
The Influence of Eco-efficiency on Financial Performance: Evidence From Indonesian Manufacturing Companies

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doi.org/10.51505/IJEBMR.2024.8207

URL: <https://doi.org/10.51505/IJEBMR.2024.8207>

Received: Jan 27, 2024

Accepted: Feb 6, 2024

Online Published: Feb 16, 2024

Abstract

With the development of business trends that increasingly prioritize environmental issues, companies need to balance between financial goals and social and environmental goals. Driven by the growing emphasis on environmental factors in business, this study delves into the influence of eco-efficiency and Corporate Social Responsibility (CSR) on corporate financial performance. To explore this, Researcher analyzed data from 132 Indonesian manufacturing companies listed on the Indonesia Stock Exchange between 2019 and 2022. Utilizing EViews 12 software and the Fixed Effect Model, researcher investigated the relationship between these factors and Return on Asset (ROA) as a measure of financial success. The findings reveal a positive correlation between eco-efficiency, CSR practices, and improved financial performance within the manufacturing sector. This finding will also be beneficial, especially for industries or companies in improving their financial performance, given the importance of environmental issues as part of competitive advantage in the business world.

Keywords: Manufacturing Companies, eco-efficiency, Corporate Social Responsibility (CSR), Financial Performance

1. Introduction

1.1 The Problems

In the midst of economic uncertainty and rapid industrial progress, manufacturing companies worldwide are consistently striving to strike a balance between financial objectives and accountability for the operational impact on the environment and society. The industrialization in the manufacturing sector undoubtedly yields positive effects on the economy in Indonesia. This can be directly proportional to the increasing pollution caused by production waste. The cause of pollution is due to the inefficient use of resources, which can impact the company's performance (Chen, Lai, & Wen., 2006). The concept of sustainability along with environmentally friendly practices has become a topic of attention among academics and practitioners (Simmou, Govindan, Sameer & Hussainey 2023). For companies, such a concept can undoubtedly influence their performance to achieve success in obtaining profits and competitive advantages.

Return on Asset (ROA) serves as the primary indicator of a company's performance in this analysis. ROA describes that the company has the ability to generate profits by utilizing the assets it owns (Xie, Huo & Zou 2019). Global and national economic data show that companies that integrate sustainability aspects into their operations tend to receive greater support from consumers and investors. Global emissions have increased almost every year since 1999-2022, according to the International Energy Agency (IEA). IEA also reported that 2022 was a year of high carbon emissions. In fact, Indonesia's rapid industrial growth can contribute to high carbon emissions. This is further supported by Singh, Giudice, Chierici (2020), who found in their study that industrial activities can lead to increased energy consumption, which in turn can contribute to high global carbon emissions.

It is known that the manufacturing industry is one of the sectors that produces the most waste. The data for this analysis was sourced from the Ministry of Environment and Forestry's comprehensive data collection. According to the source, as many as 2,897 manufacturing sector industries are waste producers. Meanwhile, the industry that produces the least waste is the energy and oil and gas mining industry. Practitioners, policymakers, and entrepreneurs must proactively assess and mitigate the environmental impact of their offerings.

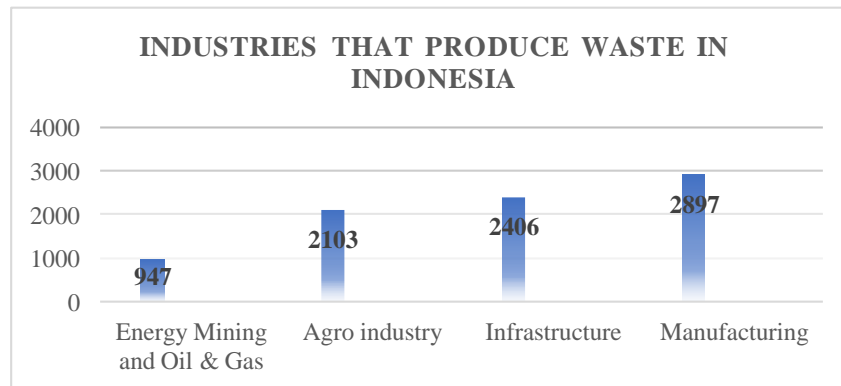


Figure 1. Waste Producing Industries in Indonesia

The pursuit of productivity by companies often leads to environmental degradation (Akbari, Nazarian, Foroudi, Amiri & Ezatabadipoor, 2021). Companies that ignore environmental aspects can be a cause of environmental degradation. This is because these companies do not pay attention to efficient use of natural resources and responsible waste disposal. This certainly requires immediate action from all stakeholders to mitigate the environmental impact arising from their industrial activities (Baah, Amponsah, Issau, Ofor, Acquah & Agyeman, 2021).

Companies can implement eco-efficiency practices in line with the growing trend of business that integrates environmental concerns. Eco-efficiency goes beyond green practices. It's a comprehensive strategy that optimizes operations, minimizes waste, and creates shared value for companies, investors, and the environment (Agustia, Sawarjuwono & Dianawati 2019). Previous research conducted by Daud, Meutia & Yuniarti (2023); Meutia, Ramadhani & Adam (2019) found that the financial performance of companies is positively influenced by eco-efficiency. Eco-efficiency can provide benefits for companies, both internally and externally. In the internal context, eco-efficiency can help companies to reduce production costs, which in turn will

increase the company's profits. From an external perspective, eco-efficiency can help companies to comply with environmental regulations, improve access to finance, and increase added value for the company.

To enhance business through innovative means, the corporate responsibility can be expressed through Corporate Social Responsibility (CSR) practices. The higher the level of transparency exhibited by a corporate through CSR disclosure, the more it can assist investors and creditors in decision-making (Agustia et al. 2019). Previous research conducted by Arrive, Feng, Yan & Chege (2019); Martinez, Madueno, Jorge & Sancho, (2017); Xu, Zeng & Chen (2018) indicates companies embracing CSR practices tend to see a positive impact on their financial performance. Furthermore, CSR practices are impactful and crucial for companies due to the increasing attention to the environment (Arrive, Feng, Yan & Chege., 2019).

This study, guided by the principles of the Natural Resource-based View (NRBV). This theory shines a light on three crucial concepts: pollution prevention, product responsibility, and sustainable development, all of which were investigated as potential independent variables (Hart & Dowell, 2011). Each of these concepts plays a role in driving corporate financial performance. Driven by the need for concrete evidence, this study investigates the empirical effects of eco-efficiency and CSR initiatives on the financial success of manufacturing companies. To ensure the findings are accurate, it also controls for potential confounding variables such as company size, leverage, and age.

1.2 Literature Reviews and Hypothesis Development

1.2.1 Natural Resource-based View Theory

RBV, with its attention to internal resources, lays the groundwork for NRBV's focus on natural resources, which focuses on the utilization of natural resources and sustainability aspects. This theory highlights the crucial role of natural resources in creating long-term competitive advantages for an organization (Hart & Dowell, 2011). Along with business development, environmental sustainability can be a differentiating factor that provides a competitive advantage for an organization or company. Hart & Dowell, (2011) find the study revealed that maximizing resource utilization might offer greater profit potential than solely focusing on pollution reduction. NRBV theory provides a valuable framework for researchers to assess corporate performance from an environmental, social, and economic perspective. Therefore, eco-efficiency and CSR can be in line with this theory.

1.2.2 Company Financial Performance

The main purpose of creating good financial performance is to be able to prosper the shareholders who have invested in the company. Corporate financial performance can refer to the evaluation of how far a company can achieve its financial goals (Daud et al. 2023). Profitability forms the lifeblood of any sustainable business. This study emphasizes the importance of return on assets (ROA) as a metric for measuring how effectively the company is utilizing its resources to achieve its business goals. By focusing on improving ROA, the company can ensure its financial stability and secure its future success. ROA serves as a compass, guiding us towards understanding how well a company uses its assets to navigate towards profit. It measures the ability to generate earnings based on the total value of what the company owns (Oduro et al. 2022). Climbing ROA levels tell a story of increasing profitability, fueled by the company's

effectiveness in utilizing its assets. It's a clear sign of financial strength. This phenomenon illustrates that the company is capable of managing each asset to generate profits.

1.2.3 Eco-efficiency

Embracing eco-efficiency empowers businesses to tread lighter on the planet while stepping towards sustainability. It's a win-win approach that reduces environmental impact and unlocks business benefits (Meutia et al. 2019). Eco-efficiency is an approach that assesses how efficiently a product or process uses natural resources and energy, and its environmental impact, from start to finish. Eco-efficiency can also be defined as a concept that combines environmental and economic aspects. Companies that implement eco-efficiency can reduce their environmental impact and improve their financial performance by minimizing their operational costs (Daud et al. 2023). Eco-efficiency practices focus on the company's goal of creating products that meet the needs of consumers and are beneficial to them with minimal environmental impact. Companies that ignore eco-efficiency practices will become increasingly inefficient in their production processes. This is because eco-efficiency can help companies use natural resources and energy more efficiently.

1.2.4 Corporate Social Responsibility

The rising tide of consumer preference for green options has propelled Corporate Social Responsibility (CSR) to the forefront of expert attention in recent years. According to Karassin & Bar-Haim., (2019), Corporate Social Responsibility (CSR) refers to a company's commitment to integrating ethical practices and responsibility towards stakeholders into its core strategies, decision-making processes, and actions, with the aim of generating positive societal outcomes. Driven by a deep concern for the environment, eco-entrepreneurs are the change makers of the business world, introducing sustainable practices into manufacturing and beyond (Wang & Bian, 2022). As environmental awareness increases, companies are increasingly being required to recognize environmental protection as part of their CSR. CSR practices in companies, if implemented in accordance with the company's objectives, also have the purpose of becoming long-term publicity for the company.

1.2.5 Hypothesis Development

The Natural Resource-Based View (NRBV) presents a compelling theoretical framework for establishing a link between environmentally responsible actions and enhanced corporate profitability. The eco-efficiency concept states that companies can achieve their economic and environmental goals simultaneously by effectively utilizing natural resources and energy, and reducing waste generation (Hart, 1995). Some previous research was conducted by Daud et al (2023); Meutia et al (2019); Rodríguez-García et al (2022) demonstrates a positive correlation between eco-efficiency practices and improved financial outcomes. His is not similar to the study conducted by Igbinoia & Agbadua (2023) which states that company financial performance is negatively influenced by environmental performance as measured by eco-efficiency.

Previous research suggests that eco-efficiency can have long-term benefits, such as energy savings, reduced environmental risk, or improved corporate reputation, which may not be immediately reflected in short-term financial statements (Daud et al., 2023). Given its potential to boost financial success, eco-efficiency takes center stage in the researcher's hypothesis,

formulated as follows:

Ha1: Eco-efficiency has a positive effect on the financial performance of manufacturing companies

In addition, corporate social responsibility (CSR) that focuses on environmental preservation also reflects the concept of the NRBV theory. The financial benefits of CSR are gaining traction in academic circles, with researchers exploring how minimizing operational harm to the environment can lead to improved profitability. Recent research has revealed that companies engaged in CSR practices can more easily access capital from investors who are concerned about environmental issues (Simmou et al. 2023; Waheed & Zhang, 2022; Wang & Bian, 2022). Therefore, companies can easily improve their financial performance.

Companies have long been practicing various forms of social and environmental responsibility with broader objectives. In this case, CSR is a manifestation of sensitivity and concern for the social, economic, environmental and quality-of-life needs of the community it operates within. Given its demonstrated impact on financial performance, CSR takes center stage as a key predictor in the study's proposed hypothesis, which states:

Ha2 : Corporate Social Responsibility has a positive effect on the financial performance of manufacturing companies.

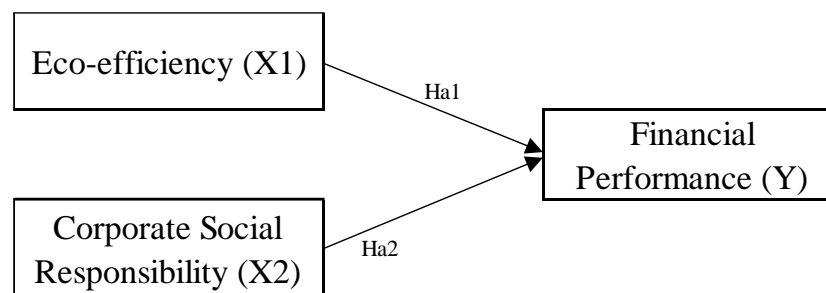


Figure 2. Framework for Research

2. Method

This study utilizes quantitative methods to rigorously test the hypothesis that both eco-efficient operations and proactive engagement in CSR initiatives can lead to improved financial performance for companies. Encompassing the entirety of the manufacturing sector listed on the Indonesia Stock Exchange, this study draws its data from all companies operating in this domain across a four-year period (2019-2022). To ensure robust analysis, the study's sample was carefully selected based on the availability of complete and reliable data on both eco-efficiency and corporate social responsibility. The sample used was 132 companies that met the sampling criteria. Therefore, the total observation was 528 during the period 2019-2022.

2.1 Measurement Model

Return on Assets

This study aims to understand the factors influencing a company's financial success, which we define as its Return on Asset (ROA). This metric is crucial for evaluating the effectiveness of

resource allocation and operational strategies. By monitoring this ratio, companies can identify areas for improvement and optimize their resource utilization to maximize profitability (Ramadhan et al. 2022). The chosen method for evaluating financial performance in this study is the Return on Asset (ROA) calculation, following the established formula based on the research of Duque et al. (2020); Ramadhan et al. (2022):

$$ROA = \frac{\text{Net income}}{\text{Total Asset}}$$

Eco-efficiency

Standing at the forefront of this study's independent variables is eco-efficiency, reflecting a company's dedication to boosting its operational effectiveness and maximizing output while minimizing its environmental footprint through reduced resource consumption, energy use, and waste generation. To quantify eco-efficiency, the researcher utilizes a reliable proxy measure developed in the research of Daud et al. (2023); Rodríguez-García et al. (2022) as follows:

$$EcoEff = \frac{\text{Tons of CO2 emissions per year}}{\text{Sales}}$$

Corporate Social Responsibility

The second independent variable in this study is Corporate Social Responsibility (CSR), which is the company's efforts to be responsible to the environment, society, and other stakeholders. To gauge a company's dedication to CSR, this research utilizes content analysis. This approach examines the amount of information the company publicly shares about its social responsibility initiatives, quantified by a specific ratio of disclosed information. This study draws upon the comprehensive framework of the GRI Standards, with its 79 specific indicators for CSR assessment. These indicators will be systematically compared with the information disclosed in each company's annual report to evaluate their level of social responsibility. The proxies used were adopted from research conducted by Yuliartanti & Handayani (2022), with the following calculations:

$$CSRI_j = \frac{\sum X_{ij}}{n_j}$$

2.2 Model Specification

To address potential biases and enhance the causal interpretation of the results, this study adopts a fixed-effect model, focusing on within-firm variations in eco-efficiency and CSR over time to assess their impact on company financial performance. The regression equation used is as follows:

$$ROA = \alpha + \beta_1 EcoEff + \beta_2 CSR + \beta_3 FSIZE + \beta_4 LEV + \beta_5 AGE + \varepsilon$$

Information:

ROA = Financial Performance

EcoEff = Eco-Efficiency

CSR = Corporate Social Responsibility

FSIZE = Company Size

LEV = Leverage

AGE = Company Age

α = Constant

β = Regression coefficient
 ε = Error

3. Result

This research delved into the data systematically, utilizing descriptive statistics to summarize key characteristics and then building upon those findings through a rigorous linear regression analysis. The linear regression analysis generated a range of coefficient values, unveiling the differing strengths of each independent variable in influencing the dependent variable (Igbinovia & Agbadua, 2023). The researcher used EViews 12 as a data processing program. Unveiling the data's characteristics was the first step, through descriptive statistical tests. Next, the analysis meticulously checked for potential biases via assumption tests. Model selection, meticulously comparing the Common Effect, Fixed Effect, and Random Effect models, then identified the optimal framework for investigation. Finally, hypothesis testing rigorously examined the proposed relationships. The following section showcases the descriptive statistical results:

Table 1 Descriptive Statistics of Variables

	ROA	EcoEff	CSR	Firm size	Lev	Firm Age
Min	0.871000	0.000000	0.329000	24.84700	0.067000	5.000000
Max	0.985000	401.1400	0.658000	33.65500	5.158000	93.00000
Mean	0.370210	9.606013	0.500277	28.81575	0.521604	40.82765
St.Dev	0.123102	36.18726	0.057199	1.569936	0.480746	14.43347
N	528	528	528	528	528	528

Source: Secondary data processed, 2024

Table 1 illustrates the estimated average values of financial performance with ROA in manufacturing companies from 2019 to 2022, amounting to 0.370210. This means that the average profitability-generating ability of the companies is 37.0%. Eco-efficiency has a higher average value than the average value of CSR. The average value of eco-efficiency is 9.606013 and the average value of CSR is 0.500277. Within the Indonesian manufacturing sector, our findings suggest that eco-efficiency emerges as a stronger driver of operational performance compared to corporate social responsibility. The analysis revealed an average company size of 28.81575, with the highest score of 33.65500 achieved by Astra International Tbk. Similarly, the average company age was 40.82765, with Multi Bintang Indonesia Tbk attaining the maximum score of 93.00000.

The following table summarizes the findings of the assumption tests for the employed model:

Table 2 Assumption Test

Multicollinearity Test			
Variables	Coefficient Variance	Uncentered VIF	Centered VIF
C	6.03E-04	1843.657	NA
ECOEFF	4.63E-02	26.65154	5.813542
CSR	5.45E-03	19.18712	6.236157
FSIZE	5.62E-04	457.034	1.419379
LEV	2.45E-06	2.473687	1.201812
FAGE	2.73E-07	8.092844	1.135146
ARCH Test			
F-statistic = 0.054		F-Probability (1.413)	0.761
Autocorrelation Test			
F-statistic = 0.562		F-Probability (2.159)	0.536

Source: Secondary data processed, 2024

Drawing upon the information presented in Table 2, we can be confident that multicollinearity isn't an issue, given that all VIF values fall below 10. This paves the way for further investigation through the ARCH test, which examines whether the independent variable impacts the residual variance in the regression. With a p-value greater than 0.05 from the test, we can safely conclude that the independent variable doesn't influence the residual variance in the regression. This suggests the absence of heteroskedasticity and reinforces the validity of our model. To ensure reliable results, we first utilized the Breusch-Godfrey Serial Correlation LM Test to check for autocorrelation. Fortunately, the test confirmed the absence of this issue, paving the way for the crucial step of selecting the most appropriate regression model for our study. The key outcomes of the regression model selection test are presented in full detail within the following table:

Table 3 Choosing a regression model

Uji Chow			
Effect Test	Statistic	d.f	Prob.
Cross-section F	23.247351	(73.19)	0.0000
Hausman Test			
Test summary	Chi-Sq.Statistic	Chi-Sq.d.f	Prop.
Cross-section random	6.347263	5	0.000

Source: Secondary data processed, 2024

To ensure the robust selection of the most appropriate regression model for this study, researcher utilized three well-established statistical tests: the Chow test for parameter stability, the Hausman test for consistency of estimators, and the Lagrange Multiplier test for model specification error. The Chow test specifically focuses on comparing the Common Effect Model and the Fixed Effect Model. A highly significant F-probability value of 0.0000, revealed by the Chow test, provides compelling evidence in favor of the Fixed Effect Model as the most suitable choice for this study. The Hausman test, designed to differentiate between the Fixed and Random Effect Models, proved instrumental in our model selection process. With a miniscule Chi-Square

probability value of 0.000, the test decisively points towards the Fixed Effect Model as the most statistically sound approach for our analysis. Based on the conclusive evidence from the Chow and Hausman tests, both pointing towards the Fixed Effect Model as the optimal choice, conducting the Lagrange Multiplier test becomes redundant. We therefore confidently proceed with the Fixed Effect Model for further analysis.

Hypothesis testing evaluates whether the observed relationship between independent and dependent variables could have arisen by chance, or if it provides statistically significant evidence that the independent variables influence the variation in the dependent variable (Igbinoia & Agbadua, 2023). An overview of the hypothesis testing findings for this study is provided in the table below:

Table 4 Results of Hypothesis Testing

Hypothesis	Variables	Dependent Variables	Coef.	Prob.	Notes
Independent					
H _{a1} (+)	ECOEFF	ROA	2.645764	0.0003	Positive effect
H _{a2} (+)	CSR	ROA	3.154326	0.0015	Positive effect
Control					
	Firm Size	ROA	0.055706	0.0131	Positive effect
	Leverage	ROA	0.070133	0.0428	Positive effect
	Firm Age	ROA	0.001643	0.0637	No effect
R-Square			0.564103		
Adjusted R-Square			0.402332		
F-statistic			3.699015		
Prob (F-statistic)			0.000000		

Source: Secondary data processed, 2024

An analysis of Table 6 underscores the joint influence of eco-efficiency and CSR on financial performance. The exceedingly low probability value of 0.000000 for the F-statistic, compared to the established 0.05 significance level, provides definitive evidence of this statistically significant relationship. The analysis reveals that the independent variables included in this study account for 40.23% of the variation in the dependent variable, as evidenced by an Adjusted R-square value of 0.4023. The remaining 59.77% constitutes unexplained variance, potentially attributable to factors not considered within the research framework.

The statistical analysis conducted in this study yields compelling evidence in favor of hypothesis Ha1, which postulates a statistically significant positive association between eco-efficiency and financial performance. Eco-efficiency exhibits a highly significant p-value of 0.0003 and a positive coefficient of 2.645764, exceeding the preset 5% significance level. Our statistical analysis provides robust evidence for a statistically significant positive association between eco-efficiency and projected financial performance, captured by return on assets (ROA). This positive association is further corroborated by the observed positive value of the regression coefficient, indicating a statistically robust and meaningful connection between the two variables. Strengthening the case for CSR, the analysis reveals a statistically significant positive

impact on financial performance. The p-value of 0.0015 and a positive coefficient of 3.154326 for CSR provide robust evidence at the 5% significance level, endorsing hypothesis Ha2. Turning to the control variables, both firm size and leverage reveal statistically significant positive relationships with ROA. The analysis conducted in this study reveals a clear distinction in the influence of different variables on ROA. Firm size and leverage stand out with statistically significant positive relationships with ROA, as indicated by their respective p-values of 0.0131 and 0.0428, both falling well within the established 5% significance level. In contrast, firm age, with a p-value of 0.0637, fails to reach the level of statistical significance, suggesting its negligible impact on ROA.

4. Discussion

4.1 The influence of Eco-efficiency on Financial Performance

Analyzing Table 4, we encounter the first key result, a statistically significant and positive association between eco-efficiency and company financial performance, as captured by ROA. The exceptionally low p-value of 0.0003, surpassing the 5% significance level, provides robust evidence for accepting hypothesis Ha1. This aligns consistently with the hypothesis originally proposed by Daud et al. (2023); Meutia et al. (2019) and consistent with the Natural Resource-based View theory. This theory assumes that rare, unique and valuable resources can create sustainable competitive advantages for companies (Hart & Dowell, 2011). Companies benefit from higher profits from low production costs and high competitive advantage (Vasileiou et al., 2022). In this regard, eco-efficiency can be considered a valuable resource, as companies implementing eco-efficiency practices can reduce operational costs, enhance resource utilization efficiency, minimize environmental impact, and respond to consumer demands, all of which can influence the financial performance of the company. The growing tide of environmental concern presents a strategic opportunity for companies. By adopting eco-efficient practices, they can not only cultivate a positive public image but also unlock potential financial gains, as evidenced by the findings of this research.

4.2 The influence of Corporate Social Responsibility on Financial Performance

An analysis of Table 4 indicates a robust positive association between a company's commitment to Corporate Social Responsibility (CSR) and its financial performance, as measured by return on assets (ROA). The p-value of 0.0015, well below the 5% threshold, leads to the acceptance of hypothesis Ha2. This finding corroborates Simmou et al. (2023); Waheed & Zhang, (2022); Wang & Bian, (2022)'s research and aligns with the Natural Resource-based View theory, suggesting that CSR activities can indeed act as a driver of improved financial performance. By prioritizing responsible resource management and integrating it into their CSR strategies, companies can not only contribute to environmental well-being but also secure a lasting market advantage, ultimately influencing their return on assets in a positive way. The alignment of this study's results with the NRBV framework underscores the critical role of strategic natural resource management in securing a sustainable competitive advantage. In the business world, CSR practices can be implemented through a company's strategy in choosing environmentally friendly raw materials as a sustainable production practice. Developing eco-friendly products fosters long-term company value by aligning with consumer preferences and environmental regulations, ultimately contributing to enhanced financial performance. Thus, the implementation

of CSR can provide significant benefits for companies, especially in terms of financial performance.

5. Conclusions and Suggestion

This study unveils compelling insights into the interplay between eco-efficiency, Corporate Social Responsibility (CSR), and company financial performance. The empirical evidence presented in this research provides compelling support for the substantial positive impact of eco-efficient practices on financial performance, thereby validating the theoretical propositions of the Natural Resource-based View. Companies implementing eco-efficiency practices can become more resilient to environmental regulatory changes and the rapid evolution of business trends that increasingly focus on environmental issues. The research findings indicate that companies implementing Corporate Social Responsibility tend to have better financial performance. Furthermore, this study has implications for stakeholders, including regulators, practitioners, companies, and academics. Specifically, this study can be beneficial for regulators and practitioners for policy making regarding the extent to which environmentally friendly practices will be adopted by companies. For academics, this study can be developed and expand relevant knowledge.

While this study does not examine other factors that may influence the financial performance of companies, future studies could explore a broader range of topics in this regard. The researcher only used ROA as a single measure of financial performance, which may be a limitation of this study. By adopting a reduced-scope approach, this study invites future researchers to delve deeper into specific, understudied factors impacting company financial performance, ultimately enriching our understanding of this complex landscape.

References

- Agustia, D., Sawarjuwono, T., & Dianawati, W. (2019). The mediating effect of environmental management accounting on green innovation - Firm value relationship. *International Journal of Energy Economics and Policy*, 9(2), 299–306. <https://doi.org/10.32479/ijeep.7438>
- Akbari, M., Nazarian, A., Foroudi, P., Seyyed Amiri, N., & Ezatabadipoor, E. (2021). How corporate social responsibility contributes to strengthening brand loyalty, hotel positioning and intention to revisit? *Current Issues in Tourism*, 24(13), 1897–1917. <https://doi.org/10.1080/13683500.2020.1800601>
- Arrive, T. J., Feng, M., Yan, Y., & Chege, S. M. (2019). The involvement of telecommunication industry in the road to corporate sustainability and corporate social responsibility commitment. *Corporate Social Responsibility and Environmental Management*, 26(1), 152–158. <https://doi.org/10.1002/csr.1667>
- Baah, C., Amponsah, K. T., Issau, K., Ofori, D., Acquah, I. S. K., & Agyeman, D. O. (2021). Examining the Interconnections Between Sustainable Logistics Practices, Environmental Reputation and Financial Performance: A Mediation Approach. *Vision*, 25(1), 47–64. <https://doi.org/10.1177/0972262920988805>
- Chen, Y. S., Lai, S. B., & Wen, C. T. (2006). The influence of green innovation performance on corporate advantage in Taiwan. *Journal of Business Ethics*, 67(4), 331–339. <https://doi.org/10.1007/s10551-006-9025-5>

- Daud, R., Meutia, I., & Yuniarti, E. (2023). Eco-Efficiency and Financial Performance: An Eco-Efficiency and Financial Performance: An Evidence from Indonesian Listed Company Evidence from Indonesian Listed Company. *Riset Akuntansi Dan Keuangan Indonesia*, 8(1). <http://journals.ums.ac.id/index.php/reaksi/index>
- Duque, E., Aguilera, J., Guerrero, J., & García, E. (2020). Does green innovation affect the financial performance of Multilatinas? The moderating role of ISO 14001 and R&D investment. *Business Strategy and the Environment*, 29(8), 3286–3302. <https://doi.org/10.1002/bse.2572>
- Hart, S. L. (1995). A Natural Resource-based View of The Firm. In *Managsment Review* (Vol. 20, Issue 4).
- Hart, S. L., & Dowell, G. (2011a). A natural-resource-based view of the firm: Fifteen years after. *Journal of Management*, 37(5), 1464–1479. <https://doi.org/10.1177/0149206310390219>
- Hart, S. L., & Dowell, G. (2011b). A natural-resource-based view of the firm: Fifteen years after. *Journal of Management*, 37(5), 1464–1479. <https://doi.org/10.1177/0149206310390219>
- Igbinovia, I. M., & Agbadua, B. O. (2023). Environmental, Social, and Governance (ESG) Reporting and Firm Value in Nigeria Manufacturing Firms: The Moderating Role of Firm Advantage. *Jurnal Dinamika Akuntansi Dan Bisnis*, 10(2), 149–162. <https://doi.org/10.24815/jdab.v10i2.30491>
- Karassin, O., & Bar-Haim, A. (2019). How Regulation Effects Corporate Social Responsibility: Corporate Environmental Performance under Different Regulatory Scenarios. In *World Political Science* (Vol. 15, Issue 1, pp. 25–53). De Gruyter. <https://doi.org/10.1515/wps-2019-0005>
- Martinez, D., Madueno, J. H., Jorge, M. L., & Sancho, M. P. L. (2017). The strategic nature of corporate social responsibility in SMEs: A multiple mediator analysis. *Industrial Management and Data Systems*, 117(1), 2–31. <https://doi.org/10.1108/IMDS-07-2015-0315>
- Meutia, I., Ramadhani, M., & Adam, M. (2019). Does Eco-Efficiency Improve Financial Performance of Manufacturing Companies in Indonesia? *Jurnal Dinamika Akuntansi Dan Bisnis*, 6(2), 137–150. <https://doi.org/10.24815/jdab.v6i2.13785>
- Oduro, S., Adhal Nguar, K. D., De Nisco, A., Alharthi, R. H. E., Maccario, G., & Bruno, L. (2022). Corporate social responsibility and SME performance: a meta-analysis. In *Marketing Intelligence and Planning* (Vol. 40, Issue 2, pp. 184–204). Emerald Group Holdings Ltd. <https://doi.org/10.1108/MIP-05-2021-0145>
- Ramadhan, P., Iranti, R., Dohan, D., Purnama, Y., & Riduan Nazir, W. (2022). COVID-19, Green Innovation and Their Impacts on Financial Performance. *E-Jurnal Akuntansi*, 32(12), 3658. <https://doi.org/10.24843/eja.2022.v32.i12.p13>
- Rodríguez-García, M. del P., Galindo-Manrique, A. F., Cortez-Alejandro, K. A., & Méndez-Sáenz, A. B. (2022). Eco-efficiency and financial performance in Latin American countries: An environmental intensity approach. *Research in International Business and Finance*, 59. <https://doi.org/10.1016/j.ribaf.2021.101547>
- Simmou, W., Govindan, K., Sameer, I., Hussainey, K., & Simmou, S. (2023). Doing good to be green and live clean! - Linking corporate social responsibility strategy, green innovation, and environmental performance: Evidence from Maldivian and Moroccan small and

- medium-sized enterprises. *Journal of Cleaner Production*, 384. <https://doi.org/10.1016/j.jclepro.2022.135265>
- Singh, S. K., Giudice, M. Del, Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological Forecasting and Social Change*, 150. <https://doi.org/10.1016/j.techfore.2019.119762>
- Vasileiou, E., Georgantzis, N., Attanasi, G., & Llerena, P. (2022). Green innovation and financial performance: A study on Italian firms. *Research Policy*, 51(6). <https://doi.org/10.1016/j.respol.2022.104530>
- Waheed, A., & Zhang, Q. (2022). Effect of CSR and Ethical Practices on Sustainable Competitive Performance: A Case of Emerging Markets from Stakeholder Theory Perspective. *Journal of Business Ethics*, 175(4), 837–855. <https://doi.org/10.1007/s10551-020-04679-y>
- Wang, X., & Bian, W. (2022). Analyzing the Role of Corporate Social Responsibility for Sustainable Environmental Performance: Mediating Roles of Environmental Strategy and Environmental Outcomes. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.906610>
- Xie, X., Huo, J., & Zou, H. (2019). Green process innovation, green product innovation, and corporate financial performance: A content analysis method. *Journal of Business Research*, 101, 697–706. <https://doi.org/10.1016/j.jbusres.2019.01.010>
- Xu, X., Zeng, S., & Chen, H. (2018). Signaling good by doing good: How does environmental corporate social responsibility affect international expansion? *Business Strategy and the Environment*, 27(7), 946–959. <https://doi.org/10.1002/bse.2044>
- Yuliantanti, A. R., & Handayani, R. S. (2022). The Influence of Disclosure of Corporate Social Responsibility (CSR) on Company Value with Investor's Attention as Intervening Variable (Empirical Study on Infrastructure Companies Listed on the Indonesia Stock Exchange 2018-2020). *Riset Akuntansi Dan Keuangan Indonesia*, 7(2). <http://journals.ums.ac.id/index.php/reaksi/index>