

GREEN GAINS: HOW ENVIRONMENTAL ACCOUNTING DRIVES FIRM VALUE IN ASEAN

Abraham Mulki Sulthon¹, Kiky Srirejeki^{2*}

¹⁻² Department of Accounting, Universitas Jenderal Soedirman, Purwokerto, Indonesia

*Email corresponding author: kiky.srirejeki@unsoed.ac.id

Abstract

Climate change poses significant threats to ASEAN economies, with the region ranking among the most vulnerable globally according to the Climate Economics Index. This study investigates how green accounting practices and environmental management systems influence firm value among publicly listed companies in ASEAN countries. Drawing on legitimacy theory and stakeholder theory, the research examines whether environmental transparency and management translate into financial benefits for companies operating in climate-vulnerable emerging markets. The study analyzes 23 sustainability-leading companies that were Asia Sustainability Reporting Awards finalists from 2021-2023, using panel data regression to examine relationships between specific environmental accounting dimensions and firm value measured by Tobin's Q. Green accounting is operationalized through three key dimensions aligned with Global Reporting Initiative standards: water usage efficiency, energy consumption management, and carbon emissions reduction. Results reveal important distinctions among environmental practices, with water management and carbon emissions reduction significantly enhancing firm value, while energy consumption and environmental management system implementation show no significant value effects. These findings suggest that investors in ASEAN markets reward concrete, measurable environmental actions over administrative compliance measures. The study demonstrates that not all environmental practices equally influence investor perceptions, challenging assumptions about uniform benefits of comprehensive environmental management. For corporate managers, the results emphasize prioritizing environmental initiatives with transparent outcomes and clear stakeholder benefits. This research provides the first empirical evidence on differential effects of green accounting dimensions in climate-vulnerable ASEAN markets, contributing valuable insights for sustainable business strategy in emerging economies facing environmental challenges.

Keywords: Green Accounting, Environmental Management System, Firm Value, ASEAN, Climate Change, Sustainability.

INTRODUCTION

In recent years, the global business landscape has seen a paradigm shift in how firm performance is evaluated. Beyond financial profitability, stakeholders now place significant importance on how corporations manage their environmental responsibilities (Halkos & Nomikos, 2021). This shift is particularly evident in the ASEAN region, which is among the most vulnerable areas to climate change impacts, such as rising temperatures, extreme weather, and sea level rise. Countries like Indonesia, the Philippines, and Vietnam face increasing pressure to address sustainability in both policy and practice.

One of the adverse impacts of environmental neglect by industrialized countries is climate change. According to findings presented in *The Economics of Climate Change: Impact for Asia*, published by the Swiss Re Group in 2021, climate change occurring in the Southeast Asian region in

recent years is projected to result in a decline in Gross Domestic Product (GDP) by the year 2048. The Southeast Asian economy is also predicted to be among the most vulnerable to physical risks associated with climate change. Four countries Indonesia, the Philippines, Thailand, and Vietnam have already experienced the effects of ongoing climate change (Fajar & Azhar, 2019). The following table presents the rankings of ASEAN countries included in the Climate Economic Index:

Table 1. Climate Economic Index		
Country	Ranking	Climate Economics Index
Singapore	39	30.2
Thailand	44	36.0
Philippine	46	37.3
Malaysia	47	38.3
Indonesia	48	39.2

Source: <https://www.swissre.com>

Table 1 shows the Climate Economics Index scores of several ASEAN countries that listed in the ranking. Climate Economics Index contributed to measure how unmitigated climate change could impact 48 of the world's economies (90% of global GDP). with rankings based on resilience to climate change. A higher score signifies greater vulnerability of a country to the impacts of climate change. it is evident that nearly all ASEAN countries occupy the lower ranks in the Climate Economics Index, risking a high level of vulnerability to climate change across the region.

In this case, to mitigate the effect of climate change, it is essential for companies to adopt proactive environmental strategies, such as implementing environmental or green accounting and environmental management systems practices. These practices enable firms to monitor and reduce their ecological footprint, enhance transparency in sustainability reporting, and align with global climate goals. From an accounting perspective, the implementation of environmental accounting is crucial not only for recognizing and disclosing environmental costs but also for integrating sustainability considerations into strategic decision-making processes. It reflects the evolving role of accounting in promoting corporate accountability, long-term value creation, and stakeholder trust. Therefore, conducting this research is vital to understanding how such initiatives can contribute not only to environmental preservations but also strengthening firm value.

The main objective of this study is to investigate the extent to which environmental accounting practices contribute to firm value in ASEAN countries. Specifically, it focuses on the impact of water usage efficiency, energy consumption, and carbon emission disclosures, along with the adoption of Environmental Management Systems (EMS), as measurable dimensions of a company's environmental performance. By concentrating on firms recognized in the Asia Sustainability Reporting Awards (ASRA), this research seeks to provide region-specific insights into the financial implications of environmental responsibility. The contribution of this study is twofold: theoretically, it enriches the limited empirical literature linking environmental accounting to firm valuation in emerging Southeast Asian markets; practically, it provides decision-makers, especially corporate managers and investors, with evidence-based considerations on the strategic importance of sustainability initiatives in enhancing long-term firm value.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

Legitimacy theory, rooted in organizational sociology, posits that organizations operate within socially constructed systems of norms, values, and beliefs, requiring them to appear legitimate to ensure continued support from society (Suchman, 1995). In the environmental context, companies face increasing pressure to demonstrate responsible environmental stewardship to maintain their social license to operate. Environmental accounting and reporting serve as mechanisms through

which firms can signal their commitment to environmental responsibility, thereby enhancing their legitimacy among stakeholders. This theoretical lens suggests that companies adopting comprehensive environmental accounting practices should experience improved stakeholder relationships and enhanced firm value through reduced regulatory risks and improved reputation.

Complementing legitimacy theory, stakeholder theory extends beyond traditional shareholder primacy by recognizing that firms must create value for a broader range of stakeholders, including employees, customers, communities, and environmental groups (Freeman, 1984). According to Deegan (2014), environmental performance directly affects multiple stakeholder groups, making environmental accounting a critical tool for stakeholder management. Companies that effectively measure, manage, and communicate their environmental impacts are better positioned to meet diverse stakeholder expectations, leading to improved reputation, reduced operational risks, and enhanced long-term financial performance. This perspective is particularly relevant in ASEAN countries, where environmental degradation directly impacts local communities and economic development.

The empirical literature examining the relationship between environmental accounting and firm value presents evolving but mixed evidence. Al-Dhaimesh (2020) found a positive association between green accounting practices and economic value added among Qatar Stock Exchange companies, suggesting that transparent environmental reporting enhances investor confidence and creates measurable financial benefits. This finding aligns with Sukmadilaga et al. (2023), who demonstrated that green accounting significantly influences firm value across ASEAN countries, indicating regional relevance of these practices in emerging markets characterized by rapid industrialization and environmental challenges.

However, the relationship appears complex and context-dependent. Mooneeapen et al. (2022) found that the influence of environmental performance on firm value varies significantly based on country-level governance environments, suggesting that institutional factors moderate this relationship. This finding is particularly relevant for ASEAN countries, which exhibit diverse regulatory frameworks, institutional development levels, and environmental enforcement capabilities. The heterogeneity within the region suggests that environmental accounting's value relevance may depend on local institutional contexts and stakeholder expectations.

Recent studies indicate that specific environmental dimensions may have differential impacts on firm value, challenging the assumption that all environmental practices equally influence investor perceptions. Ng and Rezaee (2015) found that carbon disclosure quality positively affects firm valuation, particularly as climate-related regulations expand globally. Hassan and Romilly (2018) demonstrated that water management practices are increasingly valued by investors, especially in water-stressed regions where resource scarcity poses operational risks. These studies suggest that different environmental accounting dimensions may signal varying levels of management competency, risk mitigation capabilities, and alignment with stakeholder expectations.

Water scarcity is emerging as a critical business risk, particularly in Southeast Asia, where competing demands from agriculture, industry, and growing populations strain available water resources. Companies demonstrating efficient water usage signal effective resource management and reduced operational risks, particularly important given the Climate Economics Index rankings showing ASEAN countries' high vulnerability to climate change impacts. Barton and Fields (2013) found that firms with superior water management practices experience lower volatility in operating performance during drought periods. From a stakeholder theory perspective, efficient water usage demonstrates corporate responsibility toward local communities and environmental preservation, potentially enhancing stakeholder relationships and firm reputation. Given these considerations, water consumption efficiency should positively influence firm value as investors increasingly recognize water-related risks and management capabilities.

Energy consumption represents both an operational cost and environmental impact indicator, though the literature presents mixed findings regarding energy management's impact on firm value.

While Hart and Ahuja (1996) suggest that energy efficiency improvements reduce operational costs and enhance profitability, King and Lenox (2001) found that energy-related investments may not immediately translate into market value due to implementation costs and technological uncertainties. The relationship may depend on energy source diversity, efficiency improvements, and investor understanding of energy management strategies. However, in emerging markets where energy costs represent significant operational expenses, effective energy management should signal managerial competency and cost control capabilities, suggesting a positive relationship with firm value.

Carbon emissions management has gained prominence due to expanding climate change regulations and growing investor focus on ESG factors. Studies consistently show that companies with effective carbon management strategies experience premium valuations as climate-related financial disclosure requirements increase globally. Matsumura et al. (2014) and Lee et al. (2015) demonstrated positive associations between carbon management and firm value, with the relationship strengthening as carbon pricing mechanisms expand. From a legitimacy theory perspective, carbon emissions disclosure demonstrates alignment with global climate goals and regulatory expectations, potentially reducing future compliance costs and regulatory risks.

Environmental Management Systems, particularly ISO 14001 certification, represent systematic approaches to environmental management that should theoretically enhance organizational performance. Voinea et al. (2020) found positive associations between EMS implementation and both environmental and financial performance in emerging economies, suggesting that systematic environmental management creates value through improved operational efficiency and risk reduction. However, other studies present mixed evidence, with Johnstone and Labonne (2009) suggesting that EMS benefits may take time to materialize and depend heavily on implementation quality rather than mere certification. The mixed findings may reflect differences between ceremonial adoption and substantive implementation, where companies may pursue ISO 14001 certification for legitimacy purposes without fully integrating environmental considerations into strategic decision-making (Christmann & Taylor, 2001).

Building on this theoretical framework and empirical evidence, this study proposes that water consumption efficiency has a positive significant effect on firm value (H_{1a}), as efficient water management signals operational competency, risk mitigation, and stakeholder responsibility in increasingly water-stressed ASEAN countries. Similarly, energy consumption efficiency should have a positive significant effect on firm value (H_{1b}), as energy management demonstrates cost control capabilities and environmental responsibility, particularly relevant in emerging markets with high energy costs. Carbon emissions management is hypothesized to have a positive significant effect on firm value (H_{1c}), reflecting alignment with global climate goals and anticipation of expanding carbon pricing mechanisms. The following hypotheses are proposed:

H1a: Water consumption efficiency has a positive significant effect on firm value

H1b: Energy consumption efficiency has a positive significant effect on firm value

H1c: Carbon emissions management has a positive significant effect on firm value

ISO 14001 certification signals systematic environmental management and commitment to continuous improvement. While benefits may not be immediately apparent, EMS implementation should enhance firm value through improved operational efficiency, reduced environmental risks, and enhanced stakeholder confidence. According to legitimacy theory, EMS certification provides external validation of environmental commitment, potentially improving access to markets and capital.

H2: Environmental management system implementation has a positive significant effect on firm value

RESEARCH METHODS

This research employs a quantitative design to investigate the relationship between environmental accounting practices and firm value among public companies in ASEAN countries. The study focuses on companies that were finalists in the Asia Sustainability Reporting Awards (ASRA) from 2021 to 2023, as these companies demonstrate high standards in sustainability reporting and are likely to have comprehensive environmental accounting systems.

The target population consists of 43 ASEAN-based companies that were ASRA finalists in 2021. From this population, 23 companies were selected using purposive sampling based on specific criteria to ensure data quality and analytical validity. The sample selection process is detailed in Table 2 below.

Table 2. Sample Selection

No	Criteria	Total
1	ASRA 2021 finalist companies in ASEAN	43
2	Companies that are not listed on the stock exchange (i.e., private companies).	(13)
3	Complete financial report data is unavailable based on the measurement requirements.	(5)
4	Outlier companies were categorized based on the results of the outlier test	(2)
Total Observation (23x3)		69

Source: Authors' own work

The systematic exclusion process removes private companies due to unavailable stock market data, companies with incomplete financial information, and statistical outliers identified through boxplot analysis. This results in 69 firm-year observations over the three-year period, providing sufficient data for robust panel data analysis.

Data collection utilizes secondary sources, specifically audited annual reports and sustainability reports published on companies' official websites. Content analysis serves as the primary data extraction technique, ensuring systematic and consistent measurement across all observations. This approach enhances data reliability while avoiding potential response bias associated with primary data collection.

The analytical framework employs panel data regression analysis, which is appropriate for the dataset structure combining cross-sectional companies and time-series observations. The analysis begins with descriptive statistics, followed by model selection tests including Chow test, Hausman test, and Lagrange Multiplier test to determine the most suitable model specification. Classical assumption tests for normality, multicollinearity, heteroskedasticity, and autocorrelation are conducted to ensure regression validity.

Variable definitions and measurement approaches are presented in Table 3. The dependent variable, firm value, is measured using Tobin's Q ratio, which captures both current market performance and future growth expectations. Environmental accounting practices are operationalized through three dimensions: water consumption, energy consumption, and carbon emissions, all measured in natural logarithm form to address potential skewness. Environmental Management System is measured using an index based on ISO 14001 certification and disclosed environmental practices.

Control variables include Return on Equity (ROE) to account for profitability differences and firm size measured by number of employees to control for organizational scale effects. These controls help isolate the specific impact of environmental accounting practices on firm value.

The regression model specification follows the form:

$$\text{Firm Value} = \alpha + \beta_1(\text{Water Consumption}) + \beta_2(\text{Energy Consumption}) + \beta_3(\text{Carbon Emissions}) + \beta_4(\text{Environmental Management System}) + \beta_5(\text{Return on Equity}) + \beta_6(\text{Firm Size}) + \varepsilon.$$

The Random Effects Model (REM) is selected through Generalized Least Squares (GLS) estimation based on model selection test results. Statistical significance is evaluated at the 5% level, with both coefficient magnitudes and significance levels reported to assess economic and statistical importance of the relationships.

Table 3. Operating Variables

Variable	Measurement
Firm Value	Tobin's Q = $\frac{\text{Total Market Value of Firm}}{\text{Total Asset Value of Firm}}$
Water Consumption	Value of water consumption used by companies
Energy Consumption	Value of energy consumption used by companies
Carbon Emissions	Total value of carbon emission expenditure of the company from scope 1 and scope 2
Environmental Management System	Key Performance Indicator of ISO 14001
Return on Equity	ROE = $\frac{\text{Earning after Interest and Tax}}{\text{Average Total Equity}}$
Firm Size	The number of permanent employees and contractors registered or working in the company at the end of a specific reporting period.

RESULTS AND DISCUSSION

Preliminary analysis and data quality

This study employs boxplot analysis to identify potential outliers that could distort regression results. The analysis reveals that PT Impack Pratama Industri Tbk and Frontken Corporation Berhad exhibit firm value measurements significantly different from other observations, with values falling outside the interquartile range boundaries. These companies are excluded from the final analysis to ensure robust statistical inference and prevent extreme values from influencing the overall findings.

Table 4 presents descriptive statistics for all variables included in the analysis. The 69 observations represent a balanced panel dataset covering 23 companies over three years. Firm value, measured by Tobin's Q, ranges from 0.514 to 2.049 with a mean of 1.054, indicating that most companies in the sample are valued close to their book value, which is typical for emerging market firms. The standard deviation of 0.299 suggests moderate variation in market valuations across the sample.

Table 4. Descriptive Statistics

	Minimum	Maximum	Mean	Std. Dev.
Firm Value	0.514	2.049	1.054	0.299
Water Consumption	8.816	19.141	13.401	2.720
Energy Consumption	9.078	20.590	13.788	3.174
Carbon Emissions	6.794	16.399	11.672	2.674
Environmental Management System	0.625	1.000	0.848	0.111
Control Variable:				
<i>Return on Equity</i>	-10.466	1.167	-0.078	1.293
Firm Size	88	69,921	9,998.55	14,786.678

The environmental accounting variables show substantial variation across the sample. Water consumption (logarithmic scale) ranges from 8.816 to 19.141, suggesting significant diversity in water usage patterns among ASEAN companies. Similarly, energy consumption varies from 9.078 to 20.590, reflecting different operational scales and energy management approaches. Carbon emissions range from 6.794 to 16.399, indicating varying environmental footprints across the sample companies. The Environmental Management System index shows relatively high implementation levels, with a mean of 0.848, suggesting that most ASRA finalist companies have adopted systematic environmental management practices.

The control variables reveal interesting sample characteristics. Return on Equity shows a negative mean (-0.078), reflecting the challenging economic conditions during the observation period, which included the COVID-19 pandemic recovery phase. The wide range of firm sizes (88 to 69,921 employees) demonstrates the diversity of companies included in the analysis, from mid-sized enterprises to large multinational corporations.

Regression analysis results

Panel data model selection tests indicate that the Random Effects Model (REM) using Generalized Least Squares (GLS) is most appropriate for this dataset. The Hausman test fails to reject the null hypothesis of no systematic differences between fixed and random effects estimators, supporting the use of REM. This specification allows for time-invariant unobserved heterogeneity while maintaining efficiency in coefficient estimation.

Table 5. Hypothesis Testing

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constanta	-0.198	0.480	-0.412	0.682
Water Consumption	0.041	0.018	2.269	0.027
Energy Consumption	-0.043	0.026	-1.645	0.105
Carbon Emissions	0.082	0.036	2.304	0.025
Environmental Management System	0.470	0.433	1.086	0.282
Return on Equity	-0.003	0.020	-0.149	0.882
Firm Size	-0.007	0.043	-0.167	0.868
Adjusted R Square	0.150			
F-Statistic	2.992			
Prob(F-Statistic)	0.012			

Table 5 presents the main regression results examining the relationship between environmental accounting practices and firm value. The model explains 15% of the variation in firm value (Adjusted R-squared = 0.150), which is reasonable for cross-sectional firm value studies,

particularly in emerging markets where institutional and market factors contribute significant unexplained variation. The F-statistic of 2.992 ($p = 0.012$) confirms overall model significance.

Water consumption and firm value

The results provide strong support for H_{1a} , showing that water consumption efficiency significantly enhances firm value ($\beta = 0.041$, $t = 2.269$, $p = 0.027$). This positive relationship suggests that a one-unit improvement in water usage efficiency (on the logarithmic scale) is associated with a 0.041 increase in Tobin's Q, representing approximately a 4% increase in firm valuation. This finding aligns with stakeholder theory, which predicts that meeting stakeholder expectations regarding environmental responsibility generates positive responses that enhance corporate reputation and long-term sustainability.

The economic significance of this relationship is noteworthy given the increasing water stress across ASEAN countries, as highlighted in the Climate Economics Index rankings. Investors appear to recognize water management as a critical operational capability, particularly relevant for companies operating in regions vulnerable to climate change impacts. This finding supports previous research by Al-Dhaimesh (2020) and Sukmadilaga et al. (2023), who found significant positive effects of green accounting practices on firm value. The result suggests that transparent water usage reporting and efficient water management serve as signals of managerial competency and risk mitigation capabilities that investors value.

Energy consumption and firm value

Contrary to H_{1b} , energy consumption shows no significant effect on firm value ($\beta = -0.043$, $t = -1.645$, $p = 0.105$). The negative coefficient, while not statistically significant, suggests that higher energy consumption may actually be associated with lower firm valuations. This counterintuitive finding may reflect several underlying factors. First, energy consumption alone may not adequately capture energy efficiency or management quality without considering energy intensity relative to output or revenue. Second, investors may focus more on energy source diversity and renewable energy adoption rather than absolute consumption levels.

This result aligns with Mooneeapen et al. (2022), who found that not all environmental indicators produce direct financial impacts, particularly when not accompanied by transparent communication about energy management strategies. The insignificant relationship may also reflect the complexity of energy management in emerging markets, where companies face trade-offs between energy efficiency investments and immediate operational demands. Future research should consider more nuanced energy efficiency measures, such as energy intensity ratios or renewable energy proportions, to better capture the value-relevant aspects of energy management.

Carbon emissions and firm value

The results strongly support H_{1c} , demonstrating that effective carbon emissions management significantly enhances firm value ($\beta = 0.082$, $t = 2.304$, $p = 0.025$). This positive relationship indicates that a one-unit improvement in carbon management (representing reduced emissions on the logarithmic scale) is associated with a 0.082 increase in Tobin's Q, representing approximately an 8% increase in firm valuation. This represents the strongest economic impact among the environmental accounting dimensions examined.

This finding demonstrates strong alignment with both legitimacy theory and stakeholder theory. From a legitimacy perspective, effective carbon management signals alignment with global climate goals and preparation for expanding carbon pricing mechanisms. From a stakeholder perspective, carbon emissions disclosure and management meet the expectations of environmentally conscious investors, regulators, and customers. The significant positive effect supports previous research by Al-Dhaimesh (2020) and reflects the growing importance of climate-related financial disclosure in investor decision-making.

The economic magnitude of this relationship suggests that carbon management represents a substantial value creation opportunity for ASEAN companies. As carbon pricing mechanisms expand globally and climate-related regulations strengthen, companies demonstrating proactive carbon management are likely positioned to avoid future compliance costs and capture competitive advantages in increasingly environmentally conscious markets.

Environmental management systems and firm value

The results do not support H_2 , as Environmental Management System implementation shows no significant effect on firm value ($\beta = 0.470$, $t = 1.086$, $p = 0.282$). While the positive coefficient suggests a directional relationship consistent with theoretical expectations, the lack of statistical significance indicates that EMS implementation alone does not translate into measurable value creation within the observation period.

This finding contradicts legitimacy theory predictions that adopting international environmental standards should enhance corporate legitimacy and stakeholder acceptance. However, several explanations may account for this result. First, the relatively short observation period (2021-2023) may be insufficient to capture the long-term benefits of EMS implementation, which typically require time to generate operational improvements and stakeholder recognition. As noted by Wicaksono (2024), EMS benefits often materialize over extended periods as organizations develop environmental capabilities and stakeholder relationships.

Second, the measurement approach, focusing primarily on ISO 14001 certification, may not fully capture the quality or depth of EMS implementation. Companies may pursue certification for legitimacy purposes without substantively integrating environmental considerations into strategic decision-making processes, limiting the financial benefits. This aligns with Christmann and Taylor (2001), who distinguished between ceremonial adoption and substantive implementation of environmental management practices.

Third, investor attention in emerging markets may remain focused primarily on traditional financial indicators, limiting the valuation impact of non-financial disclosures such as EMS. As suggested by Septianty and Darsono (2024), the market's ability to process and value environmental information may be still developing in ASEAN countries, where institutional investors and ESG-focused funds represent smaller market segments compared to developed markets.

Control variables and model interpretation

Neither control variable shows significant effects on firm value. Return on Equity ($\beta = -0.003$, $p = 0.882$) demonstrates no significant relationship, which may reflect the challenging economic conditions during the observation period. Firm size ($\beta = -0.007$, $p = 0.868$) also shows no significant effect, suggesting that organizational scale does not significantly influence market valuations within this sample of sustainability-focused companies.

The model's adjusted R-squared of 15% indicates that environmental accounting variables explain a meaningful but limited portion of firm value variation. This is consistent with finance literature recognizing that firm valuations depend on multiple factors including market conditions, industry dynamics, competitive positioning, and macroeconomic factors beyond the scope of this study.

CONCLUSION

This study provides empirical evidence on the relationship between green accounting practices, environmental management systems, and firm value among sustainability-leading companies in ASEAN countries. Using panel data from 23 ASRA finalist companies over the period 2021-2023, the research reveals important insights about how different environmental accounting

dimensions influence investor perceptions and firm valuations in emerging markets characterized by high climate vulnerability.

The findings demonstrate that environmental accounting practices have differential effects on firm value, supporting a nuanced view of the green accounting-firm value relationship. Water consumption efficiency and carbon emissions management show significant positive effects on firm value, with carbon management demonstrating the strongest economic impact (8% increase in firm valuation per unit improvement). These results strongly support both stakeholder theory and legitimacy theory, indicating that transparent and measurable environmental actions enhance corporate reputation and stakeholder relationships, ultimately translating into higher market valuations.

However, energy consumption and environmental management system implementation show no significant effects on firm value within the observation period. These findings suggest that not all environmental practices equally influence investor perceptions, challenging the assumption that comprehensive environmental management automatically translates into financial benefits. The results indicate that stakeholder theory's applicability may depend on the specific environmental dimension, measurement approach, and time horizon considered.

The findings offer clear strategic guidance for corporate managers in ASEAN countries. Companies should prioritize environmental initiatives that demonstrate concrete, measurable outcomes, particularly in water conservation and carbon emission reduction. Rather than pursuing environmental management for compliance purposes alone, firms should adopt a strategic approach that emphasizes transparency, measurability, and stakeholder communication. Water management deserves particular attention given the increasing water stress across ASEAN countries and the demonstrated positive relationship with firm value.

The insignificant effect of environmental management systems suggests that merely obtaining ISO 14001 certification is insufficient for value creation. Companies should focus on demonstrating the tangible outcomes of their environmental management efforts through comprehensive reporting that clearly communicates environmental performance improvements and their business implications. This finding emphasizes the importance of substance over form in environmental management, requiring companies to move beyond ceremonial adoption toward substantive implementation of environmental practices.

Corporate communication strategies should emphasize environmental dimensions that resonate with investors and stakeholders. The significant effects of water and carbon management indicate that these areas represent valuable opportunities for demonstrating environmental leadership and operational excellence. Companies should invest in systems and capabilities that enable accurate measurement, continuous improvement, and transparent reporting of these environmental dimensions.

For investors, the results indicate that environmental accounting information provides valuable signals about management quality, operational efficiency, and future risk mitigation capabilities. However, investors should adopt a discriminating approach, focusing on environmental dimensions with demonstrated value relevance rather than assuming all environmental practices equally enhance firm value. The findings suggest that water and carbon management metrics deserve particular attention in investment analysis and valuation models.

The results also highlight the growing importance of environmental factors in emerging market valuations. As climate-related regulations expand and stakeholder expectations evolve, environmental accounting information is likely to become increasingly value-relevant. Investors should develop capabilities to analyze and integrate environmental performance data into their decision-making processes, particularly for companies operating in climate-vulnerable regions like ASEAN.

This study has several limitations that should be considered. First, the three-year observation period may be too short to capture the full benefits of environmental management practices,

especially for environmental management systems that typically require longer periods to show results. Second, the sample focuses only on sustainability award finalists, which may not represent typical ASEAN companies and could limit how broadly these findings apply. Third, the model explains only 15% of firm value variation, suggesting that many other important factors affecting company valuations were not included in this study. Finally, environmental management systems were measured primarily through ISO 14001 certification, which may not fully capture the quality or effectiveness of a company's environmental management practices.

Future studies should address these limitations in several ways. Researchers should extend the study period to at least five years to better understand long-term effects of environmental practices. Including a broader sample of companies beyond award finalists would help determine if these findings apply to all ASEAN companies. Future research should also develop better ways to measure environmental management systems beyond just certification status, perhaps including measures of implementation quality and business integration. Additionally, studies examining individual ASEAN countries could reveal how different regulatory environments and economic conditions affect the relationship between environmental accounting and firm value. Finally, research incorporating other sustainability factors like social and governance practices could provide a more complete picture of how environmental management fits within broader corporate sustainability strategies.

In conclusion, this study demonstrates that environmental accounting practices can enhance firm value in ASEAN countries, but the effects vary significantly across different environmental dimensions. The findings underscore the importance of strategic, measurable, and transparent approaches to environmental management while highlighting the need for continued research to understand the complex relationships between environmental performance and financial outcomes in emerging market contexts.

BIBLIOGRAPHY

- Al-Dhaimesh, O. H. (2020). Green accounting practices and economic value added: An applied study on companies listed on the Qatar stock exchange. *International Journal of Energy Economics and Policy*, 10(6). <https://doi.org/10.32479/ijeep.10199>
- Brigham, F. E., & Houston. (2011). Dasar-dasar Manajemen Keuangan Terjemahan. In *Jakarta: Salemba Empat*. (10th ed.). Salemba Empat.
- Deegan, C. M. (2014). Financial Accounting Theory. In *North Ryde, N.S.W. McGraw-Hill Education (Australia) Pty Ltd* (4th ed.). McGraw-Hill Education Australia.
- Erlangga, C. M., Fauzi, A., & Sumiati, A. (2021). Penerapan Green Accounting dan Corporate Social Responsibility Disclosure Terhadap Nilai Perusahaan Melalui Profitabilitas. *Akuntabilitas*, 14(1), 61–78. <https://doi.org/10.15408/akt.v14i1.20749>
- Halkos, G., & Nomikos, S. (2021). Corporate social responsibility: Trends in global reporting initiative standards. *Economic Analysis and Policy*, 69, 106–117. <https://doi.org/10.1016/j.eap.2020.11.008>
- Husni, M., Wardani, R., Pagalung, G., & Ryketeng, M. (2022). Analisis Penerapan Akuntansi Lingkungan pada Rumah Sakit X di Masa Pandemi. *JIMAT (Jurnal Ilmiah Mahasiswa Akuntansi) Undiksha*, 13(02). <https://doi.org/https://doi.org/10.23887/jimat.v13i02.41878>
- Mooneeapen, O., Abhayawansa, S., & Mamode Khan, N. (2022). The influence of the country governance environment on corporate environmental, social and governance (ESG) performance. *Sustainability Accounting, Management and Policy Journal*, 13(4), 953–985. <https://doi.org/10.1108/SAMPJ-07-2021-0298>
- Munawir. (2020). Analisis Laporan Keuangan. In *Liberty*. Liberty.
- Sartono, A. (2015). Manajemen Keuangan Teori dan Aplikasi. In *Revolusi Industri 4.0: Desain Perkembangan Transaksi dan Sistem Akuntansi Keuangan* (4th ed.). BPFE.

- Septianty, Y. R., & Darsono, D. (2024). Pengaruh Tata Kelola Perusahaan, Kinerja Lingkungan, Kebijakan Dividen, dan Kinerja Keuangan terhadap Nilai Perusahaan. *Diponegoro Journal of Accounting*, 13, 1–14.
- Suchman, M. C. (1995). Managing Legitimacy: Strategic and Institutional Approaches. *Academy of Management Review*, 20(3), 571. <https://doi.org/10.5465/amr.1995.9508080331>
- Sujoko, & Ugy, S. (2009). Pengaruh struktur kepemilikan saham, struktur modal, faktor intern dan faktor ekstern terhadap nilai perusahaan. *Jurnal Manajemen Dan Kewirausahaan*, 9(1), 41–48.
- Sukmadilaga, C., Winarningsih, S., Yudianto, I., Lestari, T. U., & Ghani, E. K. (2023). Does Green Accounting Affect Firm Value? Evidence from ASEAN Countries. *International Journal of Energy Economics and Policy*, 13(2), 509–515. <https://doi.org/10.32479/ijeep.14071>
- Syahyunan. (2015). Manajemen Keuangan. In *Book* (2nd ed., Vol. 7, Issue 2). USU Press.
- Voinea, C. L., Hoogenberg, B.-J., Fratostiteanu, C., & Bin Azam Hashmi, H. (2020). The Relation between Environmental Management Systems and Environmental and Financial Performance in Emerging Economies. *Sustainability*, 12(13), 1–21. <https://doi.org/10.3390/su12135309>