Do environmental practices create value or legitimacy? Evidence from green accounting and environmental performance in Indonesia's energy sector

Indira Geraldine Sugitan
Corresponding e-mail: indirasugitan294@gmail.com
Sam Ratulangi University - Indonesia

Peter M. Kapojos
Sam Ratulangi University - Indonesia

Abstract

This study investigates whether environmental practices generate financial value or primarily serve as legitimacy mechanisms in environmentally sensitive industries. Drawing on legitimacy theory, it examines the impact of green accounting and environmental performance on firm financial performance in Indonesia's energy sector. Using a sample of 19 listed energy companies over the 2021–2024 period (76 firm-year observations), this study employs multiple linear regression analysis. Green accounting is measured by environmental cost disclosure, environmental performance by PROPER ratings, and financial performance by Return on Assets (ROA). The findings reveal that green accounting has a negative and significant effect on financial performance, indicating that environmental expenditures impose short-term financial constraints. In contrast, environmental performance shows no significant impact, suggesting that compliance-based environmental ratings are not yet value-relevant for firms. However, both variables jointly affect financial performance. These results suggest that environmental practices in the energy sector are largely legitimacy-driven rather than value-driven. This study extends legitimacy theory by demonstrating that sustainability initiatives do not automatically translate into economic benefits, particularly in high-cost, regulation-intensive industries. The findings underscore the need for firms to shift from compliance-oriented environmental practices toward strategic sustainability integration to achieve long-term value creation.

Keywords: green accounting, environmental performance, legitimacy theory, financial performance, energy sector

Received
28 February 2026

Revised
19 April 2026

Accepted
23 April 2026

Published
24 April 2026

DOI: 10.58784/ramp.440

Introduction

Rapid industrial development has made a significant contribution to economic growth; however, it has also generated various negative environmental impacts, such as air, water, and soil pollution, as well as increased greenhouse gas emissions. This condition has led to growing public and stakeholder concern regarding corporate social and environmental responsibility, requiring companies to shift their focus from solely financial profit to sustainability.

The energy sector is one of the most environmentally sensitive sectors, as its operational activities have the potential to cause significant ecological impacts. In Indonesia, energy companies face a dual challenge: meeting the continuously increasing demand for energy while simultaneously reducing their negative environmental impacts. Therefore, companies are required to be more transparent in disclosing information related to their environmental activities and costs.

The implementation of green accounting is one approach used by companies to integrate environmental aspects into the accounting system through the recognition, measurement, and reporting of environmental costs. In addition, environmental performance has become an important indicator in assessing a company's commitment to managing environmental impacts, which in this study is measured using the PROPER rating issued by the Ministry of Environment and Forestry.

This study is grounded in legitimacy theory, which posits that companies seek to ensure their operations are perceived as legitimate by society. Firms adopt environmental practices not solely to improve financial performance, but to align with social norms, regulatory expectations, and stakeholder pressures. In this context, green accounting and environmental performance function as tools for maintaining legitimacy rather than directly enhancing profitability.

However, the economic consequences of such practices remain debatable. While environmental initiatives may strengthen corporate image and stakeholder trust, they may also impose additional costs that reduce short-term financial performance. Previous studies have reported inconsistent findings, indicating a

gap in understanding the role of environmental practices, particularly in high-impact industries such as the energy sector.

Therefore, this study aims to examine whether environmental practices create economic value or merely serve as legitimacy tools. By focusing on energy sector companies in Indonesia, this research provides empirical evidence on the relationship between green accounting, environmental performance, and financial performance within the legitimacy theory framework.

Literature Review

Green accounting is an accounting approach that integrates environmental aspects into financial reporting through the recognition and disclosure of environmental costs, which include all costs incurred from efforts to prevent, control, and remediate the negative environmental impacts of a company's activities, such as waste management, land reclamation, and investment in environmentally friendly technologies. The implementation of green accounting is expected to improve operational efficiency, reduce legal risks, and strengthen corporate reputation, thereby enhancing financial performance.

In addition, environmental performance, measured through the Program for Pollution Control, Evaluation, and Rating (PROPER), reflects the level of compliance and effectiveness of a company in managing its environmental impacts. A higher rating provides a positive signal to investors and stakeholders. Therefore, both the implementation of green accounting and environmental performance are theoretically expected to enhance trust, efficiency, and corporate sustainability, which ultimately contribute to improved financial performance.

Green accounting refers to the identification, measurement, and disclosure of environmental costs incurred by firms. Under legitimacy theory, the disclosure of environmental costs is viewed as a strategy to demonstrate accountability and align corporate activities with societal expectations.

Companies in environmentally sensitive sectors tend to disclose more environmental information to maintain legitimacy. However, such practices often require substantial financial resources, which may reduce profitability in the short term.

Previous studies have shown mixed results. Putri (2023) and Ismail (2021) found that green accounting and environmental performance have a positive effect on ROA, while Setiawan et al. (2024) found no significant effect.

Hypotheses:

H1: Green accounting has an effect on financial performance.

Environmental performance and financial performance

Environmental performance reflects the extent to which firms manage their environmental impact effectively. The PROPER rating serves as a government-based legitimacy mechanism that evaluates corporate compliance with environmental standards.

From a legitimacy perspective, achieving a high environmental rating helps companies maintain public acceptance and regulatory approval. However, since such ratings emphasize compliance rather than economic efficiency, their impact on financial performance may be limited.

Hypotheses:

H2: Environmental performance has a effect on financial performance.

Method

This study employs a quantitative approach with a sample of 19 energy sector companies (76 observations) selected through purposive sampling. The criteria include companies listed on the Indonesia Stock Exchange (IDX) during 2021–2024, participating in the PROPER program, and having complete financial statements and sustainability reports. Secondary data were obtained from the IDX and analyzed using multiple linear regression with the following model: $ROA = \alpha + \beta1\ GA + \beta2\ EP + e$, after conducting classical assumption tests (normality, multicollinearity, heteroscedasticity, and autocorrelation).

Table 1. Variables, Measurement, and Data Sources

Variables	Measurement	Data Sources
Green Accounting (X1)	Environmental Costs/ Net Income	Sustainability Report and Financial Report
Environmental Performance (X2)	PROPER Score (1/2/3)	KLHK
Financial Performance (Y)	Return on Assets (ROA)	Financial Report

Results and Discussion

Research Results

- **Descriptive analysis**

Table 2. Descriptive analysis results

	ROA	Green Accounting	Environmental Performance
N	76	76	76
Missing	0	0	0
Mean	-2.23	-4.29	0.712
Median	-2.09	-4.38	0.693
Standard Deviation	1.21	1.14	0.359
Minimum	-5.09	-6.50	0.00
Maximum	1.31	-1.21	1.10

Based on table 2 of the descriptive statistics results, the green accounting variable (X1) has a mean value of -4.29 with a standard deviation of 1.14, indicating that the data are heterogeneous. The environmental performance variable (X2) has a mean value of 0.712 with a standard deviation of 0.359, suggesting relatively homogeneous data characteristics. Meanwhile, the financial performance variable (Y) has a mean value of -2.23 with a standard deviation of 1.21, indicating that the data are also heterogeneous.

Normality Test

Table 3. Normality test results

	Statistic	P
Shapiro-Wilk	0.974	0.116
Kolmogorov-Smirnov	0.0686	0.843
Anderson-Darling	0.618	0.104

Based on the results of the normality test in Table 3, the Asymp. Sig. (2-tailed) value from the Kolmogorov–Smirnov test shows a p-value > 0.05. This indicates that the data are normally distributed.

Multicolinearity Test

Table 4. Multicolinearity test results

	VIF	Tolerance
Green Accounting	1.03	0.968
Environmental Performance	1.03	0.968

The results of the multicollinearity test in Table 4 show that the variables in this study have tolerance values > 0.1 and VIF values < 10. Therefore, it can be concluded that the green accounting and environmental performance variables do not exhibit multicollinearity and the analysis can proceed to regression testing.

- **Heteroscedasticity Test**

Table 5. Heteroscedasticity test results

	Statistic	P
Breusch-Pagan	0.758	0.685
Goldfeld-Quandt	1.40	0.162
Harrison-McCabe	0.427	0.196

The results of the heteroscedasticity test in Table 5 using the Breusch–Pagan, Goldfeld–Quandt, and Harrison–McCabe methods, all significance values are above 0.05, indicating the absence of heteroscedasticity. Therefore, the regression model satisfies the homoscedasticity assumption and is suitable for further analysis.

- **Autocorrelation Test**

Table 6. Autocorrelation test Result

Autocorrelation	DW Statistic	P
-0.217	2.43	0.066

The results of the autocorrelation test in Table 6 using the Durbin–Watson method, a value of 2.43 was obtained with a significance level of 0.066 (> 0.05), indicating the absence of autocorrelation in the regression model. A Durbin–Watson value close to 2 also suggests that the residuals are independent. Therefore, the regression model satisfies the assumption of no autocorrelation and is suitable for further analysis.

- **Hypothesist test**

Table 7. Hypothesist test result

Test	Statistic	P	Conclusion
t (Green Accounting)	-0.364	0.003	Has a negative and significant effect
t (Environmental Performance)	-0.580	0.126	Not significant
F	-	<0.05	Has a simultaneous effect

Based on the test results in Table 7, green accounting is proven to have a negative and significant effect on financial performance ($p < 0.05$), while environmental performance does not show a significant effect ($p > 0.05$), thus the second hypothesis is not supported. However, the simultaneous test results

indicate that both variables together have a significant effect on financial performance ($p < 0.05$), suggesting that the combination of green accounting and environmental performance is able to explain variations in the company's financial performance.

The difference between the partial and simultaneous test results indicates that each variable has a different contribution within the model, where their influence becomes stronger when analyzed collectively.

Discussion

Green accounting and financial Performance. Based on the results of multiple linear regression and partial testing, green accounting has a negative and significant effect on the financial performance of energy sector companies during the 2021–2024 period ($p < 0.05$), indicating that an increase in environmental costs tends to reduce profitability (ROA).

The findings show that green accounting has a negative and significant effect on financial performance. This result supports legitimacy theory, which suggests that environmental practices are often driven by the need to maintain social acceptance rather than to generate immediate economic benefits.

The negative relationship indicates that environmental costs are still perceived as a compliance burden. Companies incur these costs to meet regulatory requirements and societal expectations, particularly in the energy sector, which is under high environmental scrutiny. As a result, the financial benefits of green accounting are not realized in the short term.This condition is consistent with the findings of Setiawan et al. (2024) and Nianty et al. (2023), who found that green accounting has no significant or tends to have a negative effect on financial performance, but contradicts the studies of Putri (2023), Ramadhani et al. (2022), and Tjandrakirana et al. (2024), which report a positive effect. These differences may be attributed to the characteristics of the energy sector, which involves high environmental risk and requires substantial investment. As a result, the economic benefits of green accounting are more long-term in nature and are not yet fully reflected within the study period. Therefore, green accounting in energy sector companies is still more likely to be perceived as an operational burden rather

than a strategic investment, although it remains important for supporting sustainability and environmental risk management in the future.

Environmental performance and financial performance. Based on the results of multiple linear regression and partial testing, environmental performance does not have a significant effect on the financial performance of energy sector companies during the 2021–2024 period ($p > 0.05$), indicating that PROPER ratings have not been able to significantly improve profitability (ROA). This finding suggests that achieving strong environmental performance does not necessarily reflect operational efficiency or a company's ability to generate profit, as PROPER primarily emphasizes regulatory compliance rather than economic value creation. In addition, efforts to improve environmental performance generally require substantial investment with long-term benefits, which may not yet be reflected in financial performance during the study period.

From a legitimacy perspective, this suggests that environmental performance is primarily symbolic or compliance-oriented. Firms engage in environmental practices to secure legitimacy, but these efforts do not automatically create economic value. This reflects that sustainability practices in Indonesia are still driven by regulatory pressure rather than strategic value creation.

These results are consistent with the findings of Azizah & Cahyaningtyas (2023) and Widanengsih & Yulianti (2022), who found no significant effect, but differ from the studies of Ismail (2021), Rahman et al. (2023), and Afrida & Setyorini (2024), which reported a positive effect. These differences may be attributed to the low level of integration of environmental aspects into the business strategies of energy sector companies, resulting in suboptimal economic benefits. Therefore, environmental performance has not been able to provide a significant contribution to financial performance, although it remains important in supporting corporate sustainability and risk management.

Conclusion

This study concludes that environmental practices, including green accounting and environmental performance, are more closely associated with legitimacy-seeking behavior than with financial value creation. Green accounting negatively

affects financial performance, indicating that environmental costs are still treated as a short-term burden. Meanwhile, environmental performance does not significantly influence profitability, suggesting that compliance-based environmental ratings have limited economic impact.

These findings imply that sustainability practices in the energy sector are still driven by regulatory and social pressures rather than strategic considerations. Companies are encouraged to transform environmental initiatives into long-term value-creating strategies, rather than merely fulfilling legitimacy requirements.business strategies. Future research is recommended to use a longer observation period and include additional variables in order to obtain a more comprehensive understanding of the relationship between environmental aspects and financial performance.

References

Afrida, F., & Setyorini, D. (2024). Pengaruh Penerapan Green Accounting dan green Innovation Terhadap Kinerja Keuangan Dengan Sustainable Development Sebagai Variabel Moderating. *FINANCIAL: Jurnal Akuntansi*, 10(2), 221–233. https://financial.ac.id/index.php/financial/article/view/617

Azizah, N., & Cahyaningtyas, F. (2023). Pengaruh Csr, Kinerja Lingkungan, Dan Biaya Lingkungan Terhadap Profitabilitas. *Jurnal Ilmiah Bisnis Dan Ekonomi Asia*, 17(2), 212–225. https://doi.org/10.32815/jibeka.v17i2.1557

Ismail, A. A. (2021). The Influence of Environmental Performance and Environmental Costs on Financial Performance. *JASa (Jurnal Akuntansi, Audit Dan Sistem Informasi Akuntansi),* 5(3), 395–408. https://doi.org/10.36555/jasa.v5i3.1622

Nianty, D. A., Rachma, N., Susanti, A., & Nurfaulia. (2023). *Green Accounting Terhadap Kinerja Keuangan Dengan Environmental Performance Sebagai Variabel Intervening.* 9(2), 205–219. http://dx.doi.org/10.35906/jurman.v9i2.1696

Putri, L. G. (2023). *Pengaruh Biaya Lingkungan Terhadap Kinerja Keuangan Perusahaan (Studi Kasus Pada Perusahaan Manufaktur yang Terdaftar di BEI Periode Tahun 2017-2021).* 11(1), 831–838. https://doi.org/10.37676/ekombis.v11i1.3482

Rahman, Z. A., Handajani, L., & Kartikasari, N. (2023). Pengaruh Penerapan Green Accounting Terhadap Profitabilitas. *Monex Journal Research Accounting Politeknik Tegal*, 12(2), 251–263. https://doi.org/10.30591/monex.v12i2.5255

Ramadhani, K., Saputra, M. S., & Wahyuni, L. (2022). Pengaruh Penerapan Green Accounting Dan Kinerja Lingkungan Terhadap Kinerja Keuangan Dengan Tata Kelola Perusahaan Perusahaan Sebagai Variabel Moderasi. *Jurnal Akuntansi Trisakti*, 9(2), 229–244. https://doi.org/10.25105/jat.v9i2.14559

Setiawan, J., Diantimala, Y., Lautania, M. F., & Sayuthi, S. (2024). Does Green Accounting Matter for Financial Performance? Evidence from the Indonesia Mining Sector. *Jurnal Dinamika Akuntansi Dan Bisnis*, 11(2), 297–314. https://dx.doi.org/10.24815/jdab.v11i2.39348

Tjandrakirana, R., Ermadiani, E., & Aspahani, A. (2024). The Impact of Environmental Performance, Green Accounting, And Corporate Social Responsibility (CSR) on Financial Performance. *International Journal Of Humanities Education and Social Sciences (IJHESS)*, 4(3), 1332–1343. https://doi.org/10.55227/ijhess.v4i3.1335

Widanengsih, E. W., & Yulianti, M. L. (2022). The Effect of Implementing Green Accounting and Environmental Perfomance on Return on Assets (ROA) in the Non-Cyclical Consumer Sector Listed on the Indonesian Stock Exchange. *Journal of Accounting and Finance Management*, 3(3), 135–144. https://doi.org/10.38035/jafm.v3i3.120