162877	.2628916	-4.42	0.000	-1.678135	-.647619
_cons	-1.037744	.497576	-2.09	0.037	-2.012975	-.062513

From table 16 above, the significance test results for the variables can be obtained as follows.

a. The interaction between ESG and KEP variables has a prob. value (p-value) of 0.963, which is greater than 0.05. This indicates that the KEP variable does not moderate the significant effect of ESG on TOBINS with a 95 percent confidence level. Therefore, the second hypothesis (H2) is rejected.
b. The interaction between ESG and KEP variables has a prob. value (p-value) of 0.963, which is greater than 0.05. This indicates that the KEP variable does not moderate the significant effect of ESG on TOBINS with a 95 percent confidence level. Therefore, the second hypothesis (H2) is rejected.
c. The interaction between ESG and KEP variables has a prob. value (p-value) of 0.963, which is greater than 0.10. This indicates that the KEP variable does not moderate the significant effect of ESG on TOBINS with a 90 percent confidence level. Therefore, the second hypothesis (H2) is rejected.

5. CONCLUSIONS

This study provides evidence that robust ESG practices significantly increase firm value (Tobin's Q). ESG performance thus serves as a key non-financial metric that reflects a firm's sustainable commitment and is directly linked to its market valuation. Tobin's Q itself is used as a ratio to assess market value relative to the firm's asset value, thus serving as a benchmark for whether the firm is undervalued or overvalued by the market. The results also show that government ownership (KEP) does not act as a moderating variable in the relationship between ESG and Tobin's Q. In other words, the presence of government ownership does not strengthen or weaken the effect of ESG on the firm's market value.Based on these conclusions, several suggestions can be offered. For institutions, the results of this study are expected to be a source of information that increasing Tobin's Q can be achieved by paying attention to various factors, including ESG, government ownership (KEP), leverage (LEV), profitability (PROF), firm age (AGE), and risk (RISK), as these factors contribute to firm value. Meanwhile, for future researchers, it is suggested to develop this research by adding mediating or moderating variables so that the results obtained are more comprehensive and able to provide a deeper explanation regarding the relationship between ESG and firm performance.

6. REFERENCES

Aboud, A., & Diab, A. (2018). The impact of social, environmental and corporate governance disclosures on firm value. *Journal of Accounting in Emerging Economies*, *8*(4), 442–458. https://doi.org/10.1108/JAEE-08-2017-0079

Angela, J., Jessica, M., Rinaningsih, R., & Haryono, L. (2019). Pengaruh Kepemilikan Pemerintah terhadap Kinerja Perusahaan Badan Usaha Milik Negara yang Terdaftar di BEI. *Studi Akuntansi Dan Keuangan Indonesia*, *2*(2), 203–223. https://doi.org/10.21632/saki.2.2.203-223

Arifah, E., & Wirajaya, I. G. A. (2018). Pengaruh Pengungkapan Enterprise Risk Management Terhadap Nilai Perusahaan Dengan Ukuran Perusahaan, Leverage, dan Profitabilitas Sebagai Variabel Kontrol. *E-Jurnal Akuntansi*, 1607. https://doi.org/10.24843/EJA.2018.v25.i02.p30

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. *The British Accounting Review*, *50*(1), 1–15. https://doi.org/10.1016/j.bar.2017.11.005

Deegan, C. (2002). The legitimising effect of social and environmental disclosures – a theoretical foundation. *Accounting, Auditing & Accountability Journal*, *15*(3), 282–311. https://doi.org/10.1108/09513570210435852

Fatemi, A., Glaum, M., & Kaiser, S. (2018). ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal*, *38*, 45–64. https://doi.org/10.1016/j.gfj.2017.03.001

Febriyani, N., & Srimindarti, C. (2010). Faktor-Faktor Yang Mempengaruhi Struktur Modal Pada Perusahaan-perusahaan LQ-45 Di Bursa Efek Indonesia Periode 2006-2008. *Dinamika Keuangan Dan Perbankan*, *2*(2), 138–159.

Fernando, S., & Lawrence, S. (2014). A theoretical framework for CSR practices: Integrating legitimacy theory, stakeholder theory and institutional theory. *Journal of Theoretical Accounting Research*, *10*, 149–178.

Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Cambridge university press.

Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, *5*(4), 210–233. https://doi.org/10.1080/20430795.2015.1118917

Ghozali, I. (2018). *Aplikasi analisis multivariate dengan program IBM SPSS 25*. Universitas Diponegoro.

Hadi. (2018). Pengaruh ukuran perusahaan, profitabilitas, umur perusahaan, komisaris independen dan kinerja lingkungan terhadap pengungkapan Islamic Social Reporting pada perusahaan saham syariah di Indonesia. *Jurnal Ekonomi Dan Bisnis*.

Hannigan, T. R., Haans, R. F. J., Vakili, K., Tchalian, H., Glaser, V. L., Wang, M. S., Kaplan, S., & Jennings, P. D. (2019). Topic Modeling in Management Research: Rendering New Theory from Textual Data. *Academy of Management Annals*, *13*(2), 586–632. https://doi.org/10.5465/annals.2017.0099

Hery. (2019). *Manajemen pemasaran*. Gramedia Widiasarana Indonesia.

Indrarini, S. (2019). *Nilai perusahaan melalui kualitas laba:(Good Governance dan Kebijakan Perusahaan)*. Scopindo Media Pustaka.

Li, Y., Gong, M., Zhang, X.-Y., & Koh, L. (2018). The impact of environmental, social, and governance disclosure on firm value: The role of CEO power. *The British Accounting Review*, *50*(1), 60–75. https://doi.org/10.1016/j.bar.2017.09.007

Li, Z., Liao, G., & Albitar, K. (2020). Does corporate environmental responsibility engagement affect firm value? The mediating role of corporate innovation. *Business Strategy and the Environment*, *29*(3), 1045–1055. https://doi.org/10.1002/bse.2416

Liao, L., Lin, T., & Zhang, Y. (2018). Corporate Board and Corporate Social Responsibility Assurance: Evidence from China. *Journal of Business Ethics*, *150*(1), 211–225. https://doi.org/10.1007/s10551-016-3176-9

Mahfuzhah, A. H. (2022). *Pengaruh Environmental Social Governance (ESG) Disclosure Terhadap Nilai Perusahaan (Pada Perusahaan Yang Terdaftar Di IDX ESG Leaders Tahun 2016-2020: Sebelum Dan Semasa Pandemi Covid-*

19). STIE Indonesia Banking School.

Melinda, A., & Wardhani, R. (2020). The Effect of Environmental, Social, Governance, and Controversies on Firms' Value: Evidence from Asia. In *International Symposia in Economic Theory and Econometrics* (pp. 147–173). https://doi.org/10.1108/S1571-038620200000027011

Minggu, A. M., Aboladaka, J., & Neonufa, G. F. (2023). Environmental, Social dan Governance (ESG) dan Kinerja Keuangan Perusahaan Publik di Indonesia. *Owner*, *7*(2), 1186–1195. https://doi.org/10.33395/owner.v7i2.1371

Muharramah, R., & Hakim, M. Z. (2021). Pengaruh Ukuran Perusahaan, Leverage, Dan Profitabilitas Terhadap Nilai Perusahaan. *Prosiding Seminar Nasional Ekonomi Dan Bisnis*, 569–576. https://doi.org/10.32528/psneb.v0i0.5210

Noviarianti, K. (2020). *ESG: Definisi, Contoh, dan Hubungannya dengan Perusahaan*. CESGS.

Pratomo, D., & Sudibyo, D. A. (2023). Do Earnings Management and Audit Committee Have an Effect on the Firm Value? *AKRUAL: Jurnal Akuntansi*, *14*(2), 234–247. https://doi.org/10.26740/jaj.v14n2.p234-247

Puspitaningrum, H. Y., & Indriani, A. (2021). Pengaruh Tanggung Jawab Sosial Perusahaan dan Good Corporate Governance terhadap Profitabilitas Perusahaan dengan Ukuran Perusahaan dan Leverage sebagai Variabel Kontrol (Pada Sektor Perusahaan Consumer Goods Industry yang Terdaftar di Bursa Efek Indonesi. *Diponegoro Journal of Management*, *10*(4). https://ejournal3.undip.ac.id/index.php/djom/article/view/32373

Putri, C. M., & Puspawati, D. (2023). The effect of ESG disclosure, company size, and leverage on company's financial performance in Indonesia. *The International Journal of Business Management and Technology*, *7*(2), 252–262.

Putri, S. S. P., & Wahyuningsih, E. M. (2021). Firm size, laverage, profitabilitas, likuiditas, kebijakan deviden terhadap nilai perusahaan. *AKUNTABEL: Jurnal Ekonomi Dan Keuangan*, *18*(1), 41–50.

Revita, R. (2020). Pengaruh Environmental, social and Governance (ESG) disclosure terhadap nilai perusahaan. *Jurnal Ekonomi Dan Bisnis*, *47*.

Safriani, M. N., & Utomo, D. C. (2020). Pengaruh Environmental, Social, Governance (ESG) Disclosure terhadap Kinerja Perusahaan. *Diponegoro Journal of Accounting*, *9*(3). https://ejournal3.undip.ac.id/index.php/accounting/article/view/29093

Sihombing, E. L. R., & Akbar, F. S. (2022). Pengaruh Kepemilikan Pemerintah, Strategi Bisnis, dan Good Corporate Governance terhadap Kinerja Perusahaan. *Jambura : Economic Education Journal*, *4*(1), 97–105. https://doi.org/10.37479/jeej.v4i1.11307

Sutama, D., & Lisa, E. (2018). Pengaruh leverage dan profitabilitas terhadap nilai perusahaan. *JSMA (Jurnal Sains Manajemen Dan Akuntansi)*, *10*(1), 21–39.

Toti, G. K., & Johan, S. (2022). The effect of enviromental, social, governance (ESG) disclosure on company's profitability & value in the Sri-Kehati Index 2015-2020. *Journal of Entrepreneurship, Management and Industry (JEMI)*, *5*(2), 81–92.

Wijaya, A. L. (2020). Profitability, audit quality, and firm value: Case on Indonesian manufacturing companies. *Contabilidad y Negocios*, *15*(30), 43–61.

Wu, S., Li, X., Du, X., & Li, Z. (2022). The Impact of ESG Performance on Firm Value: The Moderating Role of Ownership Structure. *Sustainability*, *14*(21), 14507. https://doi.org/10.3390/su142114507

Yu, E. P., Guo, C. Q., & Luu, B. Van. (2018). Environmental, social and governance transparency and firm value. *Business Strategy and the Environment*, *27*(7), 987–1004. https://doi.org/10.1002/bse.2047