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GREENWASHING AND FIRM VALUE: THE ROLE OF INSTITUTIONAL OWNERSHIP IN FINANCIAL SECTOR COMPANIES

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Abstract

This study aims to examine the relationship between greenwashing and firm value, moderated by institutional ownership, in financial sector companies during the 2021–2024 period. Grounded in signaling theory, this study argues that greenwashing practices can send misleading signals to investors when the information companies provide regarding their environmental commitments does not align with their actual environmental performance. This misalignment has the potential to erode investor confidence and trigger negative market assessments, thereby leading to a decline in firm value. This study employs a quantitative approach using a sample of financial sector firms from 2021 to 2024. The sample consists of 69 firms with a total of 276 observations. Regression analysis was used to test the hypothesis that the higher a firm's level of greenwashing, the more significant its impact on firm value as measured by market-based indicators. The results of this study indicate that greenwashing has a significant negative effect on firm value. Furthermore, institutional ownership was found to significantly moderate the relationship between greenwashing and firm value in a negative direction. These results suggest that institutional ownership does not mitigate the negative impact of greenwashing as hypothesized, but rather reinforces this negative effect on firm value.

Keywords: *Greenwashing; Firm Value; Institutional Ownership*

1. INTRODUCTION

Background

In recent years, Environmental, Social, and Governance (ESG) practices have become a key mechanism for companies to demonstrate their commitment to sustainability (Marpaung, 2025). Companies are not only expected to create economic value but also to make social and environmental contributions through sustainable business practices (Sundarasan et al., 2024). Although sustainability can be a strategic advantage (Xu et al., 2025), not all companies have a genuine commitment, leading to greenwashing—a mismatch between ESG disclosures and actual environmental performance (Freshtiana & Kim, 2025). The term “greenwashing” was first introduced by Jay Westervelt in 1986 (Zioło et al., 2024). According to Wang & Tian (2025), greenwashing occurs when companies unethically use an eco-friendly image without delivering tangible environmental impacts. Unlike green marketing, this practice aims solely to build a positive image through environmental claims that are often not supported by sufficient evidence (Dewi & Tarina, 2024; Putri et al., 2021). On one hand, greenwashing can enhance a company's image and attract environmentally conscious investors and consumers (Dempere et al., 2024). However, this practice can also erode stakeholder trust and trigger



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negative market reactions such as consumer boycotts and reduced investment, thereby impacting stock performance and corporate value (Liang & Gao, 2025).

In the context of sustainability finance, greenwashing also occurs with investment products that are claimed to be environmentally friendly but do not actually meet those standards (Dempere et al., 2024). Cases of greenwashing in the global banking and financial services sector have increased by 70% over the past year. RepRisk data recorded 148 cases of greenwashing in the sector as of September 2023, making it the second-highest sector after oil and gas (Wilkes, 2023). Additionally, a survey by The European Consumer Organisation (BEUC) indicates that 34% of European consumers are reluctant to invest in sustainable financial products due to concerns about misleading environmental claims (Canning, 2025). One global greenwashing case involved Deutsche Bank's asset management firm, DWS. DWS claimed to be a leader in ESG investing, but whistleblower allegations revealed that the company had exaggerated the sustainability of its investments. This case triggered a regulatory investigation and resulted in a 25 million euro fine after it was proven to have made misleading statements regarding its environmental and social investments. Additionally, DWS's stock price declined following the revelation of the case (Burger et al., 2025). Greenwashing initially emerged at the investment product level through misleading eco-friendly claims, then expanded to the organizational level through selective or symbolic corporate reporting. According to Delmas & Burbano (2013), greenwashing occurs when there is a discrepancy between actual environmental performance and a company's public communications. Meanwhile, Lyon & Maxwell (2011) state that companies tend to exaggerate positive information to gain legitimacy without making substantive changes.

To address these practices, the European Union established the European Securities and Markets Authority (ESMA) as a financial market regulator focused on transparency and the prevention of greenwashing. ESMA also collaborates with national authorities to develop supervisory methods and will publish a greenwashing supervision report in 2024 (ESMA, n.d.). Additionally, the European Union has implemented the Sustainable Finance Disclosure Regulation (SFDR) to enhance the transparency of sustainable investment products and prevent greenwashing. In the UK, the Financial Conduct Authority (FCA) has also designed a sustainable investment labeling system and consumer protection rules against greenwashing practices (Davison et al., 2023). Greenwashing in sustainable finance is more frequently identified and addressed in developed nations, particularly within the European Union through regulations such as the Sustainable Finance Disclosure Regulation (SFDR), which is overseen by the European Securities and Markets Authority. This regulation enhances transparency and oversight of misleading ESG claims, enabling companies proven to engage in greenwashing to face sanctions. This demonstrates that greenwashing impacts corporate reputation, financial performance, and corporate value. Conversely, in developing countries, ESG adoption is growing rapidly, yet regulations and the quality of disclosures remain weak, creating a greenwashing threat that is difficult to monitor (Ma et al., 2025). Research on greenwashing is also still dominated by developed countries at 69.7%, while developing countries account for only 30.3%. The majority of research is conducted on large companies and the manufacturing sector (Zioło et al., 2024).

One case of greenwashing in Indonesia involved Bank Mandiri, which was sued by TuK Indonesia over allegations that it had financed palm oil companies in a manner deemed contrary to sustainability principles (Fadhilah, 2024). However, the lawsuit was dismissed on



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administrative grounds, and to date, no specific sanctions have been imposed regarding greenwashing (Fadhilah, 2025a, 2025b). This situation indicates that regulations in Indonesia, including POJK No. 51/2017, have not yet specifically defined greenwashing or established sanctions for it. The OJK also emphasized the need for more transparent reporting standards to prevent such practices (ANTARA, 2024). Researchers at the OJK Institute noted that greenwashing is driven by non-standardized regulations, information asymmetry, and a lack of technical understanding of sustainability (Arief, 2025). Nevertheless, greenwashing has been shown to negatively impact corporate value, increase corporate risk, and erode investor confidence (Birindelli et al., 2024; Galletta et al., 2024; Gregory, 2024). Furthermore, most previous studies have largely overlooked corporate governance aspects, even though institutional ownership can serve as a monitoring mechanism to curb greenwashing (Fan & Fu, 2020; Zhu et al., 2025). Research on the role of institutional ownership in mitigating the negative relationship between greenwashing and firm value remains limited. Therefore, this study examines the impact of greenwashing on firm value and the moderating role of institutional ownership in financial sector firms, particularly in developing countries such as Indonesia.

The research questions in this study are whether greenwashing has a negative relationship with firm value in the financial sector and whether institutional ownership can weaken that negative relationship. Based on these research questions, this study aims to analyze the effect of greenwashing on firm value, with institutional ownership as a moderating variable, in financial sector companies, while also supporting the creation of a greener, more transparent, and more sustainable financial market. This study is expected to contribute to the accounting literature by positioning greenwashing as an issue of reporting quality, not merely a sustainability practice. Additionally, this study enriches the corporate governance literature by examining institutional ownership as an external oversight mechanism that influences the quality of ESG and financial reporting. This study also strengthens the financial accounting literature by demonstrating that discrepancies in ESG reporting have economic implications for firm value. Furthermore, this study enriches the empirical evidence regarding greenwashing in financial sector firms in developing countries, a topic that remains limited in the research literature.

Literature Review

Greenwashing is defined as a manipulative practice aimed at building a company's image of environmental responsibility (Marpaung, 2025). This practice can have negative consequences for companies, consumers, and the environment, and can trigger a bandwagon effect among companies that hinders sustainable development (Dewi & Tarina, 2024). Several studies have found that greenwashing negatively impacts corporate performance and value. Birindelli et al. (2024) demonstrate that banks engaging in greenwashing tend to exhibit lower financial performance. Similar findings were reported by X. Du (2015; Ghitti et al. (2024); Gregory (2024); Xu et al. (2025). Investors view discrepancies between ESG claims and actual practices as negative signals that can lower a company's valuation (Birindelli et al., 2024; Ghitti et al., 2024). Conversely, Karsini et al. (2025) and Kiran et al. (2024) found that greenwashing can have a positive impact on firm value when the practice goes undetected, as it builds green legitimacy and increases investor support. However, other studies indicate that greenwashing has no significant relationship with firm value. Mazzacurati et al. (2023) and Fernandez et al. (2025) found that greenwashing does not significantly impact financial performance, likely because investors remain more focused on financial statements than on ESG factors.



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Theoretical Framework

This study employs two theories: signaling theory and agency theory. Signaling Theory explains that companies use disclosures to convey information to investors when information asymmetry exists (Ruiz-Blanco et al., 2022). Authentic ESG disclosures serve as a positive signal to investors and can enhance corporate value (Connelly et al., 2011). Conversely, greenwashing constitutes a false signal that can damage reputation, erode investor trust, and negatively impact firm performance and value (Freshtriana & Kim, 2025a; Liang & Gao, 2025). Furthermore, greenwashing can also weaken a firm's profitability (Li et al., 2023). Agency Theory, agency theory explains the conflict of interest between managers and shareholders resulting from information asymmetry (Dwiarti et al., 2022; Jensen & Meckling, 1976). Under such conditions, managers may engage in greenwashing to enhance the company's image for short-term gain (Ghitti et al., 2024; Liu, 2025). When this practice is exposed, corporate value and investor confidence may decline (Liang & Gao, 2025). In agency theory, institutional ownership serves as a monitoring mechanism that can curb opportunistic managerial behavior, including greenwashing, thereby helping to enhance corporate value (Velte, 2020; Zhu et al., 2025).

Research Hypothesis

Greenwashing is the practice of disseminating misleading information regarding a company's sustainability (Sidney & Liao, 2025). When undetected, greenwashing can establish green legitimacy and increase stakeholder support (Li et al., 2023). However, if exposed, this practice can erode investor trust, increase capital costs, reduce profitability, and negatively impact firm value (Liang & Gao, 2025). Investors also tend to impose market penalties on companies found to have committed environmental violations (Birindelli et al., 2024; Xu et al., 2025). Based on signaling theory, greenwashing serves as a negative signal that can damage reputation and reduce firm value (X. Du, 2015).

H1: Greenwashing has a negative relationship with firm value.

Institutional ownership can enhance oversight of management, thereby curbing greenwashing practices (Yu et al., 2020; Zhu et al., 2025). High institutional ownership promotes transparency, internal controls, the quality of ESG disclosures, and better analyst oversight, thereby making corporate information more credible (Wu et al., 2022; Zhu et al., 2025). With stronger oversight, the likelihood of greenwashing can be reduced, thereby lowering its negative impact on firm value.

H2: Institutional ownership can mitigate the negative impact of greenwashing on firm value.

2. RESEARCH METHOD

a. Population and Sample

This study is a quantitative study. It uses secondary data sourced from Refinitiv, covering information on financial sector companies in developing ASEAN countries based on World Bank data for the period 2021–2024. The population in this study consists of financial sector companies in developing ASEAN countries as defined by the World Bank. Financial sector



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companies encompass various types of institutions whose primary functions include channeling funds, managing risk, and providing payment and investment services. The study sample comprises 4 countries with 69 companies over the 2021–2024 period, resulting in a total of 276 observations. The research sample was determined using purposive sampling with the following criteria: financial sector companies from developing ASEAN countries based on World Bank data for 2021–2024, and financial sector companies with complete financial and non-financial data required to measure all research variables during the study's observation period, namely 2021–2024.

b. Operationalization of Variables

Dependent Variable, firm value, is measured using a market-based indicator, namely Tobin's Q. Market-based performance reflects real-time fluctuations in stock prices, which reflect stakeholders' perceptions and concerns regarding corporate decisions and practices (X. Du, 2015).

Independent Variable, Greenwashing is measured by dividing the demeaned Refinitiv CSRStrategy score by the average of the Refinitiv Emissions and Resource Use scores. Subsequently, greenwashing is regressed against the overall ESG score (Refinitiv ESG Score), and the residuals from this regression are used as the final measure of greenwashing. This approach aims to distinguish pure greenwashing from genuine ESG activities already reflected in the ESG score. The upper quartile of the regression results is used to classify the level of greenwashing as a dummy variable: assigned a value of 1 if the greenwashing score is $\geq$ the upper quartile, and 0 if below it (Gregory, 2024).

Moderating Variable, Institutional ownership is measured as the proportion of a company's total outstanding shares held by all institutional investors. Institutional ownership refers to the percentage of a company's outstanding shares held by institutional investors (Nhung et al., 2025).

Control Variables, include Firm Size, measured by the natural logarithm of total assets at the end of the period; Leverage, measured by the debt-to-equity ratio; Company Growth, measured by the rate of growth in operating profit (B. Du et al., 2022), and Board Size, measured by the total number of directors on the board (García Ramos & Díaz, 2021).

c. Data Collection and Analysis Methods

This study employs a documentary data collection technique utilizing data from Refinitiv, encompassing information regarding the companies included in the research sample. Data analysis was conducted using multiple linear regression to evaluate the relationship between independent and dependent variables. This study utilizes panel data—a combination of time-series and cross-sectional data—analyzed using STATA software. The multiple linear regression equation used is as follows:

$$H1: FV_{it} = \alpha + \beta_1 GW_{it} + \beta_2 FS_{it} + \beta_3 L_{it} + \beta_4 CG_{it} + \beta_5 BS_{it}$$

$$H2: FV_{it} = \alpha + \beta_1 GW_{it} + \beta_2 IO_{it} + \beta_3 GW * IO_{it} + \beta_4 FS_{it} + \beta_5 LEV_{it} + \beta_6 CG_{it} + \beta_7 BS_{it} + e_{it}$$

Based on the regression equation above, FV is the dependent variable Firm Value. α is the constant, β_1 – β_7 are the regression coefficients, GW is the independent variable greenwashing,



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IO is the moderating variable institutional ownership, FS is the control variable Firm Size. LEV is the control variable Leverage, CG is the control variable Company Growth, BS is the control variable Board Size, and e is the error term. This study employs a panel data regression approach using the Ordinary Least Squares (OLS) method as the basis for estimation. To determine the most appropriate panel model specification, this study estimated three main approaches: the Common Effect Model, the Fixed Effect Model, and the Random Effect Model. Model selection was performed using the Chow test (comparing CEM and FEM), the Hausman test (comparing FEM and REM), and the Lagrange Multiplier test (comparing CEM and REM).

3. RESULT AND DISCUSSION

Descriptive Statistic

Based on the results of the descriptive analysis in Table 1, all research variables had 276 observations, indicating that there were no missing values. The Firm Value (FV) variable had a mean of 0.704143 with a standard deviation of 0.938922, indicating a fairly high variation in firm value across the sample. The minimum FV value of 0.0061182 and the maximum of 5.941957 indicate a significant difference in firm values. The Greenwashing (GW) variable has a mean of 0.3478261, or approximately 34.78%, indicating that a small portion of firms are suspected of engaging in greenwashing. The Institutional Ownership (IO) variable has a mean of 0.2655116 or 26.55%, with data variation classified as moderate. The Greenwashing and Institutional Ownership interaction variable (GWIO) has a mean of 0.0881221, indicating a relatively low level of interaction between the two variables.

Table 1. Descriptive Statistic

Variable	Obs	Mean	Std. dev.	Min	Max
FV	276	0.704143	0.938922	0.006118	5.941957
GW	276	0.347826	0.477146	0	1
IO	276	0.265512	0.22016	0	0.8864
GWIO	276	0.088122	0.170837	0	0.8864
FS	276	22.53809	2.260949	17.17818	26.2067
LEV	276	0.298937	0.221487	0	0.7849
CG	276	-1.19247	13.81385	-166.754	3.10449
BZ	276	9.068841	3.586689	3	21

The Firm Size (FS) variable has a mean of 22.53809, with a range of values indicating the presence of small to large companies in the sample. The Leverage (LEV) variable has a mean of 0.2989367, or approximately 29.89%, indicating that the companies' level of debt utilization is moderate. Meanwhile, the Corporate Governance (CG) variable has a standard deviation that



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is very large compared to the mean, indicating high data dispersion and the possibility of outliers. Furthermore, the Board Size (BZ) variable has a mean of 9.068841, or approximately 9 board members, with considerable variation in board size across companies. Overall, the results of the descriptive analysis show that most variables have good data variation, although there are indications of outliers, particularly in the Corporate Governance and Firm Value variables.

Regression Model Selection

Chow Test, commonly referred to as the F-statistic test, is a statistical test designed to determine whether a fixed-effects model or a random-effects model is a better fit. The following are the results of the Chow test.

Table 2. Chow Test

Fixed-effects (within) regression	Number of obs	=	276
Group variable: firmid	Number of groups	=	69
R-squared:	Obs per group:		
Within	=	0.2346	min = 4
Between	=	0.2115	avg = 4.0
Overall	=	0.2048	max = 4
	F(7, 200)	=	8.76
corr(u_i, Xb)	=	-0.6668	Prob > F = 0.0000

	FV	Coefficient	Std. err.	t	P>t	[95% conf. interval]
	GW	-0.2841885	0.1186723	-2.39	0.018	-0.5181981 -0.050179
	IO	0.3387449	0.2902661	1.17	0.245	-0.2336297 0.9111194
	GWIO	-1.146108	0.31019	-3.69	0.000	-1.757771 -0.534446
	FS	-0.4164576	0.164223	-2.54	0.012	-0.7402884 0.0926268
	LEV	0.6021934	0.3577964	1.68	0.094	-0.1033439 1.307731
	CG	-0.0004393	0.0015064	-0.29	0.771	-0.0034099 0.0025312
	BZ	-0.0234085	0.0279561	-0.84	0.403	-0.078535 0.031718



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_cons	10.23195	3.657813	2.8	0.006	3.019125	17.44478
sigma_u	1.076829					
sigma_e	0.29661051					
rho	0.92947889	(fraction of variance due to u_i)				
F test that all u_i=0: F(68, 200) = 28.23						Prob > F = 0.0000

If Prob > F is less than alpha (5%, 10%, 15%), then reject H0 and accept H1. In Table 2, the regression output at the bottom shows the value for "F-test that all $u_i = 0$ " with Prob > F = 0.0000. This probability value is less than 0.05, so H0 is rejected and H1 is accepted. This means that there is a significant individual effect on each company, so the Fixed Effects Model is more appropriate than the Common Effects Model. Thus, the results of the study show that each company has distinct characteristics, and these differences influence firm value. Therefore, the use of the FEM in this study is appropriate because it accommodates heterogeneity among companies.

Hausman Test, yielded a chi-squared value (chi2(7)) of 8.58, with a probability value of Prob > chi2 = 0.2841. Since this probability value is greater than the 5% significance level (0.05), H0 is accepted and H1 is rejected. Thus, it can be concluded that the most appropriate model to use in this study is the Random Effect Model (REM), not the Fixed Effect Model. This indicates that differences in characteristics among companies are random and not significantly correlated with the independent variables in the research model.

Table 3. Hausman Test

Coefficients ----				
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_bV_B)) Std. err.
GW	0.2841885	0.2461836	-0.038005	0.0339974
IO	0.3387449	0.5432457	-0.2045009	0.1517784
GWIO	-1.146108	-1.111432	-0.0346761	0.0740099
FS	0.4164576	0.1407685	-0.2756891	0.1576863
LEV	0.6021934	0.3422265	0.2599669	0.2285519
CG	0.0004393	-0.000225	-0.0002143	0.0001841



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$$BZ \begin{vmatrix} - & - & - & - \\ 0.0234085 & 0.0086287 & -0.0147798 & 0.0179303 \end{vmatrix}$$

b = Consistent under H0 and Ha; obtained from xtreg.

B = Inconsistent under Ha, efficient under H0; obtained from xtreg.

Test of H0: Difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(7) &= \frac{(b-B)'[(V_b-V_B)^{-1}](b-B)}{1} \\ &= 8.58 \\ \text{Prob} > \text{chi2} &= 0.2841 \end{aligned}$$

These results indicate that the estimator in the Random Effects Model is more efficient than that in the Fixed Effects Model because it produces better estimates when the assumptions of the REM are met. Furthermore, the use of the REM allows for more optimal utilization of cross-sectional and time-series data variability compared to the FEM. Therefore, although the Chow test previously indicated that the FEM was superior to the Common Effects Model, the results of the Hausman test suggest that the REM is more appropriate than the FEM.

Test of Classical Assumptions

Multicollinearity Test, based on the results of the multicollinearity test in Table 4, which uses the Variance Inflation Factor (VIF) method, it is possible to determine whether there is a high degree of linear correlation among the independent variables in the regression model.

Table 4. Multicollinearity Test

Variable	VIF	1/VIF
LEV	3.35	0.298330
FS	3.16	0.316852
c_BZ	1.24	0.807019
Mod	1.10	0.909531
c_GW	1.05	0.950890
c_IO	1.04	0.957115
CG	1.02	0.983853



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Mean VIF | 1.71

The multicollinearity test aims to ensure that the independent variables are not strongly correlated with one another, as high multicollinearity can cause regression estimates to be unstable and less accurate. In general, a regression model is considered free of multicollinearity if the VIF value is < 10 and the Tolerance value ($1/\text{VIF}$) is > 0.10 . Overall, the results of the multicollinearity test indicate that all independent variables in the study have VIF values below 10 and tolerance values above 0.10. Therefore, it can be concluded that the regression model is free from multicollinearity issues, and the independent variables used in the study are suitable for further analysis in panel data regression testing.

Autocorrelation and Heteroscedasticity Tests, the results show that the panel structure is estimated to be homoscedastic (panels: homoscedastic), meaning that the residual variance is assumed to be constant across cross-sectional units. Furthermore, the model also indicates the absence of autocorrelation (correlation: no autocorrelation), which is supported by estimated autocorrelation values of 0. This condition indicates that the residuals across observation periods are not correlated with one another, meaning the model satisfies the assumption of independence of error terms across time.

Table 5. Autocorrelation and Heteroscedasticity Tests

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares

Panels: homoskedastic

Correlation: no autocorrelation

Estimated covariances	=	1	Number of obs	=	276
Estimated autocorrelations	=	0	Number of groups	=	69
Estimated coefficients	=	8	Time periods	=	4
			Wald chi2(7)	=	82.81
Log likelihood	=	-337.5233	Prob > chi2	=	0.0000

	FV	Coefficient	Std. err.	Z	P>z	[95% conf. interval]
	GW	-0.1604566	0.1794262	-0.89	0.371	-0.5121254 0.1912123
	IO	0.6784657	0.2775606	2.44	0.015	0.1344568 1.222475
	GWIO	-0.551117	0.514491	-1.07	0.284	-1.559501 0.4572669



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FS	-0.1634101	0.0281119	-5.81	0.000	-0.2185084	0.1083117
LEV	0.244105	0.2459091	0.99	0.321	-0.2378679	0.7260779
CG	0.0034386	0.0036148	0.95	0.341	-0.0036463	0.0105236
BZ	0.0100047	0.0171155	0.58	0.559	-0.023541	0.0435504
_cons	4.151727	0.5652772	7.34	0.000	3.043804	5.25965

From the perspective of testing classical assumptions, the results indicate that the model is free from heteroscedasticity and autocorrelation. The absence of autocorrelation means that errors in one period are not influenced by errors in the previous period, thereby preventing distortion in the estimation of standard errors that could lead to errors in statistical significance testing. Meanwhile, the assumption of homoscedasticity indicates that the variation in residuals across panels is relatively uniform, so the model produces efficient and unbiased estimates. With both assumptions met, the regression results can be interpreted more reliably because the resulting coefficients and probability values accurately reflect the relationships between variables.

Model Specification Test, based on Table 6, which presents the results of the random-effects GLS regression estimates, the model uses 276 observations from 69 companies across 4 observation periods, thereby forming a balanced panel. A random-effects model was used under the assumption that differences in characteristics among companies are reflected in the individual error terms and are uncorrelated with the independent variables.

Table 6. Random Effect Model

Random-effects GLS regression			Number of obs =		276	
Group variable: firmid			Number of groups =		69	
R-squared:			Obs per group:			
Within	=	0.2218	min	=	4	
Between	=	0.2122	avg	=	4.0	
Overall	=	0.2118	max	=	4	
			Wald chi2(7) =		73.62	
corr(u_i, X)	=	0 (assumed)	Prob > chi2 =		0.0000	
FV	Coefficient	Std. err.	z	P>z	[95% conf. interval]	
GW	-0.2461836	0.1136983	2.17	0.030	-0.4690282	-0.023339



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IO	0.5432457	0.2474221	2.2	0.028	0.0583073	1.028184
GWIO	-1.111432	0.3012314	3.69	0.000	-1.701835	0.5210296
FS	-0.1407685	0.0458719	3.07	0.002	-0.2306757	0.0508613
LEV	0.3422265	0.2752858	1.24	0.214	-0.1973237	0.8817767
CG	-0.000225	0.0014952	0.15	0.880	-0.0031555	0.0027055
BZ	-0.0086287	0.0214487	0.4	0.687	-0.0506674	0.0334099
_cons	3.891809	0.983944	3.96	0.000	1.963314	5.820304
sigma_u .	80713547					
sigma_e	0.29661051					
rho	0.88102193	(fraction of variance due to u_i)				

The coefficient of determination indicates an overall R^2 of 0.2118, meaning that 21.18% of the variation in Firm Value can be explained by the variables Greenwashing (GW), Institutional Ownership (IO), the GWIO interaction, Firm Size (FS), Leverage (LEV), Corporate Governance (CG), and Board Size (BZ), while the remaining 78.82% is influenced by other factors outside the model. This value is still acceptable in social and financial research because firm value is influenced by many external factors. The results of the simultaneous test show a Wald chi-squared value of 73.62 with a probability of $0.0000 < 0.05$, indicating that all independent variables collectively have a significant effect on Firm Value. Thus, the regression model is deemed suitable for use in this study.

Hypothesis Test, In the partial hypothesis test (t/z-test) in Table 6, the Greenwashing (GW) variable has a coefficient of -0.2462 with a p-value of 0.030, which is significant at the 5 percent level. These results indicate that greenwashing has a significant negative effect on firm value. This means that the more greenwashing a company engages in, the more its value tends to decline. This finding can be interpreted to mean that the market responds negatively to environmental manipulation or image-building practices that do not align with actual conditions, thereby eroding investor confidence. When greenwashing practices are exposed, this can damage trust among stakeholders, send negative signals, increase capital costs, worsen the company's financial condition, and ultimately reduce shareholder value (Liang & Gao, 2025). Greenwashing can significantly undermine an organization's legitimacy, which in turn negatively impacts corporate value. Companies that exaggerate their environmental commitments tend to experience a decline in stakeholder trust, increased regulatory scrutiny, and reputational damage, which cumulatively reduce corporate value (Szabo & Webster, 2021). The results of this study are consistent with previous research conducted by Wang &



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Tian (2025), Gregory (2024), dan B. Du et al. (2022). Based on the statistical tests and the discussion, it can be concluded that the first hypothesis is accepted.

Furthermore, based on the results of the hypothesis test, the p-value for the interaction between greenwashing and institutional ownership on firm value is $0.000 < 0.05$, with a coefficient of -1.1114. This negative coefficient indicates that institutional ownership moderates the relationship between greenwashing and firm value by weakening it in a negative direction. In other words, the presence of institutional ownership actually amplifies the negative impact of greenwashing on firm value. Companies publish CSR reports because they serve as a signal of good reputation; however, such publications may merely be a formality. Institutional investors pay little attention to the content of these reports, leading management to compromise on the quality of the content. Institutional investors play a role in encouraging companies to publish ESG reports as a means of meeting reputational demands and market expectations. However, investors' attention is more focused on the existence of the report (publication) than on the quality of its content. Consequently, companies tend to merely project an image of ESG responsibility without substantive action, thereby fueling greenwashing (Zhu et al., 2025).

4. CONCLUSION

Based on the results of tests using the Random Effects GLS method, greenwashing was found to have a significant negative effect on firm value. The higher the level of greenwashing, the lower the firm's value, as investors view such practices as negative signals regarding the firm's credibility, transparency, and integrity in ESG reporting. Furthermore, institutional ownership was found to moderate the relationship between greenwashing and firm value in a negative direction. This indicates that institutional ownership does not mitigate the negative impact of greenwashing but rather reinforces it. Institutional investors tend to encourage the publication of CSR reports as a signal of reputation but pay less attention to the quality of the report's content, thereby creating an opportunity for companies to engage in greenwashing through ESG branding without supporting concrete actions.

This study has limitations, namely a relatively short observation period of four years, which does not fully capture the long-term impact of greenwashing on firm value. Furthermore, the study only uses institutional ownership as a moderating variable, even though there are other governance mechanisms that could potentially influence this relationship. Future research is recommended to use a longer observation period and to include additional moderating or mediating variables such as audit quality, board independence, board gender diversity, media exposure, regulatory pressure, and corporate governance quality to ensure more comprehensive results. Furthermore, future studies are also encouraged to examine the phenomenon of "brownwashing," which occurs when companies report sustainability information that is lower than their actual environmental performance.

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