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The Impact of Green Economy Implementation on Financial Performance and Sustainability of MSME Business Models in Indonesia

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ABSTRACT
This study aims to analyze the influence of green economy implementation on the financial performance and sustainability of MSME business models in Indonesia. Employing a quantitative approach and Structural Equation Modeling–Partial Least Squares (SEM-PLS) analysis, this research examines MSMEs that have adopted environmentally sustainable practices through green innovation, green accounting, and green human resource management. The findings indicate that implementing the green economy has a positive, statistically significant effect on financial performance, with financial performance serving as a partial mediator, reinforcing the relationship between green practices and the sustainability of business models. These results substantiate the notion that successful green transformation not only engenders environmental legitimacy but also enhances financial resilience, which serves as the foundation for MSMEs' long-term competitiveness. Practically, this research offers implications for policymakers to strengthen the green regulatory and financing ecosystem, for MSME stakeholders to incorporate innovation alongside financial literacy and digitalization, and for financial institutions to develop inclusive, environment-based funding instruments.

Keywords: Green Economy; Financial Performance; Sustainability; MSMEs; Business Model

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INTRODUCTION

The current global economy faces unprecedented challenges from climate change, ecological decline, and the urgent need for sustainable growth. Extreme weather, biodiversity loss, and rising carbon emissions threaten economic stability and deepen social inequalities (UNEP, 2022). In response, the green economy framework has gained prominence as a strategic approach that combines environmental protection, social inclusion, and economic development (OECD, 2023). It promotes shifting away from traditional growth models that rely heavily on resource exploitation toward sustainable practices that build long-term resilience.

In Indonesia, adopting green economy practices is especially urgent, given its dual status as a rapidly growing economy and one of the world's most biodiverse countries. Micro, Small, and Medium Enterprises (MSMEs) form the backbone of Indonesia's economy, accounting for about 99% of businesses and employing over 97% of the workforce (Jayanto et al., 2025). Their significant contribution to GDP and employment positions MSMEs as vital drivers for achieving national sustainability goals. Incorporating green practices into MSME operations is crucial not only for reducing environmental risks but also for securing economic resilience amid global disruptions like pandemics, energy crises, and climate-related disasters (Putra et al., 2023).

Research from Indonesia shows that MSMEs adopting green innovation, green accounting, and environmentally friendly practices tend to perform better financially

and develop more sustainable business models (Indriastuti & Mutamimah, 2023; Ginting & Rijal, 2024). These advantages are further enhanced by digital transformation, improved financial literacy, and access to green financing (Sumastuti et al., 2024; Joeliaty, 2024). However, adoption is inconsistent. Rural MSMEs often face infrastructural, technological, and financial barriers that hinder their transition to green practices (Hadi et al., 2024; Sucipto & Handayani, 2023). This inequality underscores a structural challenge in ensuring inclusivity during Indonesia's green economic transition.

Looking globally, the European Union's Green Deal illustrates how comprehensive policies can foster eco-friendly practices through clear regulation and financial incentives (European Commission, 2021). Similarly, China's state-driven green industry incentives highlight the effectiveness of national strategies in boosting MSME competitiveness (Zhou & Li, 2022). Conversely, Indonesia's green policies tend to be fragmented, often led by institutions like Bank Indonesia or sector-specific ministries, lacking a unified national framework (Hadi et al., 2024). This disjointed approach results in uneven implementation, limited scalability, and weak monitoring systems (Santoso, 2023).

A notable research gap exists in empirical studies examining the interconnected relationships among green economy practices, financial performance, and MSME business sustainability in Indonesia. Past research often considers these factors separately, focusing only on the financial outcomes of green innovation or green accounting, without exploring their interactions. Additionally, the roles of market orientation and green human resource management in enhancing green economy adoption within MSMEs remain underexplored (Rahman & Widodo, 2023; Setiawan et al., 2024). This study's unique contribution is the use of Structural Equation Modeling–Partial Least Squares (SEM-PLS) to analyze the combined effects of green practices on MSME performance and sustainability, enabling a more comprehensive understanding of complex relationships and mediating variables beyond isolated case analyses.

The purpose of this research is to investigate how green economy practices influence MSMEs' financial results and the long-term sustainability of their business models in Indonesia. It also aims to highlight the importance of green innovation, market orientation, and green human resource management as key determinants. The findings are expected to enrich theoretical frameworks by extending the green economy model to MSMEs and offer practical policy suggestions to develop inclusive, scalable, and effective strategies for Indonesia's green economic advancement.

Literature Review

1. Concept, Mechanisms, and Empirical Evidence in Indonesia

The Indonesian literature consistently shows that adopting the green economy involves several key mechanisms: market orientation, green innovation, digitalization, green accounting, governance, and access to green financing. Jayanto et al. (2025) highlight that proactive market orientation allows firms to sense consumer preferences for eco-friendly products. Green innovation (such as eco-design, energy efficiency, and waste reduction) and digitalization (including digital marketing, e-payments, and e-commerce platforms) significantly boost MSMEs' competitiveness and sales. Regarding accounting, Indriastuti & Mutamimah (2023) reveal that green accounting—covering environmental cost measurement, emission/waste performance reporting,

and green budgeting—improves sustainability through the mediation of financial performance. This shows that environmental disclosure is not just about compliance but also drives cost efficiency and market legitimacy. Additionally, Ginting & Rijal (2024) demonstrate that access to green financing (like loans tied to environmental standards) and strong governance (transparency, accountability, compliance) strengthen financial resilience, particularly during expansion and recovery periods..

2. Complementary Capabilities: Financial and Digital Literacy

Green transformation in MSMEs is accelerated by financial literacy and digital capabilities. Sumastuti et al. (2024) argue that financial literacy enables entrepreneurs to understand green financing instruments and manage cash flows for energy efficiency projects, while strong digital capabilities amplify the scale of green practices through process automation, emission/waste data tracking, and *green marketing* using analytics. Together, green practices, financial literacy, and digitalization form a *flywheel effect* that enhances both financial performance and sustainability indicators (environmental—E, social—S, and governance—G).

3. Implementation Gaps: Green HRM and Organizational Culture

Despite rising awareness, the implementation of Green Human Resource Management (GHRM) and green organizational culture remains uneven across sectors. Muafi & Roostika (2022) and Kusuma et al. (2023) emphasize that recruitment, training, performance appraisal, and incentives aligned with environmental targets are still sporadic. Without GHRM, pro-environmental employee behavior is difficult to sustain. Organizational culture gaps such as resistance to production process changes create an *implementation gap* between policy and practice. This highlights the need for multi-level interventions: internal policy design (green SOPs, environmental KPIs), employee capacity building, and *change management* that links green adoption to financial gains.

4. Policy Ecosystem and Financing Architecture

From an ecosystem perspective, Hadi et al. (2024) point out that institutional initiatives, including those by banks, fiscal/monetary authorities, and support agencies, can expand the reach of green financing, standardize criteria, and reduce transaction costs of compliance. Sumastuti et al. (2024) further stress the importance of managerial training, technical advisory (energy audits, life-cycle assessments), and fiscal incentives to reduce the initial capital expenditures (CAPEX) that often act as entry barriers for small firms.

5. Toward Synthesis: Mediation and Moderation Roles

The above evidence suggests a rich web of relationships:

a. Green accounting mediates the link between green practices and sustainability by driving cost efficiency and stakeholder legitimacy (Indriastuti & Mutamimah, 2023).

b. Green financing access and governance quality tend to moderate the impact of innovation and digitalization on financial performance the easier the access and the stronger the governance, the stronger the effects (Ginting & Rijal, 2024).

c. Financial literacy and digital capabilities may also serve as moderators that enhance the effectiveness of green practices (Sumastuti et al., 2024; Jayanto et al., 2025).

d. These findings imply that quantitative research using SEM-PLS in Indonesia should examine direct, indirect (mediation), and conditional (moderation) effects to map the true drivers of MSME performance and sustainability.

6. Comparison with International Findings

a. Policy Support and Ecosystem Orchestration

Globally, successful MSMEs adopting the green economy operate within orchestrated policy ecosystems featuring clear green taxonomies, standardized disclosures, green guarantee schemes, and supplier development programs. Regulatory frameworks such as the *Green Deal* in Europe provide standardized financing channels and integrated technical assistance, accelerating the diffusion of green innovation. In China, government incentives (subsidized energy-efficient equipment, preferential tariffs, and green public procurement) foster *economies of adoption*, lowering per-unit innovation costs at scale. By contrast, Hadi et al. (2024) show that Indonesia's landscape remains fragmented, relying on isolated initiatives from institutions (e.g., central banks and selected financial institutions), resulting in varied scales and implementation consistency across regions and sectors.

b. Supply Chain Pressures and Standards

In many countries, lead firms require suppliers (often MSMEs) to comply with environmental standards, thereby exerting supply chain pressure through supplier codes, environmental audits, and green contracts. This accelerates organizational learning in small firms and unlocks access to premium markets. While Indonesia shows emerging signs of this dynamic, it lacks widespread standardization, labeling, and verification mechanisms that could enable MSMEs to enter export markets or cater to environmentally conscious consumers (Hadi et al., 2024; Sumastuti et al., 2024).

c. Summary of Gaps and Research Directions

Overall, global trends emphasize the full integration of policy, technology, and financing, while Indonesia continues to face challenges in regulatory coordination, asymmetric human capital, and unequal access to financing at the MSME level (Hadi et al., 2024; Muafi & Roostika, 2022; Kusuma et al., 2023). The proposed study contributes by empirically examining how the green economy directly impacts MSME performance and business model sustainability, while incorporating the roles of green accounting as a mediator and governance, financing, and literacy as moderators (Jayanto et al., 2025; Indriastuti & Mutamimah, 2023; Ginting & Rijal, 2024; Sumastuti et al., 2024).

METHODS

The methodology of this study uses a quantitative approach and the Structural Equation Modeling – Partial Least Squares (SEM-PLS) analysis technique. This approach was chosen because it can evaluate the complex relationships among latent constructs, both direct and indirect influences, and is in accordance with the research objectives to understand the relationship between green economy implementation and the financial performance and sustainability of MSME business models in Indonesia. The population in this study comprises MSMEs in Indonesia that have adopted environmentally friendly practices, such as green innovation, *green accounting*, or sustainable human resource practices. The sampling technique used is *purposive sampling*, based on MSMEs that have been operating for at least 3 years and are involved in green economy initiatives. This selection yields a more representative sample for describing the phenomenon being studied.

The research instrument was in the form of a structured questionnaire with a Likert scale of 1–5. The variables measured included: (1) Green Economy Implementation, which includes green innovation, green human resource management, market orientation, and environmental orientation; (2) Financial Performance, which is measured through profitability, liquidity, and revenue growth; and (3) Sustainable Business Model, which includes adaptability, environmental sustainability, and long-term competitiveness. Data analysis is carried out in three main stages. First, evaluate the measurement model to assess convergent validity, discriminant validity, Cronbach's alpha reliability, and *composite reliability*. Second, testing structural models to evaluate the relationships between constructs. Third, mediation testing to assess the role of financial performance as a mediator in the relationship between green economy implementation and sustainable business models.

Through this methodological approach, the research is expected to produce strong empirical findings as well as provide a comprehensive understanding of how the implementation of the green economy can contribute to improving financial performance and the long-term sustainability of MSME business models in Indonesia. The following are the research steps.

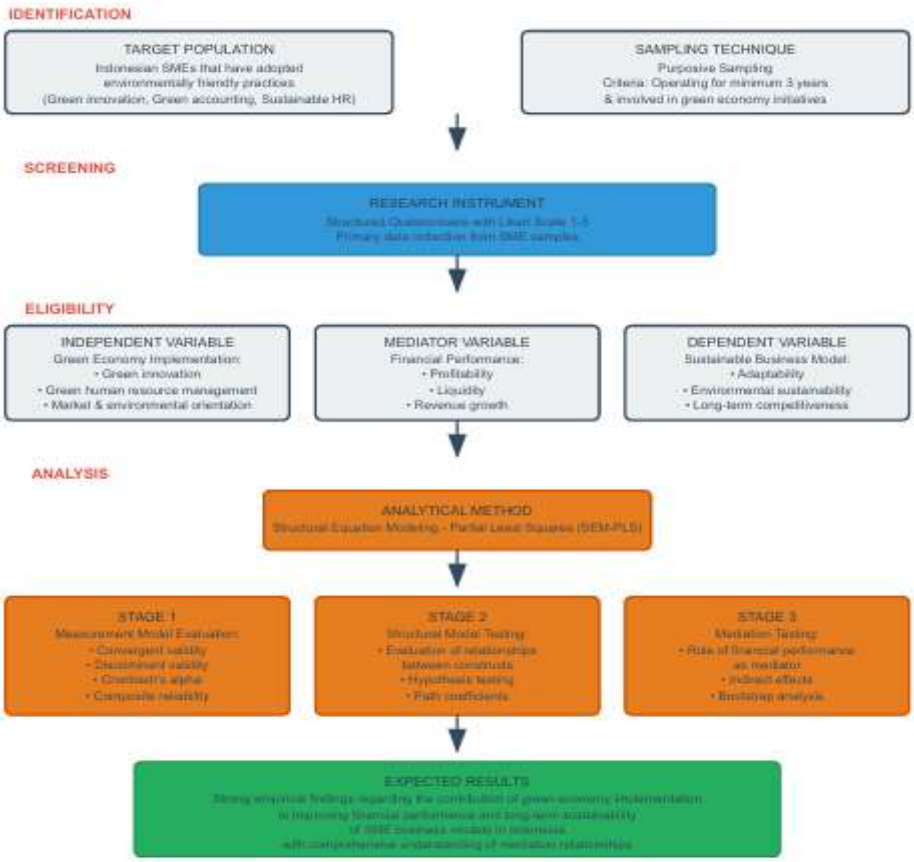

Figure 1. Research Steps

Result and Discussion

Result

1. Measurement Model (Outer Model)

Analysis of the measurement model showed that all indicators had a loading factor value of > 0.70 with a significance of p < 0.05, thus meeting the requirements for convergent validity. The AVE value of each construct was also above 0.50, while Cronbach's Alpha and Composite Reliability were all > 0.70, indicating that the instrument had good reliability. The discriminant validity test with the HTMT ratio is also < 0.90, so the constructs are empirically different.

Tabel 1. Measurement Model (Outer Model)

Indicator	Loading Factor
Green Innovation	0,84
Green HR Management	0,88
Market Orientation	0,81
Environmental Orientation	0,86
Profitability	0,89
Liquidity	0,85
Revenue Growth	0,83
Adaptability	0,87
Environmental Sustainability	0,82
Long-term competitiveness	0,88

2. Structural Model (Inner Model)

The results of the structural model test showed that:

a. The implementation of Green Economy → Financial Performance had a significant positive effect (β = 0.23; p = 0.005).
b. Financial Performance → Sustainable Business Model had a significant positive effect (β = 0.20; p = 0.010).
c. The implementation of the Green Economy → Sustainable Business Model was also significant (β = 0.15; p = 0.020), although the effect was smaller than that of the indirect route.

The R^2 value indicates that Green Economy Implementation explains 42% of the variance of Financial Performance, while the combination of Green Economy Implementation and Financial Performance explains 47% of the variance of Sustainable Business Model.

Tabel 2. Structural Model (Inner Model)

Connection	Coephyses (β)	p-value
Implementation of Green Economy → Financial Performance	0,23	0,005
Financial Performance → Sustainable Business Model	0,20	0,010
Implementation of Green Economy → Sustainable Business Model	0,15	0,020

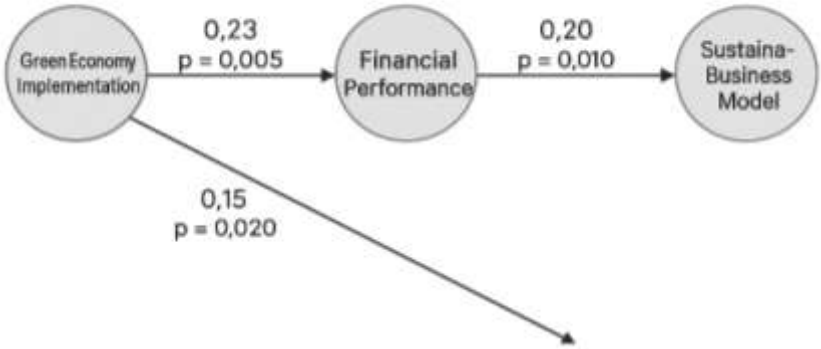

Figure 2. Structural Model Test Results (SEM-PLS)
(use file: structural_model_results.png)

3. Mediation Test

Mediation tests using bootstrapping showed that Financial Performance plays a significant mediator in the relationship between Green Economy Implementation and Sustainable Business Models. This mediation effect is partial, as the direct influence remains significant even if the mediation path is taken into account.

Tabel 3. Mediation Test

Connections	Indirect Effect (β)	p-value	Types of Mediation
Implementation of Green Economy → Financial Performance → Sustainable Business Model	0,046	0,008	Partial

Discussion

The results of this study reinforce that implementing the green economy is a key strategy for MSMEs to improve financial performance while developing a sustainable business model. The SEM-PLS analysis shows that green innovation practices, green human resource management, market orientation, and environmental orientation positively impact profitability, liquidity, and revenue growth. This aligns with the findings of Indriastuti and Mutamimah (2023) and Ginting and Rijal (2024), who highlight that adopting eco-design, energy efficiency, and effective waste management not only reduces operational costs but also enhances market legitimacy and consumer confidence.

From a theoretical perspective, these findings support the triple bottom line framework (economic, social, environmental), where environmentally friendly practices have both economic and social effects. Energy efficiency and sustainable practices enhance profitability, while market- and environmental-oriented strategies help ensure long-term competitiveness by creating differentiation based on sustainability (Elkington, 1997; Jayanto et al., 2025). Therefore, the green economy acts as a strategic tool that links ecological sustainability with economic growth.

Another significant finding is the role of financial performance as a partial mediator between green economy implementation and business model sustainability. This indicates that green practices, when successfully reflected in strong financial results, enhance MSMEs' ability to adapt, maintain environmental sustainability, and compete over time. This aligns with the view that green accounting and environmental transparency are not just regulatory requirements but also strategies to achieve cost

efficiency, competitive advantages, and market legitimacy (Indriastuti & Mutamimah, 2023; Sumastuti et al., 2024).

However, the study also reveals that although the direct effect of green economy implementation on business model sustainability is significant, it is smaller than the indirect effect through financial performance. This affirms that MSME business model sustainability relies heavily on financial resilience. In other words, green practices will only be sustainable if they lead to positive financial outcomes. Without clear economic incentives, adopting green practices risks becoming a short-term effort or merely complying with regulations (Rahman & Widodo, 2023; Setiawan et al., 2024).

On a global level, these results match studies from Europe and China. The European Union's European Green Deal offers a comprehensive regulatory framework and financial incentives, which have proven to speed up the adoption of green practices by MSMEs (European Commission, 2021). In China, government support through subsidies for energy-efficient equipment, favorable tariffs, and green procurement enhances the competitiveness of MSMEs domestically and internationally (Zhou & Li, 2022). Conversely, Indonesia still faces policy fragmentation, where green initiatives tend to be sector-specific and lack national coordination (Hadi et al., 2024; Santoso, 2023). Consequently, the positive effects of green economy strategies are unevenly felt across regions and sectors, especially in rural areas with limited infrastructure (Sucipto & Handayani, 2023).

The role of green human resource management (GHRM) also presents challenges. Many MSMEs lack hiring, training, or incentive systems aligned with environmental goals. The success of green transformation depends not only on business strategies but also on organizational behaviors and culture that embody sustainability values (Muafi & Roostika, 2022; Kusuma et al., 2023). This underscores the need for internal interventions in MSMEs, such as establishing green SOPs, environmental performance metrics (environmental KPIs), and change management processes that connect eco-friendly practices with financial benefits.

Furthermore, the study supports the idea that combining green practices, financial literacy, and digital transformation creates a cycle of growth. MSMEs with strong financial knowledge can leverage green financing options, while digital tools enable automation, emission data analysis, and more effective green marketing (Sumastuti et al., 2024; Jayanto et al., 2025). Integrating financial literacy and digital technology thus reinforces the link between the green economy, financial success, and sustainability.

Practically, these findings suggest several implications. First, policymakers should harmonize regulations and strengthen an inclusive green financing ecosystem to ensure MSMEs across regions have equal access to capital and environmental incentives. Second, MSMEs should focus their green transformation strategies on both product and process innovation, as well as building internal capacity through GHRM, financial literacy, and digitalization. Third, financial institutions must offer flexible financing options that include environmental incentives, facilitating faster and more equitable adoption of the green economy.

In conclusion, implementing the green economy serves a dual purpose: enhancing MSMEs' financial performance while laying the foundation for long-term sustainability. The success of this transformation relies heavily on the synergy

between internal factors (such as innovation, market orientation, GHRM, and digitalization) and external influences (like regulations, incentives, and access to green financing).

CONCLUSION

This research demonstrates that implementing the green economy has a positive, significant effect on the financial performance of MSMEs, thereby enhancing the sustainability of their business models. Green innovation, green human resource management, market orientation, and environmental focus have been shown to boost profitability, liquidity, and revenue growth. Financial performance also partially mediates the relationship between green practices and business sustainability, confirming that adopting a green economy not only directly affects environmental outcomes but also fosters financial resilience, which is essential for long-term competitiveness. Therefore, the green economy can be viewed as a dual strategy that combines ecological sustainability with the economic growth of MSMEs in Indonesia.

Based on these findings, several recommendations are proposed. First, policymakers should coordinate regulations and strengthen an inclusive green financing ecosystem to ensure that MSMEs across regions have equal access to capital and environmental incentives. Second, MSME actors should focus not only on product and process innovation but also on internal strengthening through green human resource management (GHRM), financial literacy, and digitalization, enabling green practices to translate into sustainable competitive advantages. Third, financial institutions and ecosystem supporters should expand the availability of flexible, environmentally focused financing options, managerial training, and technical assistance (such as energy audits or life-cycle analyses) to help MSMEs overcome initial cost barriers to green implementation. Finally, for further research, expanding the scope to compare MSMEs across sectors or regions is recommended, along with examining the moderating role of external factors such as local government policies, supply chain pressures, and global consumer demand in supporting successful green economy implementation.

References

Achmad, F., Suhanda, H., & Wijaya, A. (2025). The role of Green Innovation and Knowledge Management in fostering organizational performance and competitive advantage. *Journal of Cleaner Production*. https://doi.org/10.1016/j.jclepro.2025.

Andini, P., Paramita, & Sanskara, K. I. (2023). Innovation and Sustainability: Examining the Adoption of Green Technologies by Indonesian MSMEs. *EPEB* (East / South Institute), 1(1), Article 45. https://doi.org/10.58812/epeb.v1i1.45

Ardhiyansyah, A., & Juniansyah, M. (2024). Have MSMEs in Indonesia Focused on Business Sustainability? The Influence of Environmental Orientation, Technology Implementation, Green Marketing, and Innovation Capability. *Jurnal Riset Ekonomi Manajemen (REKOMEN)*. https://doi.org/10.31002/rekomen.v7i2.1679

Ginting, H., & Rijal, S. (2024). Assessing The Role Of Environmental Innovation, Credit Access, And Governance In Shaping The Financial Sustainability Of

Indonesian MSMEs. *Journal of Economic, Business and Accounting (COSTING)*. https://doi.org/10.31539/costing.v7i4.9655

Hadi, D., Wahyuhastuti, N., Wuryandini, E., & Putra, F. (2024). Sustainability Strategy in the Development of MSMEs by Bank Indonesia in Increasing Economic Growth by Using Green Economic Policy as an Intervening Variable. *Revista de Gestão Social e Ambiental*. https://doi.org/10.24857/rgsa.v19n1-059

Indriastuti, M., & Mutamimah, M. (2023). Green Accounting and Sustainable Performance of Micro, Small, and Medium Enterprises: The Role of Financial Performance as Mediation. *The Indonesian Journal of Accounting Research*. https://doi.org/10.33312/ijar.691

Jayanto, I., Rahmiyati, N., Prihanto, P., & Parwita, G. (2025). The Impact of Green Innovation, Market Orientation, and Digitalization on MSME Performance in Indonesia. *Indo-Fintech Intellectuals: Journal of Economics and Business*. https://doi.org/10.54373/ifijeb.v5i2.2940

Joeliaty, J. (2024). Green Growth and Beyond: The Influence of Environmental Practices, Financial Management, Market Access, and Digital Integration on the Resilience and Sustainability Business Practices of MSMEs in Indonesia. *International Journal of Business, Law, and Education*. https://doi.org/10.56442/ijble.v5i1.446

Kusuma, H., Muafi, M., & Kholid, M. (2023). Pro-Environmental MSMEs Performance: The Role of Green IT Adoption, Green Innovative Behavior, and Financial Accounting Resources. *Journal of Law and Sustainable Development*. https://doi.org/10.55908/sdgs.v11i4.673

Muafi, M., & Roostika, R. (2022). MSMEs Business Sustainability Models in Indonesia. *International Journal of Sustainable Development and Planning*. https://doi.org/10.18280/ijsdp.170120

Setyawati, A., Suggangga, A., Wibowo, N. A., Rahma, A., & Maula, F. I. (2023). Ability to use digitalization in increasing the competitive advantages of MSMEs in Indonesia: A systematic literature review (SLR). *International Journal of Economics and Management Research, 2*(2), 48–65. https://doi.org/10.55606/ijemr.v2i2.94

Sirjani, N., Taufiq, A., Andriani, D., Erlianasari, N., & Wikanso, W. (2025). Green Human Resource Management and Business Performance of MSMEs in Indonesia. *International Journal of Innovative Research and Scientific Studies*. https://doi.org/10.53894/ijirss.v8i2.5766

Soesetio, Y., Soetjipto, B. E., Handayati, P., Winarno, A., Rudiningtyas, D. A., Mawardi, M. C., & Realita, T. N. (2024). Innovation and firm competitiveness as intervening variables in improving financial performance of MSMEs. *Jurnal Aplikasi Manajemen, 22*(2), 524–546. https://doi.org/10.21776/ub.jam.2024.022.02.16

Sumastuti, E., Harahap, S., & Sianipar, G. (2024). Exploring The Impact Of Green Finance, Financial Literacy, And Social Capital On The Performance And Financial Sustainability Of Indonesian MSMEs. *Journal of Economic, Business and Accounting (COSTING)*. https://doi.org/10.31539/costing.v7i4.9719

Susanti, E. (2023). MSMEs performance and competitive advantage: How digital transformation and innovation mediate the effects in women-owned MSMEs.

Cogent Business & Management, 10(1), Article 2239423. https://doi.org/10.1080/23311975.2023.2239423

Umar, F., et al. (2024). The effect of digitalization on business performance: Mediating role of competitive advantage in SMEs in Semarang. *JOISER*, Issue 2024.

Whittleliang Hakki, T., Surjadi, M., & Jocelyn, J. (2024). Testing of MSME Financial Performance Model in Indonesia with Financial Technology Moderation and Green Innovation Towards Advanced Indonesia. *Dinasti International Journal of Education Management And Social Science, 6*(1), 508–519. https://doi.org/10.38035/dijemss.v6i1.3262

Yaskun, M., Sudarmiatin, S., Hermawan, A., & Rahayu, W. P. (2023). The effect of market orientation, entrepreneurial orientation, innovation, and competitive advantage on business performance of Indonesian MSMEs. *International Journal of Professional Business Review, 8*(4), Article E01563. https://doi.org/10.26668/businessreview/2023.v8i4.1563