



The Effect of Environmental, Social, and Governance (ESG) Disclosures on Firm Value Measured by Tobin's Q: Evidence from Hospital and Pharmaceutical Sectors in Indonesia (2021–2024)

***Yanuar Ramadhan¹**

Universitas Esa Unggul, Indonesia

Ferry Hendro Basuki²

Universitas Pembangunan
Nasional Veteran Jawa Timur,
Indonesia

***Corresponding author:**

Yanuar Ramadhan, Universitas Esa Unggul,
Indonesia,

✉ yanuar.ramadhan@esaunggul.ac.id

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Abstract

Background: ESG disclosure has become increasingly important, particularly in Indonesia's healthcare sector, where hospitals and pharmaceutical companies must balance profit with environmental and social accountability amid growing regulatory and stakeholder demands.

Objective: This study explores the link between ESG integration and healthcare company valuation, assessing firm value through Tobin's Q, which compares a business's market price to its recorded assets.

Methods: Using EViews for analysis, this quantitative study applied multiple linear regression to evaluate how ESG factors influenced firm value between 2021 and 2024, drawing from public annual and sustainability reports.

Results: The study indicates that a company's value is partially driven by its social and environmental performance. Effective green practices and community engagement tend to foster more favorable perceptions from the investment community. However, since governance does not significantly affect valuation, investors appear to focus more on how firms treat the environment and society rather than on specific administrative or board-level policies.

Conclusion: Findings from this study support legitimacy theory, suggesting that healthcare businesses prioritize building trust with communities and investors to align with social expectations. This strategic alignment enhances market standing and results in higher corporate valuation.

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INTRODUCTION

Global ESG investment assets surpassed USD 40 trillion in 2022, with over 90% of S&P 500 companies publishing sustainability reports. This trajectory reflects a fundamental shift in investor priorities, where sustainability has become central as firms are expected to balance profits with environmental, social, and governance accountability. Strong ESG performance signals lower risk and long-term stability, making these companies more attractive to investors seeking sustainable value. Pressure from various stakeholders, including investors, the public, and the government, is forcing companies to become more transparent in their sustainability practices. Increasingly stringent regulations are also driving companies to report their ESG performance in a clearer and more measurable manner Xaviera (2023), particularly in the healthcare sector. In the wake of the COVID-19 pandemic, the healthcare sector has come under intense scrutiny due to its vital role, leading the public to demand that companies not only focus on profits but also take responsibility for the environmental and social impacts they generate, which are then reported through ESG. On the other hand, although ESG reporting practices are increasingly widespread, particularly in Indonesia, scientific studies examining their relationship

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with corporate value in the healthcare sector remain limited, necessitating further research to provide robust empirical evidence (Huang et al., 2024; Espinosa-Méndez et al., 2023).

In Indonesia, healthcare waste generation increased by an estimated 30% during the pandemic period (2020–2022), and worker safety incidents in hospitals remain underreported, underscoring the urgent need for robust ESG governance frameworks in this sector. Legitimacy Theory serves as the theoretical framework, explaining that companies cannot operate in isolation from their social environment; therefore, they must maintain positive relationships with society to remain accepted and trusted (Sari & Murwaningsari, 2023). One way to achieve this is by implementing sustainability practices such as environmental protection, social welfare enhancement, and good governance, which are then disclosed through ESG reporting. By demonstrating that corporate activities align with prevailing societal values and norms, firms can obtain legitimacy or social approval. This legitimacy is important because it can enhance public and investor trust, reduce potential social conflict, and support long-term sustainability and corporate success.

Following Stakeholder Theory, addressing broader stakeholder interests improves performance and minimizes conflict (Dian Pramitya Khairunnisa & Wahidahwati, 2023; Sari & Murwaningsari, 2023; Zhang, 2025). Meanwhile, Signaling Theory suggests that ESG disclosures serve as positive signals of strong governance quality and risk awareness to investors (Spence, 1978). Beyond profit considerations, modern firms must address their broader societal and environmental impacts to demonstrate responsibility and quality (AP & Amin, 2024; Ayem et al., 2025; Bo & Li, 2025). In Indonesia, Government Regulation No. 51/POJK.03/2017 enforces ESG reporting to strengthen corporate accountability and promote long-term sustainable operations.

The healthcare sector, including hospitals and pharmaceutical companies, plays a crucial role in sustainable development. As institutions that directly affect human life, these entities are not only required to provide high-quality medical services but also to operate in an environmentally responsible manner, ensure social equity, and implement sound governance practices. ESG disclosures in this sector include issues such as medical waste management, equitable access to healthcare services for underserved communities, employee safety, and transparency and integrity in management practices. However, despite increasing expectations regarding ESG practices, there is still limited research specifically examining how ESG disclosures affect firm value Submitter (2020) in Indonesia's healthcare sector. Most previous studies have focused on banking, manufacturing, or energy sectors, while the healthcare sector presents unique characteristics and risks.

To address inconsistencies in prior findings, this study analyzes the relationship between ESG transparency and firm value within the Indonesian pharmaceutical and hospital sectors. The objective is to identify whether environmental, social, or governance factors most strongly influence firms' financial performance and investor valuation.

This study aims to examine the effect of Environmental, Social, and Governance (ESG) disclosures on firm value measured by Tobin's Q among Indonesian listed hospital and pharmaceutical companies during 2021–2024. Focusing on the 2021–2024 period, this research investigates how ESG factors determine firm value in Indonesia's healthcare industry. It utilizes multiple linear regression to analyze pharmaceutical and hospital sector data, applying Tobin's Q and GRI standards to identify which ESG dimensions most effectively drive market valuation and how disclosure trends have evolved (Qodary et al., 2024). Research on ESG disclosures has been widely conducted globally. Khan (2016) found that firms excelling in material sustainability issues generally achieve better stock performance. In Indonesia, ESG research has predominantly focused on financial and manufacturing sectors (Sari & Maryama, 2024). Fatemi (2018) stated that positive ESG attributes enhance company value, while negative ones reduce it. High ESG ratings are also associated with superior financial performance and market value (Aydoğmuş et al., 2022). Similarly, Wu (2022) and Seok (2024) found that ESG practices enhance company value through improved customer satisfaction. Overall findings suggest that ESG is a key driver of corporate success Tamasiga (2024), with Postiglione (2024) examining the role of capital costs and Duan (2023) highlighting the favorable relationship between ESG and firm value. However, some scholars such as Rohendi (2024) found no significant relationship between ESG disclosures and firm financial value. Singh (2024) even argued that emphasizing non-material ESG aspects can reduce firm value. Similarly, Mandasari (2025) found that ESG factors may exert a strong

negative effect on market valuation. Mikołajek (2024) explained that the effects remain inconsistent, and some ESG components (such as social or environmental dimensions) are often inconclusive or insignificant in relation to Tobin's Q.

These mixed results indicate a lack of consensus in the existing literature, highlighting the need for further research. This study addresses this gap by examining how ESG disclosures impact firm value in Indonesia's healthcare sector. This focus is justified by the sector's significant social impact and its specific ESG risks, ranging from medical waste management and healthcare worker protection to the need for high-level governance accountability.

This study presents three main contributions: (1) it is among the first to comprehensively examine the effect of ESG disclosure on firm value in Indonesia's hospital and pharmaceutical sectors using a four-year post-pandemic dataset (2021–2024); (2) it applies a dimensional approach by separately analyzing environmental, social, and governance pillars to identify which dimension most strongly drives market valuation; and (3) by employing the Random Effects Model with GRI-based ESG scoring, this study provides sector-specific empirical evidence that enriches the limited literature on ESG in Indonesia's healthcare industry.

METHOD

This study employed an explanatory quantitative causal research design. Using secondary data from 2021–2024, the quantitative analysis evaluated the relationship between ESG components and healthcare firm value through multiple linear regression. The research population consisted of all 34 healthcare companies (hospitals and pharmaceutical firms) listed on the Indonesia Stock Exchange (IDX) during 2021–2024. Purposive sampling was used to select pharmaceutical and hospital firms with regular disclosures, ensuring an accurate assessment of how transparency drives market value. The inclusion criteria were: (1) listed on the IDX for the full 2021–2024 period; (2) published annual and/or sustainability reports; and (3) disclosed ESG information in accordance with GRI standards. This resulted in 23 companies with 92 annual observations (unbalanced panel), which were reduced to 90 in the final regression due to two missing data points.

This study employed panel data regression to combine cross-sectional and time-series data for a comprehensive analysis. The Chow and Hausman tests were used to select the most appropriate model among the fixed effects, random effects, and pooled/general effects models, while classical assumption tests for normality and multicollinearity were conducted to ensure reliable and unbiased results.

This study aimed to produce several key outputs: an empirical framework showing the impact of ESG disclosures on healthcare sector valuation and a clear identification of whether the environmental, social, or governance pillar is the most significant driver of value. Ultimately, the study resulted in a scholarly article that provides valuable insights for policymakers, hospital administrators, and investors alike.

RESULTS AND DISCUSSION

Results

Descriptive statistics for ESG components and the Tobin's Q ratio, which represents company value, are detailed in this table.

Table 1. Descriptive Statistics

	Environmental	Social	Governance	Tobins'Q
<i>Mean</i>	12,98	16,48	3,11	1276,27
<i>Median</i>	12,50	16,00	3,00	5,89
<i>Maximum</i>	31,00	36,00	9,00	15450,53
<i>Minimum</i>	0,00	0,00	0,00	-4,18
<i>Std. Dev.</i>	8,43	9,36	2,63	2261,75
<i>Skewness</i>	0,01	0,26	0,78	3,28
<i>Kurtosis</i>	1,94	2,01	2,83	18,55
<i>Jarque-Bera</i>	4,29	4,82	9,32	1091,97
<i>Probability</i>	0,12	0,09	0,01	0,00

<i>Sum</i>	1.194,00	1.516,00	286,00	11.7416,60
<i>Observations</i>	92	92	92	92

Analysis of 92 samples reveals that social disclosures are the most prominent, averaging 16.48 with a maximum of 36.00. Environmental and governance dimensions show lower averages of 12.98 and 3.11, respectively, with significant policy variations reflected in the social variable's high standard deviation.

The Tobin's q metric for firm value exhibits a high degree of fluctuation, averaging 1276.27 across the 92 observations. This figure is influenced by a vast spread, with values starting at -4.18 and peaking at 15,450.53. With a standard deviation of 2261.75 exceeding the mean, the data suggests that there is a substantial disparity in market value among the different companies included in the research. This investigation utilizes a panel data regression approach in EViews 9.0, combining data across different subjects and time periods. To guarantee that the regression model remains unbiased, the study first carried out classical assumption testing as a preliminary step.

Classical Assumption Tests. To ensure model accuracy, this research performed normality, heteroskedasticity, autocorrelation, and multicollinearity tests.

Normality Test. Normality is assessed via the Jarque-Bera test to ensure the data lacks extreme deviations from the mean. The results for this panel data analysis are listed below.

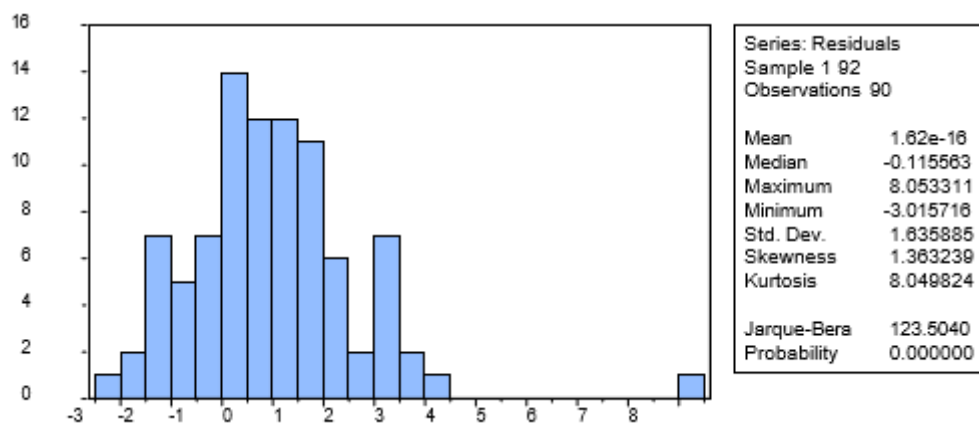


Figure 1. Jarque-Bera Normality Test

Data is normally distributed if the Jarque-Bera probability exceeds 0.05. Since this test yielded a value of 0.000, which is below the threshold, the regression model is not normally distributed.

However, this condition is common in panel data analysis because panel data have characteristics in which observations may vary considerably across companies (cross-sections) and across different time periods (time series). These differences may arise due to various aspects that vary significantly between firms and across years. Because the sample size is larger than 30, the central limit theorem supports these results by assuming the sampling distribution of the mean is approximately normal.

Autocorrelation Test. Autocorrelation occurs when residuals in a regression are correlated with one another. This study uses the Durbin-Watson test to detect such violations by evaluating the calculated dw value against critical dL and dU bounds.

The Durbin-Watson criteria state that autocorrelation exists if dw is below dL or above $4 - dL$, while no autocorrelation exists if it falls between dU and $4 - dU$. For this study ($n = 92$, $k = 3$, $\alpha = 0.05$), dL is 1.5941 and dU is 1.7285. The test results are shown in the table:

Table 2. Autocorrelation Test Results

R-squared	0.166880	Mean dependent var	1.62E-16
Adjusted R-squared	0.117289	S.D. dependent var	1.635885
S.E. of regression	1.536958	Akaike info criterion	3.761828
Sum squared resid	198.4282	Schwarz criterion	3.928482

Log likelihood	-163.2823	Hannan-Quinn criter.	3.829033
F-statistic	3.365153	Durbin-Watson stat	1.848501
Prob(F-statistic)	0.008069		

Because the calculated dw value (1.8485) is greater than dU and less than $4 - dU$, it is concluded that the autocorrelation assumption has not been violated.

Heteroskedasticity Test. This test determines if residual variance stays consistent (homoskedasticity) or changes across observations (heteroskedasticity). The evIEWS output for this assessment is as follows.

Table 3. Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.729265	Prob. F(3,86)	0.5373
Obs*R-squared	2.232752	Prob. Chi-Square(3)	0.5255
Scaled explained SS	7.186223	Prob. Chi-Square(3)	0.0662

The model avoids heteroskedasticity problems because its obs*r-squared probability (0.5255) is greater than 0.05, confirming that the residuals have constant variance. Multicollinearity Test. To check for strong relationships between independent variables, a multicollinearity test was run in EVIEWS, yielding the results below:

Table 4. Multicollinearity Test

Variance Inflation Factors			
Sample: 1 92			
Included observations: 90			
Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.140592	4.568845	NA
X1	0.001426	11.30807	3.154195
X2	0.001824	21.70361	4.949357
X3	0.012125	6.641485	2.690305

Variables with a VIF greater than 10 indicate multicollinearity problems. In this case, all predictors scored under 10, confirming the model is free from such issues.

Regression Model Selection Test. To find the best fit among common, fixed, and random effect models, the researchers applied chow and Hausman tests to the panel data.

Chow Test. The chow test, or f-statistic test, determines whether the pooled least squares or fixed effect model is better. It tests the null hypothesis (pooled least squares) against the alternative (fixed effect). Results are shown in the table:

Table 5. Chow Test Result

Redundant Fixed Effects Tests			
Equation: Untitled			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	16.094791	(22,64)	0.0000
Cross-section Chi-square	168.912236	22	0.0000

The 0.0000 chi-square probability confirms the fixed effect model is appropriate. To further refine the estimation, a Hausman test is performed to choose between the fixed effect and random effect methods.

Hausman Test. To decide between random and fixed effect models, the Hausman test was applied. Results from the evIEWS 9.0 analysis are as follows:

Table 6. Hausman Test Results

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.011716	3	0.2092

The Hausman test yielded a chi-square probability of 0.2901. As this exceeds 0.05, the random effect model is selected as the most suitable method for this panel data regression.

Lagrange Multiplier Test. To choose between a random effect or common effect approach, the lm test was applied. The following results were generated using EViews 9.0:

Table 7. Lagrange Multiplier Test Results

Lagrange Multiplier Tests for Random Effects			
Null hypotheses: No effects			
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives			
	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	39.61421 (0.0000)	0.486355 (0.4856)	40.10056 (0.0000)
Honda	6.293982 (0.0000)	-0.697391 --	3.957387 (0.0000)
Gourierieux, et al.*	--	--	39.61421 (< 0.01)
*Mixed chi-square asymptotic critical values:			
1%	7.289		
5%	4.321		
10%	2.952		

All tests in the Lagrange multiplier estimation returned probabilities of 0.0000. With these results falling below 0.05, it is concluded that the random effect model should be utilized.

Panel Data Regression Analysis Using the Random Effect Model (REM). The following random effect model equation is used to measure the effects of environmental (x1), social (x2), and governance (x3) factors on overall firm value (y):

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + \varepsilon$$

The variables in this research model can be described as follows: the dependent variable (Y) represents firm value. The constant in the model is denoted by b_0 , while the regression coefficients for each independent variable are denoted by b_1 through b_3 . The independent variables consist of X_1 , which describes environmental aspects; X_2 , which represents social aspects; and X_3 , which reflects governance aspects. Meanwhile, ε denotes the error component, i.e., other factors outside the model that may influence firm value but are not included in the analysis.

The results of the multiple regression analysis processed using EViews 9.0 are presented in the following table:

Table 8. Panel Data Regression Analysis Results

Dependent Variable: LNY
Method: Panel EGLS (Cross-section random effects)
Sample: 2021 2024
Periods included: 4
Cross-sections included: 23
Total panel (unbalanced) observations: 90

Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.368665	0.433238	0.850952	0.3972
Environmental	0.069070	0.021075	3.277358	0.0015
Social	0.135710	0.024158	5.617471	0.0000
Governance	0.089010	0.062893	1.415248	0.1606
Effects Specification				
			S.D.	Rho
Cross-section random			1.341333	0.7595
Idiosyncratic random			0.754771	0.2405
Weighted Statistics				
R-squared	0.526253	Mean dependent var		1.054943
Adjusted R-squared	0.509727	S.D. dependent var		1.235727
S.E. of regression	0.865114	Sum squared resid		64.36434
F-statistic	31.84383	Durbin-Watson stat		1.538756
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.667883	Mean dependent var		3.867284
Sum squared resid	354.8878	Durbin-Watson stat		0.279077

Based on the table above, the panel data regression equation can be formulated as follows:

$$Y = 0.369 + 0.069X_1 + 0.136X_2 + 0.089X_3$$

The constant ($b_0 = 0.369$) shows the predicted firm value when all ESG disclosures are zero. This positive figure suggests that companies maintain a baseline intrinsic market value regardless of their ESG reporting.

The environmental coefficient (0.069) shows a positive link between green disclosures and firm value. Each unit increase in environmental reporting boosts firm value by 0.069. This implies that managing issues like emissions improves reputation and investor trust, raising market value.

Social Coefficient ($b_2 = 0.136$). The Social variable shows the most dominant effect among the variables, with a positive coefficient of 0.136. This implies that a one-unit increase in social disclosure results in a significant 0.136-unit increase in firm value. The high coefficient reflects the strong appreciation from investors for transparency regarding labor relations, community empowerment, and other social aspects. Social disclosure is viewed as a tangible form of corporate responsibility that mitigates social risk and strengthens business legitimacy in the public eye.

Governance Coefficient ($b_3 = 0.089$). The Governance variable has a positive coefficient of 0.089, indicating that improvements in governance and managerial transparency contribute positively to firm value by 0.089 units per one-unit increase in disclosure. Although the coefficient is smaller than that of Social, it confirms that strong governance structures serve as a positive signal to shareholders. By disclosing robust governance mechanisms, companies assure investors that operations are conducted professionally and accountably, ultimately optimizing firm value over time.

Simultaneous Hypothesis Testing (F-Test)

The study used an f-statistic of 31.844 to test the joint effect of ESG variables. Because this value is high, it demonstrates that environmental, social, and governance disclosures together significantly explain fluctuations in firm value.

The model's f-statistic probability of 0.000 confirms its statistical significance. Because this is well under the 0.05 threshold, environmental, social, and governance variables collectively impact firm value, proving the random effect model is a reliable predictive tool.

Using the data from the table, the results for the partial hypothesis t-tests are shown below, with all figures rounded to three decimal places:

Effect of Environmental Disclosure (X_1) on Firm Value

Environmental disclosure has a 0.069 coefficient and a 3.277 t-statistic. Its 0.002 probability is below the 0.05 limit, confirming a significant positive effect on firm value. This

suggests investors reward transparency, viewing environmental reporting as a signal that increases market value.

Social Disclosure (X_2) Effect on Firm Value

Social disclosure has the strongest impact, with a 0.136 coefficient and a 5.617 t-statistic. The 0.000 probability confirms its high significance. This suggests that reporting on labor and community relations is a priority for stakeholders, directly boosting investor confidence and market value.

Governance Disclosure (X_3) Effect on Firm Value

Governance disclosure has a coefficient of 0.089 and a t-statistic of 1.415. With a probability of 0.161, which exceeds the 0.05 threshold, the effect on firm value is not statistically significant. This suggests investors may view governance reporting as a standard requirement rather than a market driver.

Coefficient of Determination (R^2)

The adjusted r-squared value of 0.510 shows that environmental, social, and governance disclosures explain 51.0% of the changes in firm value. Since this exceeds 50%, the model is considered reasonably accurate, with the remaining 49.0% influenced by external factors.

Discussion

Effect of Environmental Disclosure on Firm Value

Environmental variables (X_1) show a positive, significant effect on firm value (0.069, $p < 0.05$). Consequently, companies that report transparently on carbon reduction and energy savings tend to experience improved market performance. Conceptually, this finding can be explained through signaling theory, where environmental information disclosure serves as an indicator of a company's commitment to sustainable business practices. Investors today are increasingly sensitive to environmental issues because they relate to long-term risks such as regulatory changes, public pressure, and potential costs resulting from environmental violations. Therefore, companies that consistently and transparently report their environmental performance are perceived as more credible, better at risk management, and more sustainability-oriented.

Additionally, environmental disclosure contributes to building a company's reputation in the eyes of the public and other stakeholders. This positive reputation can boost investor confidence, expand access to funding sources, and attract investors focused on sustainable investment principles. In the long term, these conditions can drive stock price appreciation, which is then reflected in increased corporate value, including through indicators such as Tobin's Q. This finding is consistent with Aydogmus (2022), who found that environmental performance positively affects both firm value and profitability on Borsa Istanbul, and with Fatemi (2018), who reported that positive ESG attributes enhance company value. In the Indonesian context, this aligns with Sari (2023), who found that ESG disclosure and green investment positively affect corporate performance.

Effect of Social Disclosure on Firm Value

Social disclosure (X_2) is the most influential factor, with a 0.136 coefficient and a 0.000 significance level. Higher transparency in labor relations and community welfare directly drives significant growth in market value. The dominance of the social variable's influence reflects the importance of corporate legitimacy in the eyes of the public and stakeholders. Companies that demonstrate tangible social responsibility are perceived as more accountable and sustainable. For investors, social disclosure serves as an indicator that a company possesses the ability to manage potential social conflicts, maintain operational stability, and create a conducive business environment.

Additionally, transparency in social activities plays a role in building a positive image and strengthening long-term relationships with customers, employees, and the community. The trust formed through these relationships can enhance loyalty, expand stakeholder support, and attract investors who prioritize sustainability. Overall, these factors collectively contribute to sustainable growth in corporate value. This finding aligns with Wu (2022), who found that ESG practices enhance firm value through improved customer satisfaction, and with Tamasiga (2024), who demonstrated that social ESG components play a particularly dominant role in enhancing firm performance. Conversely, the result contrasts with Singh (2024) and Mandasari (2025), who

found negative effects of ESG on firm value, suggesting that the positive social effect may be sector-specific and more pronounced in healthcare due to high public accountability expectations.

Effect of Governance (Economic/Corporate Governance) Disclosure on Firm Value

Unlike other factors, governance disclosure (X3) has a 0.089 coefficient and a 0.161 significance level. Because this exceeds 0.05, it does not significantly affect firm value. The data suggest that transparency regarding board structure and ethics is not a primary driver of Tobin's Q.

This may occur because investors perceive sound corporate governance (good corporate governance) as a normative obligation and a minimum standard required of all publicly listed companies. Therefore, merely disclosing governance information in annual reports is no longer regarded as a value-added signal capable of eliciting strong market reactions. Investor attention appears to be more focused on the actual implementation and tangible outcomes of environmental and social policies, whereas governance is viewed as a routine administrative foundation.

Development of Firm Value in healthcare sector companies

Tobin's Q shows extreme volatility with an average of 1,276.27 and a range from -4.18 to 15,450.53. The standard deviation of 2,261.75 far exceeds the mean, indicating high data dispersion and a significant market value gap among the companies. The extreme range in Tobin's Q (from -4.18 to 15,450.53) suggests the presence of potential outliers, particularly among pharmaceutical companies with very high market capitalizations relative to their recorded assets. Log transformation ($\ln Y$) was applied to the dependent variable prior to regression to address non-normality, as confirmed by the regression output showing LNY as the dependent variable in Table 8. The slight reduction from 92 to 90 observations in the final regression reflects the exclusion of two missing data points, and the random effect model results remain robust, as evidenced by the F-statistic probability of 0.000.

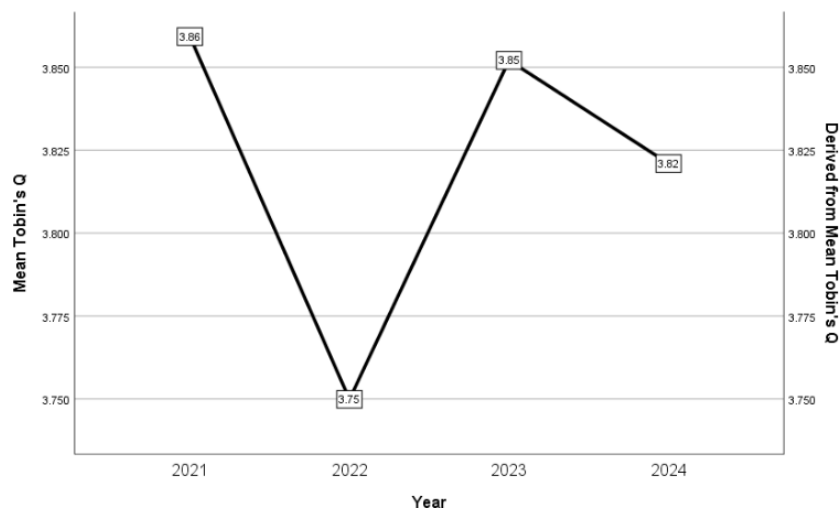


Figure 2. Development of Firm Value (Natural Logarithm of Tobin's Q) in the Hospital and Pharmaceutical Sector

The graph of firm value measured using the natural logarithm-transformed Tobin's Q shows relatively high volatility, reflecting the market's response to various internal and external corporate factors. Firm value declined from 3.86 in 2021 to its lowest point of 3.75 in 2022. However, the market showed renewed optimism in 2023, with the value increasing to 3.85 before experiencing a slight correction to 3.82 in 2024. Overall, the stability of firm value around 3.8 indicates that the market continues to assign a relatively strong valuation to the hospital and pharmaceutical sectors, where environmental, social, and governance disclosures remain key driving factors in maintaining long-term investor confidence.

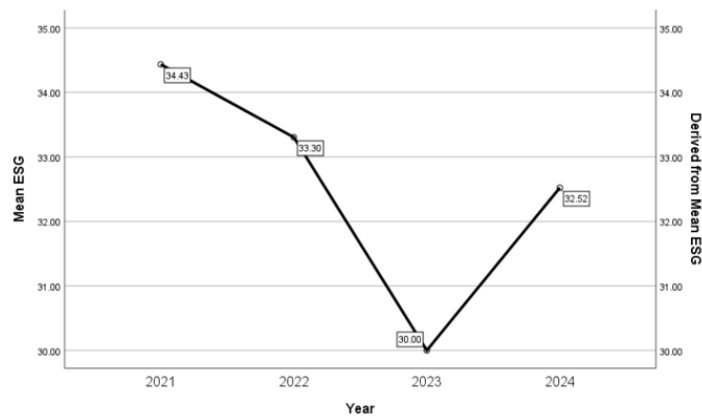


Figure 3. Development of Total ESG in the Hospital and Pharmaceutical Sector

The trend of the total ESG score in the hospital and pharmaceutical sectors shows a fluctuating pattern with an overall downward tendency during the 2021–2024 period. Starting from the highest value of 34.43 in 2021, the average level of ESG disclosure experienced a fairly consistent decline, reaching its lowest point at 30.00 in 2023. Although there was an improvement in 2024, when the score increased to 32.52, this level still did not fully match the disclosure level observed at the beginning of the study period. These fluctuations reflect the adaptive dynamics of companies in the healthcare sector in integrating sustainability standards amid changing post-pandemic operational conditions. During this period, corporate priorities may have temporarily shifted from comprehensive reporting toward internal operational stabilization before gradually demonstrating a renewed commitment to improving ESG disclosures in the final year.

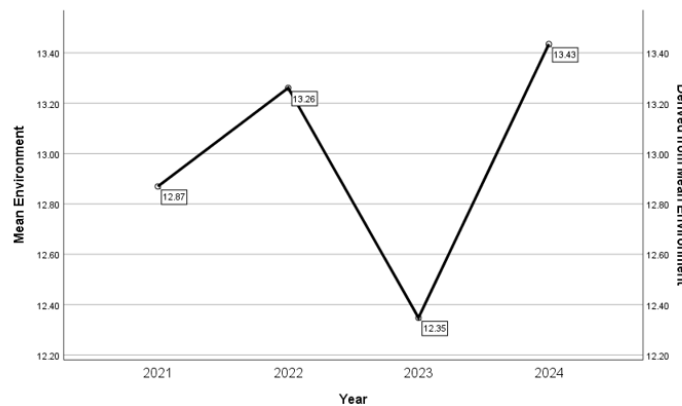


Figure 4. Development of the Environmental Aspect in the Hospital and Pharmaceutical Sector

In the environmental aspect, the data trend shows a relatively sharp “M-shaped” pattern, indicating that companies appear to struggle to maintain consistency in reporting environmental issues. After experiencing an increase from 12.87 in 2021 to 13.26 in 2022, the environmental disclosure score declined sharply to 12.35 in 2023, representing the lowest value in this category. Interestingly, 2024 marks a significant turning point, with the score rising sharply to 13.43, surpassing all previous years. This suggests that although environmental disclosure experienced a temporary contraction, there may have been renewed awareness or stronger regulatory pressure toward the end of the period, encouraging companies to become more transparent regarding energy efficiency and waste management practices.

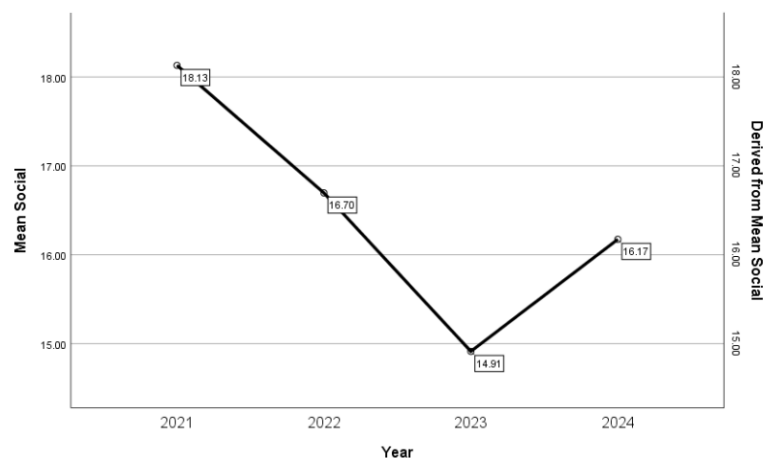


Figure 5. Development of the Social Aspect in the Hospital and Pharmaceutical Sector

The graph of the social aspect shows a notable downward trend, particularly during the first three years, which is a significant concern considering that this variable represents the pillar with the highest average score in the descriptive statistics. Starting at 18.13 in 2021, the social score experienced a continuous decline, reaching 14.91 in 2023. Given that the regression analysis indicates that the social aspect has the most dominant influence on firm value, this downward trend during the mid-period may signal negative implications for stakeholders regarding the company's social commitment. Although there was a moderate increase to 16.17 in 2024, this level still reflects a considerable gap compared to the initial level, suggesting that the recovery of transparency related to labor policies and community relations is still progressing gradually.

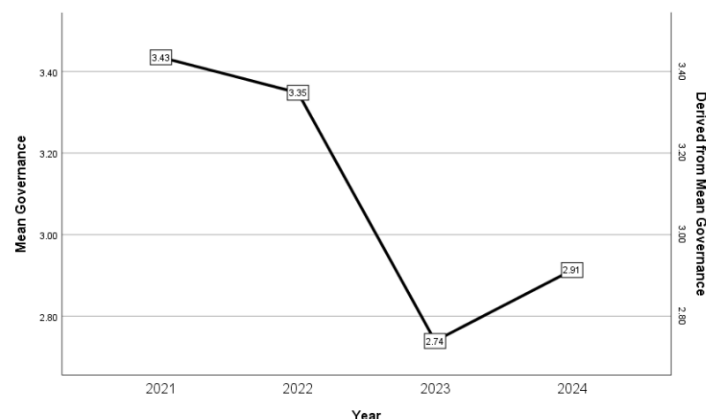


Figure 6. Development of the Governance Aspect in the Hospital and Pharmaceutical Sector

The corporate governance aspect shows the most concerning trend, as it has the lowest average score and continues to experience pressure throughout the observation period. Starting from 3.43 in 2021, the score gradually declined to 2.74 in 2023. Although there was a slight positive correction to 2.91 in 2024, this value remains at a very low level. This finding is consistent with the statistical analysis results, which indicate that the governance aspect does not have a significant influence on firm value in the research model. The consistently low and relatively stagnant trend reinforces the perception among investors that governance disclosure in this sector may be viewed merely as compliance with standard administrative or normative requirements, without meaningful innovation in reporting practices from year to year.

CONCLUSION

This study shows that ESG disclosure plays a significant role in influencing firm value in Indonesia's healthcare sector, both for hospitals and pharmaceutical companies. Of the three ESG dimensions examined, the social aspect is the most dominant factor driving increases in firm value. Conversely, the governance dimension does not have a statistically significant impact. This indicates that assessments of firm value in this sector are more heavily influenced by regulatory frameworks and investor focus on financial performance, while corporate governance practices

are relatively uniform across companies, thus playing a limited role as a differentiating factor.

Furthermore, the study shows that the trend of firm value in Indonesian hospitals during the 2021–2024 period remains dynamic and influenced by sectoral conditions and post-pandemic adjustments.

This study contributes theoretically by providing sector-specific empirical evidence for Legitimacy Theory, Stakeholder Theory, and Signaling Theory within Indonesia's healthcare sector. Practically, it offers a dimensional ESG analysis comparing hospital and pharmaceutical sub-sectors during the post-pandemic period (2021–2024), filling a significant gap in the Indonesian ESG literature.

Healthcare company management should prioritize social ESG disclosures, particularly those related to labor welfare, community health access, and patient safety reporting, as these have the strongest positive effect on firm valuation. Environmental disclosures related to medical waste management and energy efficiency should also be strengthened to enhance long-term investor confidence and market performance.

The Financial Services Authority (OJK) and the Ministry of Health should develop standardized ESG disclosure frameworks tailored to the healthcare sector. Mandatory reporting requirements based on GRI Standards would improve disclosure quality, comparability, and investor decision-making in this sector.

This study has several limitations that should be considered when interpreting the findings: (1) the sample is limited to 23 IDX-listed companies, which may not fully represent all healthcare institutions in Indonesia; (2) the four-year observation period (2021–2024) is relatively short; (3) the study is sector-specific (hospital and pharmaceutical), limiting generalizability to other industries; and (4) ESG scoring is based on GRI indicator counts and may involve some subjectivity in the scoring process.

Future studies should consider extending the observation period, incorporating more companies, including private healthcare institutions, and exploring moderating variables such as firm size, leverage, and institutional ownership in the ESG–firm value relationship. Research using third-party ESG rating agencies (e.g., MSCI, Sustainalytics) for scoring would enhance objectivity and comparability with global studies.

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AUTHOR CONTRIBUTION STATEMENT

Yanuar Ramadhan: Conceptualization, research design, data collection, ESG scoring, formal analysis, interpretation of results, manuscript drafting, and revision. Ferry Hendro Basuki: Methodological supervision, validation of research framework, statistical analysis review, critical manuscript review, editing, and final approval of the manuscript.

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