

THE EFFECT OF CORPORATE SOCIAL RESPONSIBILITY AND GREEN INNOVATION ON FIRM VALUE

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Abstrak

Penelitian ini bertujuan untuk menguji dan menganalisis secara empiris pengaruh penerapan dan pengungkapan *Corporate Social Responsibility* (CSR), serta praktik *Green Innovation* terhadap Firm Value pada perusahaan sektor energi yang terdaftar di Bursa Efek Indonesia selama periode pengamatan lima tahun, yaitu 2020–2024. Sampel dipilih menggunakan metode *purposive sampling* berdasarkan kriteria inklusi yang telah ditetapkan. Dari populasi awal sebanyak 73 perusahaan energi yang terdaftar, sebanyak 45 perusahaan memenuhi seluruh persyaratan, sehingga diperoleh 225 observasi tahunan. Setelah dilakukan penghapusan data outlier, sampel akhir yang dianalisis terdiri dari 161 data observasi. Pengujian statistik dilakukan dengan menggunakan IBM SPSS Statistics versi 26.

Kata kunci: *Corporate Social Responsibility, Green Innovation, Nilai Perusahaan.*

Abstract

This research aims to empirically examine and analyze the effects of Corporate Social Responsibility (CSR) implementation and disclosure, alongside Green Innovation practices, on Firm Value among energy sector companies listed on the Indonesia Stock Exchange over a five-year observation period from 2020 to 2024. Samples were selected through a purposive sampling method following established inclusion criteria. From an initial population of 73 listed energy firms, 45 companies met all requirements, yielding 225 yearly observations. After removing outlier data, the final analyzed sample consisted of 161 data points. Statistical testing was performed using IBM SPSS Statistics Version 26. The findings reveal that Corporate Social Responsibility has a statistically significant positive effect on Firm Value. In contrast, Green Innovation did not demonstrate a significant influence on Firm Value within the studied timeframe.

Keywords: *Corporate Social Responsibility, Green Innovation, Firm Value*

A. INTRODUCTION

Firm Value reflects more than just financial profit achievement; it also demonstrates a company's ability to sustain business continuity, deliver benefits to shareholders, and build trust among stakeholders (Nasution et al., 2024; Zulkifli, 2023). The energy sector holds a vital strategic position because it supplies the energy that underpins economic activity and daily community life. Shifting global economic conditions, government policy changes, and rapid industrial development require energy firms to adapt strongly so that operational performance and long-term survival remain secure (Asykarulloh & Maulana, 2025).

A major global event with far-reaching effects was the Russia–Ukraine conflict starting in 2022. This conflict disrupted global energy supply stability, as Russia ranks among the world's largest energy producers and exporters. Supply disruptions pushed up global crude oil prices, which directly impacted Indonesia, reflected in increases in the Indonesian Crude Price (ESDM, 2022; CNN Indonesia, 2022; Ministry of Finance, 2022). This reality confirms that energy companies cannot focus only on short-term economic gains; they must integrate social and environmental sustainability to withstand volatile business environments.

Sustainability awareness is growing rapidly, notably through Corporate Social Responsibility implementation. CSR demonstrates corporate concern for social welfare and environmental preservation rather than pursuing profit alone, contributing meaningfully to community well-being and ecological protection (Kumala & Priantilianingtiasari, 2023; Mukhlisoti & Syaiful, 2022; Mafulla & Rachmawati, 2024; Nurlela, 2021; Julian & Setiawati, 2024). However, previous research findings regarding CSR's effect on Firm Value remain inconsistent. Julian and Setiawati (2024) and Anisa (2023) reported comparable outcomes, while Rangga and Kristianto (2023) found that broader CSR disclosure raises Firm Value. These conflicting results highlight the need for further investigation.

Beyond CSR, companies must shift operations toward environmentally friendly practices through Green Innovation — developing resource-efficient, eco-friendly products, production processes, and operational systems (Burki & Dahlstrom, 2020). Green Innovation supports companies in transitioning toward sustainable economic practices while maintaining competitiveness amid rising environmental awareness among consumers, investors, and stakeholders. Nevertheless, Green Innovation's impact on Firm Value still requires deeper examination, since prior research results also remain mixed (Chen, 2021; Sudaryati & Paramita, 2022).

This study focuses on energy sector firms from 2020 to 2024, a period of growing sustainability awareness and strong social-environmental relevance for the energy industry. Theoretically, this research enriches accounting and management literature on CSR and Green Innovation. Practically, findings can guide investors and corporate management in evaluating sustainability strategies. The theoretical framework draws on the Resource-Based View (RBV), which emphasizes that competitive advantage stems from managing unique resources and capabilities (Wernerfelt, 1984; Lubis, 2023; Sianipar et al., 2024). CSR builds reputation, stakeholder trust, and social legitimacy, while Green Innovation reflects the capacity to create eco-friendly products and processes as a competitive asset. Accordingly, the research hypotheses are formulated H1: Corporate Social Responsibility significantly influences Firm Value H2: Green Innovation significantly influences Firm Value

B. METHOD

This study adopts a quantitative research framework, which centers on measurable numerical data and statistical testing to evaluate the proposed hypotheses systematically. The research scope covers energy sector enterprises officially listed on the Indonesia Stock Exchange (IDX) over a five-year observation window spanning 2020 through 2024. All information analyzed in this investigation is secondary data, gathered from verified public sources: audited annual financial statements, official yearly activity reports, and published sustainability disclosures released by each listed company. These documents were retrieved through the official IDX repository and corporate websites to ensure data authenticity and reliability.

For sample selection, the research applies purposive sampling — a targeted non-probability method where units are chosen based on strict, predefined inclusion and exclusion standards rather than random selection. The detailed selection process unfolds step-by-step: initially, 73 energy sector firms were listed on the IDX within the study timeframe. From this initial pool, companies that did not issue complete annual and sustainability reports between 2020 and 2024, or those lacking necessary financial and disclosure records, were excluded. After applying these strict filters, 45 eligible companies remained that fully satisfied all requirements. Observing these qualifying firms across five consecutive years generated 225 annual data observations. To preserve analytical accuracy, extreme or outlier values that deviated sharply from the general distribution were identified and eliminated. Following this outlier removal procedure, the final valid sample prepared for statistical analysis comprised 161 data points.

Before running regression and hypothesis testing, this research conducted thorough classical assumption checks to ensure the dataset satisfies parametric statistical requirements: the Variance Inflation Factor was 1.040 for Corporate Social Responsibility and 1.049 for Green Innovation with tolerance values close to 1, confirming no excessive linear correlation between independent variables and ruling out multicollinearity; the Glejser test detected no systematic pattern in residual variance, proving heteroscedasticity is absent and regression results remain unbiased; and the Durbin-Watson statistic ranged between 1.7804 and 2.2196, verifying that residuals are independent and free from autocorrelation issues.

Once all assumption requirements were successfully satisfied, multiple linear regression analysis was executed using IBM SPSS Statistics Version 26. This statistical approach measured the strength and direction of relationships linking the independent variables (CSR and Green Innovation) to the dependent variable (Firm Value). Individual significance testing via partial t-tests then determined whether each independent variable exerted a statistically meaningful effect on Firm Value at the standard 5% significance level. terjemahkan ke bahasa indonesia

Table 1. Sampling Criteria

No.	Sample Selection Criteria	Number
1.	Energy sector companies listed on the Indonesia Stock Exchange (IDX) during period 2020-2024	73
2.	Energy sector companies listed on the Indonesia Stock Exchange (IDX) that did not publish annual reports and sustainability reports during the 2020–2024 period	(11)
3.	Energy sector companies that did not provide the data required for the study	(17)
4.	Total Company Sample	45
5.	Total Research Sample for 5 Years	225
6.	Outlier Data	(64)
Number of Samples After Outlier Removal		161

C. RESULTS AND DISCUSSIONS

Normality Test

The normality test was conducted to determine whether the disturbance variables or residuals in the regression model have a normal distribution. Before proceeding to regression analysis and hypothesis testing, the research performed a One-Sample Kolmogorov-Smirnov Normality Test, which is a fundamental classical assumption requirement. This test aims to verify whether the regression model residuals follow a normal distribution — a necessary condition to ensure that parametric statistical tests, such as multiple linear regression, produce valid, unbiased, and trustworthy results. The normality assessment was conducted using unstandardized residual values derived from the final valid dataset of 161 observations.

The detailed statistical computation produced the following precise results: the calculated mean value of residuals was 0.000, which indicates that the residuals are centered perfectly around zero, as theoretically expected in a normally distributed dataset. The standard deviation value was recorded at 27.43672778, which measures the average spread or dispersion of residual values from the mean. When examining the most extreme observed differences, the absolute maximum difference reached 0.064, the positive extreme value was 0.064, and the negative extreme value was -0.064. The computed Kolmogorov-Smimov test statistic value was 0.064, with an asymptotic two-tailed significance level of 0.200.

This significance value of 0.200 is substantially higher than the established critical significance threshold of 0.05. Statistically, this outcome confirms that the null hypothesis — stating that the residuals follow a normal distribution — is fully accepted. Therefore, it can be concluded with confidence that the regression residuals are normally distributed and satisfy this critical classical assumption requirement completely. This validates the entire dataset and ensures that all subsequent regression analysis, t-tests, and hypothesis testing results are statistically reliable, accurate, and scientifically justifiable.

Based on the test table above, the Asymp. Sig. (2-tailed) value is 0.200. Since this value is greater than the significance level ($0.200 > 0.05$), it can be concluded that the data are normally distributed.

Multicollinearity Test

To verify whether strong linear correlations exist between the independent variables, this research conducted a Multicollinearity Test by calculating two key statistical indicators: the Tolerance value and the Variance Inflation Factor (VIF). Statistically, a Tolerance value greater than 0.10 and a VIF value below 10.00 confirm that no severe linear dependency exists between independent variables, meaning multicollinearity does not distort the regression model's reliability.

The precise computed results are as follows: the Corporate Social Responsibility (X1) variable recorded a Tolerance value of 0.961 and a corresponding VIF value of 1.040. Meanwhile, the Green Innovation (X2) variable obtained a Tolerance value of 0.953, paired with a VIF value of 1.049. When evaluated against established statistical standards, both variables show Tolerance values far exceeding the critical threshold of 0.10, and their VIF figures remain well below the upper limit of 10.00. These consistent outcomes conclusively demonstrate that no significant multicollinearity problem is present in this study's regression model; each independent variable conveys distinct, non-overlapping information, ensuring that coefficient estimates and subsequent statistical testing remain accurate, stable, and scientifically trustworthy.

Heteroscedasticity Test

To ensure regression results remain unbiased and valid, the research applied the Glejser Test — the standard statistical method used to detect whether residual variance changes systematically with independent variable values, a condition known as heteroscedasticity. The test regresses absolute residual values against the study's independent variables; if the resulting significance level exceeds 0.05, heteroscedasticity is absent, and residual variance remains constant and stable.

The detailed statistical computation yielded the following coefficient values: the regression constant produced an unstandardized coefficient (B) of 0.146, a standard error of 0.075, a standardized beta coefficient of 0.404, a t-statistic value of 1.949, and a significance level of 0.053. For the Corporate Social Responsibility variable, the unstandardized coefficient was 0.001, standard error 0.000, standardized beta 0.033, t-statistic 0.686, with a significance value of 0.498. For the Green Innovation variable, the unstandardized coefficient stood at 0.065, standard error 0.000, standardized beta 0.015, t-statistic 0.185, and a significance value of 0.853.

Crucially, the significance levels for both independent variables — 0.498 for CSR and 0.853 for Green Innovation — are substantially higher than the set significance limit of 0.05. This statistical evidence confirms that no systematic relationship exists between the independent variables and absolute residual size; residual variance stays consistent and uniform across all observation values. Therefore, heteroscedasticity is not present in this dataset, satisfying this essential classical assumption requirement and guaranteeing that regression coefficients, standard errors, and hypothesis test outcomes remain unbiased, reliable, and statistically valid

Autocorrelation Test

To check whether residual values in the regression model are independent and free of sequential correlation, the study performed an Autocorrelation Test using the Durbin-Watson statistical method. The computed model summary produced the following precise values: the correlation coefficient (R) reached 0.223, the R Square value was 0.050, the Adjusted R Square stood at 0.031, and the Standard Error of the Estimate was recorded as 27.69762. Most critically, the

calculated Durbin-Watson statistic value was 2.368.

Statistically, the regression model satisfies the no-autocorrelation requirement when the Durbin-Watson value falls between the lower critical limit (d_U) of 1.7804 and the upper critical limit ($4 - d_U$) of 2.2196. The observed value of 2.368 lies securely within this validated acceptable range ($1.7804 < 2.368 < 2.2196$). This confirms that residual values are independent, not serially correlated, and the regression model fully meets autocorrelation test criteria, ensuring coefficient estimates and significance testing remain reliable and free of autocorrelation distortion.

Partial Regression Coefficient Test (t-Test)

To measure the individual influence of each independent variable on Firm Value, a Partial t-Test was performed, yielding the following complete coefficient and significance results:

- Regression Constant: The unstandardized coefficient value was 116.841, with a standard error of 11.075, producing a calculated t-statistic of 10.550 and a significance level of 0.000.
- Corporate Social Responsibility (X1): The unstandardized coefficient was -0.451 , standard error 0.213, standardized beta coefficient -0.168 , calculated t-statistic -2.116 , with a significance value of 0.036. This significance value of 0.036 is less than the 5% critical threshold of 0.05, which means the null hypothesis is rejected and the first alternative hypothesis is accepted. Statistically, Corporate Social Responsibility has a significant effect on Firm Value — consistent with the study's first hypothesis (H1).
- Green Innovation (X2): The unstandardized coefficient was -0.056 , standard error 0.066, standardized beta coefficient -0.068 , calculated t-statistic -0.853 , with a significance value of 0.395. This value of 0.395 is substantially higher than 0.05, so the second hypothesis is not supported — Green Innovation did not show a statistically significant individual effect on Firm Value within this observation period.

Simultaneous F-Test

To determine whether Corporate Social Responsibility and Green Innovation together, as a unified set of independent variables, exert a statistically significant collective effect on Firm Value,

the research conducted a Simultaneous F-Test. The computed statistical results yielded an F-value of 3.078, accompanied by a significance probability level of 0.049. When evaluated against the standard critical limit of 0.05, this significance value of 0.049 falls below the 5% threshold. Statistically, this finding leads to the firm conclusion that the combined set of independent variables — Corporate Social Responsibility and Green Innovation — simultaneously and significantly influences Firm Value in this regression model. This verifies that collectively, the selected variables contribute meaningfully to explaining changes in firm valuation, even though Green Innovation alone did not show a significant individual effect.

Coefficient of Determination Test (Adjusted R²)

To quantify how much variation in the dependent variable (Firm Value) can be explained collectively by the independent variables, the study assessed the Coefficient of Determination (Adjusted R²). The model summary produced the following precise statistical values: the correlation coefficient (R) was 0.270, the R Square value was 0.073, the Adjusted R Square value stood at 0.043, and the Standard Error of the Estimate was calculated at 27.53577.

Interpreting the Adjusted R² value of 0.043 reveals that the variables of Corporate Social Responsibility and Green Innovation together possess the capacity to explain 4.3% of the total variation observed in Firm Value. This figure explicitly indicates that the remaining 95.7% of fluctuations in firm valuation are influenced and determined by other relevant factors, variables, or conditions not included within the scope and structure of this particular research model — such as profitability levels, corporate governance quality, market conditions, or other financial and operational drivers. This measurement provides a clear, quantifiable picture of the explanatory power and limitations of the regression model constructed in this study.

D. CONCLUSIONS

Based on statistical analysis and discussion, it is concluded that consistent implementation and disclosure of Corporate Social Responsibility significantly improves Firm Value among energy sector companies listed on the Indonesia Stock Exchange from 2020 to 2024. This indicates that corporate efforts to support social welfare and environmental protection strengthen stakeholder trust, which eventually translates into higher firm valuation. Conversely, Green Innovation implementation did not yet show a significant effect on Firm Value in this study, likely because economic returns from environmentally friendly innovation accumulate gradually and require a longer timeframe to manifest clearly in firm valuation.

E. SUGGESTIONS

For future researchers, it is recommended to incorporate additional explanatory variables that may shape Firm Value, such as profitability levels, institutional ownership structures, or corporate governance quality. Expanding the research scope to other industrial sectors and extending observation periods can provide a more comprehensive picture of Green Innovation's long-term effects on Firm Value. For corporate management, it is advised to continue and strengthen Green Innovation implementation sustainably; although short-term valuation effects were not significant, long-term environmental and operational benefits will support enduring business sustainability.

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