American Journal of Humanities and Social Sciences Research (AJHSSR)
e-ISSN : 2378-703X
Volume-09, Issue-11, pp-55-62
www.ajhssr.com
Research Paper Open Access

The Influence of Green Competitive Advantage and Green Intellectual Capital on Sustainable Performance with Environmental Management Accounting as A Mediating Variable in Palm Oil Companies in Kutai Kartanegara Regency

Paulus Adan Lasau[1], Cornelius Rante Langi[2], Muhammad Ikbal[3]
[1,2,3](Master of Accounting Program, Faculty of Economics and Business, Mulawarman University, Indonesia)

ABSTRACT: This study aims to analyze the influence of green competitive advantage and green intellectual capital on sustainable performance through the mediating role of environmental management accounting in palm oil companies located in Kutai Kartanegara Regency. This research uses a quantitative approach with a survey method, where data were collected through questionnaires distributed to 110 respondents consisting of company managers and directors. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS- SEM) with the help of SmartPLS 4 software. The results reveal that green competitive advantage significantly influences environmental management accounting but does not directly affect sustainable performance. Conversely, green intellectual capital has a significant effect on sustainable performance but does not significantly influence environmental management accounting. Furthermore, environmental management accounting significantly affects sustainable performance and mediates the relationship between green competitive advantage and sustainable performance. These findings provide theoretical implications on the importance of integrating green strategies with environmental information systems and offer managerial implications for improving the effectiveness of sustainability policies in the plantation sector.

KEYWORDS: *Green Competitive Advantage, Green Intellectual Capital, Environmental Management Accounting, Sustainable Performance, Palm Oil, Kutai Kartanegara.*

I. INTRODUCTION

The current development of the global economy is inextricably linked to the issue of sustainability. Growing public and stakeholder awareness of the importance of environmental protection is compelling companies to integrate sustainability principles into their business strategies. In Indonesia, as one of the world's largest palm oil producers, the industry faces significant challenges, including pressure from domestic and international regulations, global market demands for environmentally friendly products, and criticism regarding the negative environmental and social impacts of its operations. Kutai Kartanegara Regency, as a major palm oil- producing region, is at the forefront of these challenges, facing issues such as deforestation, ecosystem damage, and carbon emissions. This context presses local companies to adopt more sustainable business practices.

In accounting, Environmental Management Accounting (EMA) emerges as a strategic tool enabling companies to integrate environmental data into their decision-making processes. Sustainability can be fostered through supporting concepts like Green Competitive Advantage (GCA), which involves building a competitive position based on green innovation and operational efficiency, and Green Intellectual Capital (GIC), which represents the company's intangible assets (knowledge, technology, relationships) that support sustainability. GCA and GIC, as strategic resources, are expected to drive the adoption of EMA, which in turn supports the enhancement of Sustainable Performance (SP).

However, previous empirical research shows a gap. While some studies (e.g., Saputra et al., 2023; Noor & Bano, 2023) confirm that EMA mediates the relationship between green strategies and sustainable performance, other studies (e.g., Jiao & Zhang, 2022; Sihombing et al., 2024; Wang & Juo, 2021) find inconsistencies or non- significant relationships . Based on this phenomenon and the existing research gap, this study aims to analyze the influence of Green Competitive Advantage and Green Intellectual Capital on Sustainable Performance, with Environmental Management Accounting as a mediating variable in the palm oil companies of Kutai Kartanegara Regency.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Underpinning Theory: Stakeholder Theory This research is grounded in Stakeholder Theory, introduced by R. Edward Freeman (1984). This theory posits that a company must manage its relationships with various stakeholders who affect or are affected by its activities, including shareholders, employees, customers, local communities, government, and the environment itself . In the context of the palm oil industry, stakeholders demand that companies operate sustainably and responsibly. Green Competitive Advantage (GCA) GCA is the competitive edge a firm gains by implementing strategies and innovations focused on environmental sustainability. This allows the company to create added value for customers while meeting stakeholder expectations regarding social and environmental responsibility. Green Intellectual Capital (GIC) GIC refers to a company's intangible assets, including knowledge, skills, innovations, and relationships that support environmental sustainability goals. It comprises three main elements: green human capital, green structural capital, and green relational capital (Chen, 2008). Environmental Management Accounting (EMA) EMA is an accounting system designed to identify, measure, analyze, and report environmental information within the framework of managerial decision-making. It helps companies manage environmental costs, improve resource efficiency, and minimize negative environmental impacts. Sustainable Performance (SP) SP emphasizes the balance between economic, social, and environmental performance. This concept is closely linked to the "Triple Bottom Line" (Elkington, 1997), which includes Profit, People, and Planet.

Hypothesis Development Based on stakeholder theory, GCA as a strategy and GIC as a capability should drive companies to adopt formal systems (EMA) to manage and report on their environmental efforts, which in turn should lead to better outcomes (SP). H1: Green Competitive Advantage has a positive and significant effect on Environmental Management Accounting. H2: Green Competitive Advantage has a positive and significant effect on Sustainable Performance. H3: Green Intellectual Capital has a positive and significant effect on Environmental Management Accounting. H4: Green Intellectual Capital has a positive and significant effect on Sustainable Performance. H5: Environmental Management Accounting has a positive and significant effect on Sustainable Performance. H6: Green Competitive Advantage has a positive and significant effect on Sustainable Performance through Environmental Management Accounting. H7: Green Intellectual Capital has a positive and significant effect on Sustainable Performance through Environmental Management Accounting.

III. RESEARCH METHODOLOGY

This study employed a quantitative research design using a survey method. Primary data was collected directly from respondents via a structured questionnaire. The population consisted of managers and directors with strategic roles in 20 palm oil companies operating in Kutai Kartanegara Regency. Using a *purposive sampling* technique , the entire population of 110 respondents was taken as the sample. Respondents included 82 managers and 28 directors.

The collected data was analyzed using *Structural Equation Modeling* (SEM) with a *Partial Least Square* (PLS) approach, utilizing SmartPLS 4 software. All variables were measured using a 5-point Likert scale (1=Strongly Disagree to 5=Strongly Agree).

1. GCA (X_1) was measured using 5 indicators adapted from Astuti & Datrini (2021), including *environmental product innovation* and *eco-oriented operational efficiency*.
2. GIC (X_2) was measured using 3 indicators from Alnaim & Metwally (2024): *green human capital*, *green structural capital*, and *green relational capital*.
3. EMA (Y_1) was measured using 3 indicators from Alnaim & Metwally (2024): *environmental cost management*, *environmental performance reporting*, and *green innovation development*.
4. SP (Y_2) was measured using 3 indicators from Zhang & Chen (2023): *environmental performance*, *social performance*, and *economic performance*.

IV. RESULTS AND DISCUSSION

The measurement model (outer model) evaluation was satisfactory. All indicator loadings were above the 0.50 threshold and significant ($p < 0.05$) . *Composite Reliability* for all constructs was above 0.70 (GCA=0.807, GIC=0.869, EMA=0.846, SP=0.793), indicating high internal consistency . *Average Variance Extracted* (AVE) values for GIC (0.689), EMA (0.648), and SP (0.562) were above the 0.50 benchmark. GCA's AVE was 0.460, which is slightly below 0.50 but considered acceptable given the strong loadings and composite reliability.

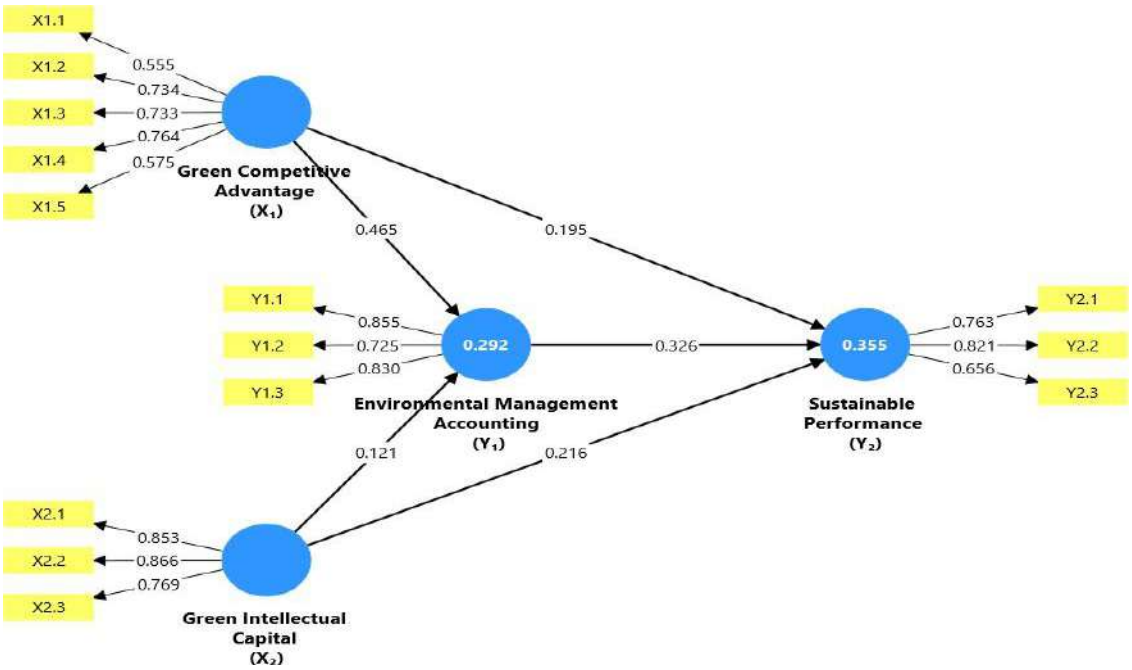

Fig. 1 Research Model

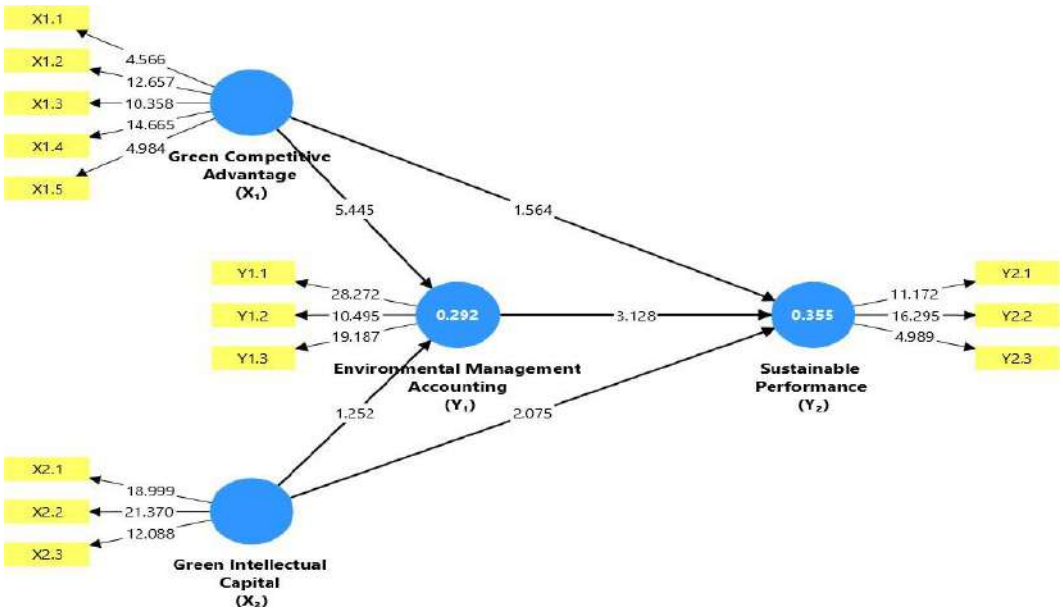

Fig. 2 Bootstrapped Research Model

The structural model (inner model) showed that the independent variables explained 29.2% of the variance in EMA (R^2 = 0.292) and 35.5% of the variance in SP (R_2=0.355). Hypothesis testing results are summarized in Table 1.

Table 1. Hypothesis Testing Results

Path	Hypothesis	β	T-Statistics	P-Values	Result
GCA → EMA	H1	0.465	5.445	0.000	Accepted
GCA → SP	H2	0.195	1.564	0.118	Rejected
GIC → EMA	H3	0.121	1.252	0.211	Rejected
GIC → SP	H4	0.216	2.075	0.038	Accepted
EMA → SP	H5	0.326	3.128	0.002	Accepted
GCA → EMA → SP	H6	0.152	2.377	0.017	Accepted
GIC → EMA → SP	H7	0.039	1.221	0.222	Rejected

Source: SmartPLS Output, 2025

V. DISCUSSION

The Influence of GCA on EMA (H1 Accepted)

The first hypothesis (H1) was accepted, confirming that Green Competitive Advantage (GCA) exerts a significant positive effect on Environmental Management Accounting (EMA). This finding implies that organizations adopting green-oriented competitive strategies are more inclined to institutionalize formal environmental management accounting systems to measure, record, and monitor environmental costs and performance. As firms aim to achieve strategic differentiation through environmental stewardship, the establishment of EMA becomes a strategic necessity to quantify environmental impacts, allocate resources efficiently, and communicate sustainability outcomes transparently. This result aligns with the findings of Saputra et al. (2023), who argued that firms pursuing environmental strategies tend to develop environmental information systems that facilitate managerial decision-making. Hence, GCA not only represents a strategic intent toward environmental responsibility but also drives the development of operational mechanisms such as EMA that enable firms to translate strategic objectives into measurable outcomes.

The Influence of GCA on SP (H2 Rejected)

The second hypothesis (H2) was rejected, indicating that GCA does not have a significant direct effect on Sustainable Performance (SP). This suggests that formulating or declaring green strategies alone is insufficient to generate tangible sustainability outcomes. A firm may adopt a green orientation in its mission or marketing statements; however, unless such strategies are internalized within daily operations, production systems, and management practices, their influence on sustainability performance remains limited. This result resonates with Jiao and Zhang (2022), who emphasized that green strategies often remain symbolic rather than substantive unless embedded into a comprehensive operational framework. In many cases, firms experience a "strategy– implementation gap," wherein the commitment to environmental initiatives is not supported by concrete actions or systematic performance evaluations. Therefore, the findings highlight that GCA must be operationalized through instruments such as EMA to yield significant sustainability benefits.

The Influence of GIC on EMA (H3 Rejected)

The third hypothesis (H3) was not supported, meaning that Green Intellectual Capital (GIC) does not significantly influence EMA implementation. This finding reveals a potential disconnect between a firm's green knowledge assets and its formal adoption of environmental management accounting systems. While organizations may possess substantial green knowledge, technical expertise, and relational capital, such intangible resources have not been effectively transformed into structured accounting or reporting systems. One possible explanation is that the utilization of GIC is often directed toward innovation, product development, or process efficiency, rather than the institutionalization of formal accounting systems. Firms may understand the importance of environmental awareness but lack the necessary systems integration or leadership commitment to embed these insights into management accounting practices. Consequently, the absence of a significant relationship between GIC and EMA highlights the need for firms to bridge the gap between green knowledge and managerial systems that can support sustainability measurement and reporting.

The Influence of GIC on SP (H4 Accepted)

The fourth hypothesis (H4) was accepted, indicating that GIC has a significant positive effect on SP. This result underscores the strategic role of green intellectual capital as a driver of sustainability-oriented outcomes. Firms with well-developed green human capital (employees with environmental knowledge and competencies), green structural capital (environmentally supportive policies and systems), and green relational capital (collaborative networks with environmentally conscious stakeholders) are more capable of achieving higher levels of environmental, social, and economic performance. This finding is consistent with Rundengan and Tjahjadi (2023), who highlighted that GIC serves as a critical internal resource that enhances an organization’s adaptive and innovative capabilities in managing sustainability challenges. Therefore, the positive influence of GIC on SP demonstrates that sustainability performance is not merely a function of external pressures but also of internal intellectual resources that support green innovation, knowledge sharing, and continuous improvement.

The Influence of EMA on SP (H5 Accepted)

The fifth hypothesis (H5) was supported, confirming that EMA has a significant positive effect on SP. This emphasizes the role of EMA as a pivotal managerial tool for sustainability performance enhancement. By systematically identifying, measuring, and managing environmental costs, EMA provides firms with accurate and relevant data to improve decision-making, minimize waste, optimize resource utilization, and enhance overall operational efficiency. Furthermore, EMA serves as a bridge between environmental responsibility and economic performance, allowing firms to demonstrate transparency and accountability to stakeholders. This result corroborates the findings of Huynh and Nguyen (2024), who noted that EMA enables firms to achieve a dual objective environmental protection and financial efficiency thus positioning it as a cornerstone of strategic sustainability management.

The Mediating Role of EMA (H6 Accepted, H7 Rejected)

The mediation analysis offers deeper insights into the mechanism underlying the relationships among GCA, GIC, and SP. The sixth hypothesis (H6) was accepted, showing that EMA significantly mediates the relationship between GCA and SP. This means that the influence of green competitive strategies on sustainable performance occurs indirectly through the implementation of EMA. Since the direct relationship between GCA and SP was not significant (H2 rejected), EMA serves as a full mediator in this relationship. In other words, a green strategy only translates into superior sustainability outcomes when operationalized through structured environmental accounting practices. Conversely, the seventh hypothesis (H7) was rejected, indicating that EMA does not mediate the relationship between GIC and SP. This suggests that the impact of GIC on sustainability performance is direct rather than channeled through environmental accounting mechanisms. In practical terms, the intellectual and knowledge-based capabilities of a firm contribute directly to its sustainability outcomes through innovation, green culture, and proactive stakeholder engagement—independent of formal accounting systems.

Comprehensive Interpretation

Overall, the findings demonstrate that Environmental Management Accounting (EMA) plays a central and transformative role in translating strategic intentions (GCA) into measurable sustainability outcomes (SP). While green intellectual resources (GIC) contribute directly to SP, the integration of EMA ensures that environmental strategies become actionable and quantifiable. The study thus provides empirical evidence for the importance of aligning strategic, intellectual, and operational dimensions of green management. From a theoretical standpoint, these results reinforce the Resource-Based View (RBV) and Natural Resource-Based View (NRBV) perspectives, which argue that the development and effective utilization of internal capabilities are key to achieving sustainable competitive advantage. In this context, EMA acts as a dynamic capability that allows firms to reconfigure resources and align environmental objectives with strategic performance goals.

Managerial Implications

The findings imply that managers should not treat green strategy as a symbolic or peripheral activity. Instead, they must institutionalize environmental management accounting as a decision-support tool to translate sustainability objectives into measurable actions. Firms should also strengthen their green intellectual capital by investing in environmental training, innovation systems, and stakeholder collaboration, ensuring that knowledge resources complement formal accounting practices. Moreover, managers are encouraged to view EMA as a strategic investment rather than a compliance requirement. By embedding EMA within their strategic planning and control processes, firms can enhance their environmental transparency, achieve cost efficiencies, and build a stronger reputation for sustainability leadership.

Future Research Directions

Future studies could expand this model by incorporating additional variables such as green innovation, organizational culture, or digital transformation to examine how these factors interact with EMA and sustainability performance. Longitudinal research could also provide a deeper understanding of how the integration of GCA, GIC, and EMA evolves over time. Furthermore, comparative studies across different industries or countries could help generalize these findings and explore contextual differences in environmental management practices.

VI. CONCLUSION

This study provides comprehensive empirical evidence regarding the intricate and multidimensional relationships between green strategies, green capabilities, and sustainable performance within the Indonesian palm oil industry. Using the framework of the Resource-Based View (RBV) and Natural Resource-Based View (NRBV), the research demonstrates how environmental strategic orientation, intellectual resources, and management systems interact to shape a firm's sustainability outcomes. The findings offer meaningful theoretical and practical implications, particularly for industries that operate under increasing environmental scrutiny and sustainability expectations.

The results reveal that Green Competitive Advantage (GCA) serves as a key driver in the adoption of Environmental Management Accounting (EMA). This implies that when companies actively pursue environmentally oriented competitive strategies, they tend to formalize their environmental management processes through structured accounting mechanisms. EMA becomes an essential operational tool that enables organizations to quantify, evaluate, and monitor environmental costs and performance indicators, thereby aligning environmental responsibility with economic objectives. This supports the notion that strategic environmental orientation encourages the institutionalization of systematic measurement systems, ensuring that sustainability efforts are data-driven and verifiable.

However, the findings also indicate that GCA does not directly influence Sustainable Performance (SP).

This lack of direct relationship suggests that green strategies alone are not sufficient to produce tangible sustainability outcomes. Without being embedded within a functional environmental accounting framework, such strategies may remain superficial, symbolic, or limited to compliance-oriented practices. Therefore, GCA's contribution to sustainability performance is realized only when it is operationalized through concrete managerial systems particularly EMA that transform environmental intent into measurable performance outcomes.

In contrast, Green Intellectual Capital (GIC) shows a more nuanced role. The study finds that GIC does not have a significant influence on the adoption of EMA, suggesting a persistent gap between the possession of green knowledge and the establishment of formal accounting and reporting systems. This finding highlights an organizational challenge: firms may have the intellectual and human capacity to innovate in environmental domains, but they often fail to translate this capability into systematic management practices. Nevertheless, GIC exerts a strong and direct positive influence on Sustainable Performance (SP). This indicates that the intellectual assets embedded in green human, structural, and relational capital directly enhance a company's ability to achieve sustainable outcomes through innovation, efficiency, and adaptive management. In essence, while GIC may not lead to EMA adoption, it independently strengthens sustainability performance through knowledge-driven processes and environmentally conscious decision-making.

The results further emphasize the pivotal role of Environmental Management Accounting (EMA) as an effective instrument for improving sustainable performance. EMA enables firms to integrate environmental and financial information, which enhances the quality of managerial decisions and leads to improved environmental efficiency, reduced waste, and cost savings. Its role extends beyond measurement it facilitates learning, accountability, and transparency in sustainability reporting. Importantly, the mediation analysis reveals that EMA fully mediates the relationship between GCA and SP, implying that green competitive strategies only lead to superior sustainability outcomes when they are operationalized through an environmental accounting system. This demonstrates that EMA acts as the conduit that translates strategic environmental intent into measurable and impactful sustainability results. However, EMA does not mediate the relationship between GIC and SP, signifying that the influence of green intellectual capital operates through more direct, knowledge-based pathways rather than through formal accounting systems.

Overall, this study highlights the central role of EMA as a strategic bridge between environmental strategy and sustainability performance. It confirms that achieving sustainable success in the palm oil sector requires a holistic integration of green strategy, knowledge resources, and accounting systems. Firms that focus exclusively on policy formulation or strategic declarations of environmental responsibility without embedding those into managerial processes are unlikely to experience significant performance improvements. Therefore, the findings collectively underscore that sustainability is not merely a function of strategic intention but of systematic implementation and measurement.

From a managerial perspective, the findings carry several important implications. Managers within the palm oil industry and in other environmentally sensitive sectors should recognize that adopting a "green strategy" (GCA) in isolation is insufficient to drive meaningful change. To realize measurable improvements in Sustainable Performance (SP), companies must integrate their environmental strategies with a robust and well-functioning Environmental Management Accounting (EMA) system. EMA provides the necessary tools to measure, manage, and communicate environmental impacts, thereby transforming sustainability objectives into operational realities. Furthermore, investment in Green Intellectual Capital (GIC) remains crucial, as it directly enhances performance through innovation and human capability. Nonetheless, firms should strive to link these intellectual assets more closely to their EMA systems, ensuring that environmental knowledge, skills, and data collectively support decision-making and performance evaluation. This integration would allow organizations to maximize the synergistic potential between strategic orientation, intellectual capacity, and managerial systems.

Despite its valuable insights, the study is not without limitations. The research was conducted within a single industry context specifically, the palm oil sector in Kutai Kartanegara Regency, Indonesia. As such, the generalizability of the findings to other industries or regions may be constrained. The use of self-reported, perception-based data collected through questionnaires may also introduce subjectivity and potential response bias. In addition, the cross-sectional nature of the study restricts the ability to capture dynamic changes in green strategy implementation and sustainability performance over time. Therefore, caution should be exercised in interpreting the causal relationships.

For future research, several promising avenues emerge. Subsequent studies could broaden the scope by including multiple industries or conducting cross-regional comparisons to explore how contextual factors influence the interplay between GCA, GIC, EMA, and SP. Employing mixed-method approaches, combining quantitative modeling with qualitative case studies or interviews, could provide richer insights into organizational

behaviors and managerial practices underlying green accounting adoption. Furthermore, introducing additional variables such as organizational culture, leadership commitment, stakeholder pressure, or regulatory support could serve as moderators or mediators to better explain variations in sustainability outcomes. Longitudinal studies could also help examine how firms evolve over time in embedding green strategies and management accounting systems, contributing to a more dynamic understanding of sustainability transformation processes.

In conclusion, this research contributes significantly to the understanding of how green strategies, intellectual capital, and environmental accounting interact to shape sustainability performance in the Indonesian palm oil industry. It reinforces the idea that sustainability excellence cannot be achieved through policy rhetoric alone but must be supported by structured systems and informed by human and intellectual capabilities. For practitioners and policymakers alike, the message is clear: advancing toward sustainable development requires not only strategic commitment but also operational precision, managerial integration, and continuous learning within organizations.

REFERENCES

[1] Agustina, S., Ruhiyat, E., & Sugiyanto, S. (2024). Green intellectual capital on firm performance moderated by green business strategy. *West Science Engineering and Education*, 5(1), 1–15.

[2] Alnaim, M., & Metwally, A. B. M. (2024). Green intellectual capital and corporate environmental performance: Does environmental management accounting matter? *Administrative Sciences*, 14(12), 311. https://doi.org/10.3390/admsci14120311

[3] Asiaei, K., Bontis, N., Alizadeh, R., & Yaghoubi, M. (2021). Green intellectual capital and environmental management accounting: Natural resource orchestration in favor of environmental performance. *Business Strategy and the Environment*, 30(8), 18-35. https://doi.org/10.1002/bse.2849.

[4] Astuti, P. D., & Datrini, L. K. (2021). Green competitive advantage: Examining the role of environmental consciousness and green intellectual capital. *Management Science Letters*, 11(4), 1141–1152. https://doi.org/10.5267/j.msl.2020.11.018

[5] Baumgartner, R. J., & Ebner, D. (2010). Corporate sustainability strategies: Sustainability profiles and maturity levels. *Sustainable Development*, 18(2), 76-89. https://doi.org/10.1002/sd.447

[6] Burritt, R., Christ, K., & Schaltegger, S. (2021). Environmental management accounting: The significance of context. *Journal of Cleaner Production*, 280, 124818. https://doi.org/10.1016/j.jclepro.2020.124818

[7] Chen, Y. S. (2008). The driver of green innovation and green image – Green core competence. *Journal of Business Ethics*, 81(3), 531-543. https://doi.org/10.1007/s10551-007-9522-1

[8] 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

[9] Chen, Y. S., Lin, Y. H., & Chang, C. H. (2014). The influence of green intellectual capital on competitive advantages of green innovation: The mediation role of green social capital. *Sustainability*, 6(10), 6922– 6938. https://doi.org/10.3390/su6106922

[10] Cheng, C. C., Yang, C. L., & Liu, S. H. (2022). Strategic green orientation, environmental innovation capability, and green competitive advantage: Evidence from the manufacturing industry. *Journal of Cleaner Production*, 366, 132045. https://doi.org/10.1016/j.jclepro.2022.132045

[11] Christ, K. L., & Burritt, R. L. (2019). Implementation of sustainability management accounting tools: Developing insights from practice. *Sustainability Accounting, Management and Policy Journal*, 10(1), 183-207. https://doi.org/10.1108/SAMPJ-03-2018-0087

[12] Deegan, C. (2020). *Financial accounting theory* (9th ed.). McGraw Hill.

[13] Elkington, J. (1997). *Cannibals with forks: The triple bottom line of 21st century business*. Capstone Publishing.

[14] Fatima, K., Ahmed, A., Mahnoor, & Sultan, A. H. (2023). Green intellectual capital driving environmental performance: The mediating role of green ambidexterity and moderating influence of environmental ethics. *Sustainable Trends and Business Research*, 1(2), 62–75. https://doi.org/10.70291/stbr.1.2.2023.7

[15] Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.

[16] Ghozali, I. (2018). *Structural equation modeling: Metode alternatif dengan partial least squares (PLS)* (5th ed.). Badan Penerbit Universitas Diponegoro.

[17] Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.

[18] Hart, S. L., & Dowell, G. (2011). A natural-resource-based view of the firm: Fifteen years after. *Journal of Management*, 37(5), 1464-1479. https://doi.org/10.1177/0149206310390219

[19] Huynh, Q. L., & Nguyen, V. K. (2024). The role of environmental management accounting in sustainability. *Sustainability*, 16(17), 7440. https://doi.org/10.3390/su16177440

[20] Jiao, X., Zhang, P., He, L., & Li, Z. (2022). Business sustainability for competitive advantage: Identifying the role of green intellectual capital, environmental management accounting, and energy efficiency. *Economic Research-Ekonomska Istraživanja*, 35(2), 1-20. https://doi.org/10.1080/1331677X.2022.2070329

[21] Jogiyanto, H. M. (2015). *Analisis jalur (path analysis) dengan partial least squares (PLS) dan aplikasi menggunakan smartPLS*. Andi.

[22] Lozano, R., Nummert, B., & Ceulemans, K. (2015). Elucidating the relationship between sustainability reporting and organisational change management for sustainability. *Journal of Cleaner Production*, 108, 45-55. https://doi.org/10.1016/j.jclepro.2015.08.026

[23] Nawangsari, L. C., et al. (2025). Exploring green intellectual capital's role in sustainable organizational performance for millennials. *International Review of Management and Marketing*, 15(1), 83–95.

[24] Noor, A., & Bano, A. (2023). Impact of green intellectual capital and environmental management accounting on sustainable performance: The moderating role of stakeholder pressure. *Sustainable Technology and Business Review*, 2(1), 1–14.

[25] Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. Free Press.

[26] Porter, M. E., & van der Linde, C. (1995). Toward a new conception of the environment-competitiveness relationship. *Journal of Economic Perspectives*, 9(4), 97–118. https://doi.org/10.1257/jep.9.4.97

[27] Qian, W., Burritt, R., & Chen, J. (2018). The potential of environmental management accounting for environmental management systems: Evidence from eco-control and ISO 14001. *Journal of Cleaner Production*, 174, 1602-1611. https://doi.org/10.1016/j.jclepro.2017.11.057

[28] Rundengan, F. D. P., & Tjahjadi, B. (2023). The impact of green intellectual capital on sustainable performance: Case studies in educational organizations. In *Proceedings of the 3rd International Conference on Education and Technology (ICETECH 2022)* (pp. 793–814).

[29] Saputra, K. A. K., Subroto, B., Rahman, A. F., & Saraswati, E. (2023). Mediation role of environmental management accounting on the effect of green competitive advantage on sustainable performance. *Journal of Sustainability Science and Management*, 18(2), 103-115.

[30] Schaltegger, S., & Burritt, R. (2017). *Contemporary environmental accounting: Issues, concepts and practice*. Greenleaf Publishing.

[31] Sihombing, B. A. S., Lestari, D. N. L., & Sari, R. (2024). Systematic literature review (SLR): The role of environmental management accounting in enhancing green competitive advantage and sustainable performance in the hospitality industry in Indonesia. *International Journal of Economics, Business and Industrial Research*, 5(1), 1–15.

[32] Song, W., Yu, H., & Xu, H. (2017). Green innovation, green intellectual capital, and green competitive advantage: Evidence from Chinese manufacturing enterprises. *Sustainability*, 9(9), 1463. https://doi.org/10.3390/su9091463

[33] Sulaiman, M., Ahmad, N., & Alshurideh, M. (2022). Environmental accounting in achieving organizational sustainability goals: A review. *Sustainability*, 14(8), 4781. https://doi.org/10.3390/su14084781

[34] Vo, T. L., & Nguyen, N. H. (2024). The impact of managers' attitudes towards environmental management accounting and green competitive advantage in Vietnam manufacturers. *Heliyon*, 10(13), e33565. https://doi.org/10.1016/j.heliyon 2024.e33565

[35] Wang, C. H., Chen, K. Y., & Chen, S. C. (2018). Green innovation, environmental performance, and competitive advantage in the high-tech industry. *Journal of Business Research*, 91, 336–345. https://doi.org/10.1016/j.jbusres.2018.06.014

[36] Wang, C.-H., & Juo, W.-J. (2021). An environmental policy of green intellectual capital: Green innovation strategy for performance sustainability. *Business Strategy and the Environment*, 30(1), 1–14. https://doi.org/10.1002/bse.2731

[37] Yussof, S. A., Omar, N. A., Zainuddin, Y., & Othman, R. (2019). An empirical investigation of the relationship between green intellectual capital and corporate sustainable development. *Journal of Cleaner Production*, 235, 1–14. https://doi.org/10.1016/j.jclepro.2019.06.310

[38] Zahid, Z., Zhang, J., Shahzad, M. A., Junaid, M., & Shrivastava, A. (2024). Green synergy: Interplay of corporate social responsibility, green intellectual capital, and green ambidextrous innovation for sustainable performance in the industry 4.0 era. *PLOS ONE*, 19(8), e0306349. https://doi.org/10.1371/journal.pone.0306349

[39] Zameer, H., Wang, Y., Yasmeen, H., & Waheed, A. (2020). Environmental sustainability: The role of organizational green culture and green competitive advantage. *Corporate Social Responsibility and Environmental Management*, 27(2), 824–841. https://doi.org/10.1002/csr.1845

[40] Zhang, J., & Chen. (2023). Enhancing sustainable performance: The innovative strategy of digital transformation with green human resource management and green supply chain management. *Sustainability*, 15(17), 13085. https://doi.org/10.3390/su151713085

[41] Zhen, T., & Rahman, M. M. (2024). Greening emerging economies: Enhancing environmental, social, and governance performance through environmental management accounting and green financing. *Sustainability*, 16(11), 4753. https://doi.org/10.3390/su16114753