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The Influence of Technology Adoption, Government Support, and the Implementation of Islamic Wealth Management on the Performance of MSMEs in Banda Aceh City

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ABSTRACT
Understanding MSME performance in regions with strong Islamic values requires attention to technological, institutional, and financial practices and their relevance to local businesses. This study examines the associations of technology adoption, government support, and Islamic Wealth Management with the performance of micro, small, and medium enterprises (MSMEs) in Banda Aceh, Indonesia. A quantitative survey was conducted among 100 MSME owners selected through purposive sampling. Eligible respondents actively managed their businesses, had experience using digital technology, and understood business financial management. Data were collected using questionnaires with a five-point Likert scale and analyzed through multiple linear regression. Technology adoption was positively associated with MSME performance ($\beta = 0.444$, $p < 0.001$), as was Islamic Wealth Management ($\beta = 0.398$, $p < 0.001$). Government support showed a negative coefficient but was not statistically significant at the 5% level ($\beta = -0.189$, $p = 0.057$). These results suggest that technology use and Islamic financial management practices are relevant to differences in business performance within the selected sample. The study contributes contextual evidence by examining these three factors within a single model in a Sharia-based regional setting. Practical implications include strengthening digital capabilities and supporting financial management practices consistent with Islamic principles. The government support result warrants further investigation into program access, delivery, and relevance rather than a conclusion that support is ineffective. The nonprobability sample and survey design limit generalization and causal interpretation.

Keywords:
Technology Adoption
Government Support
Islamic Wealth Management
MSME Performance

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1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in Indonesia's economy, particularly in supporting GDP growth and employment, while promoting poverty alleviation, inclusive development, and long-term economic sustainability (Choiruddin et al., 2025; Munawar

et al., 2025; Rakhmawati et al., 2025). MSMEs also support sustainability by balancing financial, environmental, and social objectives through responsible business practices, sustainable innovation, and environmental initiatives that strengthen long-term business resilience and contribute to sustainable development (Almilia et al., 2025; Lee & Jung, 2025). MSMEs contribute more than 60 percent to the national Gross Domestic Product (GDP) and absorb approximately 97 percent of the workforce, highlighting their essential role in supporting economic growth, employment generation, and national development (Rumijati & Rahman Hakim, 2023; Tirtayasa & Rahmadana, 2023; Wolor et al., 2024). This indicates that the sustainability of MSMEs is crucial to maintaining national economic stability, as these enterprises support employment, regional economic development, and income generation, while requiring legal protection and effective supply chain management (Margareta & Hendrawan, 2024; Wube & Atwal, 2024). Therefore, strengthening regulatory support and improving supply chain efficiency are essential to enhancing MSME resilience, ensuring business continuity, and sustaining their long-term contribution to economic development.

Nevertheless, MSMEs continue to face various structural challenges, including limited access to capital, low levels of digital literacy, and inadequate managerial capabilities, which hinder technological adoption, business competitiveness, and the implementation of sustainable business practices (Mah et al., 2023; Mastintianto et al., 2025). These challenges have become increasingly significant in the digital era, where business actors are required to adapt to rapid technological advancements, adopt digital business models, strengthen technological competencies, and enhance competitiveness to ensure long-term sustainability (Gutu & Medeleanu, 2023; Riptanti et al., 2024). Therefore, MSMEs need to develop their digital capabilities, improve access to technological resources, and integrate digital solutions into their business operations. Such efforts can help enterprises respond more effectively to changing market conditions, strengthen operational resilience, and maintain business continuity. Furthermore, continuous technological adaptation is essential for creating sustainable competitive advantages and supporting long-term business growth.

Technology adoption has emerged as a critical factor in enhancing operational efficiency and expanding market access for MSMEs, particularly through e-commerce integration, digital infrastructure, and improved organizational readiness (Indiani et al., 2025). The utilization of digital platforms such as e-commerce, social media, and digital payment systems has been shown to improve business performance by expanding customer reach, strengthening marketing effectiveness, reducing operational costs, and increasing competitiveness (Ullah et al., 2023). However, not all MSMEs are able to optimally adopt these technologies due to constraints related to knowledge and infrastructure, including limited digital literacy, inadequate training, insufficient resources, and unequal access to technological support (Asmar et al., 2025; Setini et al., 2025). These limitations may hinder the ability of MSMEs to integrate digital technologies effectively into their business operations and respond to changing market demands. Therefore, improving digital competencies, expanding access to technological infrastructure, and strengthening collaboration among business actors and supporting institutions are essential to facilitate digital transformation and enhance long-term business competitiveness.

In addition, government support plays a vital role in promoting MSME development through various policies and programs, including entrepreneurship training, digitalization initiatives, financial assistance, halal certification support, and collaborative innovation to strengthen business competitiveness (Astuty et al., 2024; Fiona et al., 2024; Sisay et al., 2025). However, the effectiveness of these programs remains subject to debate, particularly in non-metropolitan areas such as Banda Aceh, where disparities in infrastructure, entrepreneurial capabilities, institutional coordination, and access to business support require further evaluation (Fiona et al., 2024; Sisay et al., 2025). Therefore, a comprehensive assessment is necessary to determine whether these programs effectively address the specific needs of local MSMEs and contribute to sustainable business development.

On the other hand, the implementation of Islamic Wealth Management (IWM) represents a relevant approach within the context of a Sharia-based region, emphasizing ethical wealth

distribution, responsible financial management, and sustainable economic welfare (Rahim et al., 2021; Siregar et al., 2024). IWM emphasizes principles of justice, sustainability, and ethical value (barakah) in financial management, promoting equitable wealth distribution and financial accountability. However, the application of IWM among MSMEs remains relatively limited. Previous studies have generally examined only one or two variables in isolation. Therefore, this study offers novelty by integrating technology adoption, government support, and Islamic Wealth Management into a single empirical research model in Banda Aceh City.

2. Method

This study employs a quantitative approach aimed at empirically examining the relationships and effects among the variables under investigation. Primary data were collected through the distribution of questionnaires to Micro, Small, and Medium Enterprise (MSME) actors operating in Banda Aceh City. The respondents in this study consist of MSME owners who have actively managed their businesses and possess experience in business activities, particularly those related to the use of technology and financial management practices.

The population of this study comprises all MSME actors in Banda Aceh City. The sampling technique applied is purposive sampling, in which respondents are selected based on specific criteria relevant to the research objectives. A total of 100 respondents were included in this study. The selection criteria include MSME actors who are actively running their businesses, have experience in utilizing digital technology, and possess an understanding of business financial management. The data utilized in this study consist of both primary and secondary data. Primary data were obtained directly through the distribution of questionnaires using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Meanwhile, secondary data were collected from various sources, including official reports, publications from relevant institutions, and scientific literature related to the research topic. This study was conducted in the Banda Aceh City area, covering the business locations of the respondents.

Data analysis was carried out using SPSS version 27 software (Tembo et al., 2024). The analysis process began with instrument quality testing, including validity and reliability tests, to ensure that the questionnaire used was both appropriate and consistent. Subsequently, classical assumption tests were conducted, including tests for normality, multicollinearity, and heteroscedasticity, to ensure that the data met the requirements for regression analysis.

Descriptive analysis is employed to illustrate the characteristics of the data and respondents' perceptions of the research variables using Likert scale interval classifications (Elkhishin & Mohieldin, 2021). To examine the effect of independent variables on the dependent variable, multiple linear regression analysis is applied, the regression model in this study is formulated as follows:

$$Y = b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$$

$$KI = b_1AD + b_2DU + b_3IS + e$$

Where KI represents MSME performance, AD denotes technology adoption, DU refers to government support, and IS represents Islamic Wealth Management. β indicates the regression coefficients, and ε denotes the error term.

3. Results

Based on descriptive statistics, the characteristics of respondents in this study provide an overview of the profile of Micro, Small, and Medium Enterprise (MSME) actors in Banda Aceh City. In terms of gender, respondents are predominantly female (60%), while males account for 40%, indicating a high level of female participation in micro-enterprise activities.

In terms of age, the majority of respondents fall within the 21–30 age group (35%), followed by those aged 31–40 (40%), 41–50 (20%), and above 50 years (5%). This indicates that MSME actors are largely within the productive age group. Based on educational attainment, 50% of respondents have completed senior high school or its equivalent, 30% hold diploma or undergraduate degrees, and 20% have basic education (elementary to junior high school). This suggests that most business

actors possess a moderate level of education. Regarding business duration, 45% of respondents have operated their businesses for 1 to 3 years, 30% for 4 to 5 years, and 25% for more than 5 years, indicating that the majority of businesses are still in the development stage. In terms of business type, the culinary sector dominates (40%), followed by retail/grocery trade (30%), services (15%), and other sectors such as fashion and handicrafts (15%).

Meanwhile, in terms of monthly income, most respondents earn between IDR 1,000,000 and IDR 3,000,000 (65%), followed by IDR 3,000,000 to IDR 5,000,000 (25%), and below IDR 1,000,000 (10%). Overall, these findings indicate that MSMEs in Banda Aceh City are predominantly micro-scale enterprises with relatively limited income levels, yet they possess growth potential through capacity enhancement and the adoption of technology.

Table 1. Validity Test Result

Variable	Item	R calculated	Nilai rtable	Notes
Technology Adoption (AD)	AD1	0,787	0,197	*Valid*
	AD2	0,830	0,197	*Valid*
	AD3	0,852	0,197	*Valid*
Government Support (DU)	DU1	0,823	0,197	*Valid*
	DU2	0,781	0,197	*Valid*
	DU3	0.869	0,197	*Valid*
Islamic Wealth Management (IS)	IS1	0,526	0,197	*Valid*
	IS2	0,824	0,197	*Valid*
	IS3	0,863	0,197	*Valid*
	IS4	0,865	0,197	*Valid*
	IS5	0,536	0,197	*Valid*
MSME Performance (KI)	KI1	0,732	0,197	*Valid*
	KI2	0,847	0,197	*Valid*
	KI3	0,864	0,197	*Valid*

Source: Data Processed

Table 1 presents the validity test results for the 14 questionnaire items measuring technology adoption, government support, Islamic Wealth Management, and MSME performance. All calculated Pearson correlation coefficients exceed the critical value of 0.197, indicating that every item satisfies the validity criterion applied in this study. Technology adoption items show correlations ranging from 0.787 to 0.852, while government support items range from 0.781 to 0.869. Islamic Wealth Management exhibits a wider range, from 0.526 to 0.865, with IS1 and IS5 displaying comparatively lower correlations than the other indicators. Nevertheless, both remain above the specified threshold and are therefore retained. MSME performance items demonstrate correlations between 0.732 and 0.864, also meeting the validity requirement. Overall, these findings support retaining all questionnaire items for subsequent reliability testing and further statistical analysis. However, these correlations alone do not establish construct validity, which would require additional evidence concerning the measurement structure and construct distinctiveness.

Table 2. Reliability Test Result

No	Variable	Number of Item	*Cronbach Alpha*	Standard	Notes
1	Technology Adoption (AD)	3	0,761	0,60	Reliable
2	Government Support (DU)	3	0,764	0,60	Reliable
3	*Islamic Wealth Management* (IS)	5	0,774	0,60	Reliable
4	MSME Performance (KI)	3	0,771	0,60	Reliable

Source: Data Processed

Table 2 presents the reliability test results for the four research variables, assessed using Cronbach's alpha to examine the internal consistency of their respective questionnaire items. All variables exceed the minimum threshold of 0.60 adopted in this study, indicating that each scale meets the specified reliability criterion. Technology Adoption, measured using three items, records a Cronbach's alpha of 0.761, while Government Support, also measured using three items, achieves a value of 0.764. Islamic Wealth Management, comprising five items, produces the highest alpha coefficient at 0.774. Meanwhile, MSME Performance, assessed through three items, records an alpha of 0.771. The coefficients range narrowly from 0.761 to 0.774, suggesting broadly comparable internal consistency across the four scales. These findings indicate that the items within each scale provide reasonably consistent measurements of the corresponding research variable among the surveyed MSME owners in Banda Aceh City. Accordingly, all four scales can be retained for subsequent statistical analysis, including the examination of relationships between the independent variables and MSME performance. Nevertheless, Cronbach's alpha reflects internal consistency rather than measurement validity or stability over time. Therefore, these results should be interpreted alongside the validity assessment and should not independently be taken as evidence of comprehensive instrument quality.

All variables in this study exhibit Cronbach's Alpha values above the minimum threshold of 0.60, indicating a satisfactory level of reliability. This implies that the measurement instrument (questionnaire) for each variable demonstrates high internal consistency and is reliable for data collection. High reliability further strengthens the validity of the instrument and ensures that the results obtained accurately reflect the variables under investigation.

The normality test in this study was conducted using three methods: the Kolmogorov–Smirnov (K–S) test, histogram analysis, and the normal probability plot (P–Plot). Based on the P–Plot analysis, the data points follow the diagonal line pattern, indicating that the data distribution satisfies the normality assumption. Furthermore, the statistical normality test using the Kolmogorov–Smirnov method shows an Asymp. Sig. (2-tailed) value of 0.129, which is greater than the significance level of 0.05. This result indicates that the data are normally distributed, as there is no significant deviation from normality.

Table 3. Normality Test Result

Statistic Test	**Value**
N	100
Mean	0,000
Std. Deviation	1,25096
Sig. (2-tailed)	0,129

Source: Data Processed

The multicollinearity test demonstrates that all variables meet the required criteria, with VIF values below 10 and tolerance values exceeding 0.10, indicating the absence of multicollinearity in the model.

Table 4. Multicolinearity Test Result

Variable	**Tolerance**	**VIF**
Technology Adoption (AD)	0,568	1,760
Government Support (DU)	0,635	1,575
Islamic Wealth Management (IS)	0,691	1,448

Source: Data Processed

The heteroscedasticity test was performed by analyzing the distribution pattern of residual scatterplots. The absence of a specific pattern suggests that the regression model is free from heteroscedasticity.

Table 5. Heteroscedasticity Test Result

Variable	**Sig. (2-tailed)**
Technology Adoption (AD)	0,057
Government Support (DU)	0,513
Islamic Wealth Management (IS)	0,156

Source: Data Processed

The results of the multiple linear regression equation are presented in Table 6:

Table 6. Multiple Linear Regression Results

Coefficients[a]				
		Standardized Coefficients		
Model		Beta	T	Sig.
1	(Constant)		3,617	0,000
	Technology Adoption	0,444	4,284	0,000
	Government Support	-0,189	-1,926	0,057
	Islamic Wealth Management	0,398	4,239	0,000

a. Dependent Variable: Kinerja UMKM
Source: Data Processed

Based on the multiple linear regression equation, the results can be interpreted in detail as follows:

1. The regression coefficient for the Technology Adoption variable is positive, with a value of 0.444. This indicates that a one-unit increase in technology adoption leads to an increase in MSME performance by 0.444 (44.4%).
2. The regression coefficient for the Government Support variable is negative, with a value of -0.189. This implies that a one-unit increase in government support leads to a decrease in MSME performance by 0.189 (−18.9%).
3. The regression coefficient for the Islamic Wealth Management variable is positive, with a value of 0.398. This indicates that a one-unit increase in Islamic Wealth Management leads to an increase in MSME performance by 0.398 (39.8%).

4. Discussion

The results of hypothesis testing in this study indicate that, partially, the variables of Technology Adoption and Islamic Wealth Management have a positive and significant effect on MSME performance, as evidenced by significance values below 0.05. This suggests that increased utilization of technology and the implementation of Sharia-based financial management contribute to improved business performance. Specifically, digital accounting systems enhance financial reporting accuracy and managerial decision-making, while technological capabilities support operational efficiency, innovation, competitiveness, and long-term business sustainability (Bag et al., 2024; Lutfi et al., 2022; Prokop et al., 2024). These findings highlight the importance of integrating technological advancements into business management practices to strengthen organizational capabilities and adaptability. Furthermore, combining technological efficiency with Sharia-based financial principles may provide MSMEs with a more comprehensive approach to financial accountability, responsible resource allocation, and sustainable business development.

Conversely, the Government Support variable does not exhibit a significant partial effect on MSME performance, as indicated by a significance value greater than 0.05. This condition implies that government programs or policies have not been fully perceived or directly experienced by business actors in enhancing their performance. Such limitations may reflect unequal access to financial assistance, inadequate technical support, and differences in business needs, highlighting the importance of more targeted and accessible policy interventions (Picas et al., 2021; Pinedo-López et al., 2024; Sakai & Yao, 2023). Therefore, the effectiveness of government support should not be assessed solely by the availability of programs, but also by their accessibility, relevance, and ability to address the specific challenges faced by MSMEs. Strengthening policy implementation through simplified administrative procedures, improved information dissemination, and assistance tailored to business characteristics may help ensure that government initiatives provide more meaningful contributions to business performance and long-term sustainability.

However, based on the results of the simultaneous test (F-test), it is found that Technology Adoption, Government Support, and Islamic Wealth Management collectively have a significant effect on MSME performance, as indicated by the F-significance value being less than 0.05. This demonstrates that these three variables jointly explain the variation in MSME performance. Furthermore, the coefficient of determination (R^2) indicates that the research model has a reasonably strong explanatory power in accounting for variations in MSME performance, demonstrating the importance of organizational ambidexterity and innovation capability. Most of the changes in the dependent variable can be explained by the independent variables included in this study, while the remaining variation is influenced by other factors outside the model, reflecting additional contextual influences not captured by the regression (Vardopoulos et al., 2024; Yang et al., 2024). This suggests that although the selected independent variables provide substantial explanatory power, they do not fully account for all variations in the dependent variable. Therefore, the findings should be interpreted by considering the potential influence of additional factors that were not incorporated into the analysis. Future research could explore these factors to develop a more comprehensive understanding of the determinants of the dependent variable and improve the explanatory capacity of the regression model.

5. Conclusion

This study examined the associations of technology adoption, government support, and Islamic Wealth Management with MSME performance in Banda Aceh City. The findings show that technology adoption and Islamic Wealth Management are positively and significantly associated with business performance, whereas government support has a negative but statistically insignificant coefficient after accounting for the other predictors. These results suggest that digital technology use and financial management practices aligned with Islamic principles are relevant to understanding performance differences among the surveyed enterprises. The study contributes contextual evidence by integrating technological, institutional, and Islamic financial dimensions within a single analytical model in a region characterized by strong Islamic values. Its contribution lies in demonstrating the relevance of examining these dimensions together, while recognizing that their associations with performance differ. The findings do not establish causal relationships or demonstrate that government assistance reduces business performance.

Practically, MSME owners should consider strengthening digital capabilities and incorporating appropriate technologies into business operations. They may also benefit from developing financial management practices consistent with Sharia principles, supported by relevant training and business assistance. For policymakers, the insignificant government support coefficient warrants examination of program accessibility, implementation, and alignment with business needs. These aspects represent priorities for further assessment rather than confirmed explanations for the observed result. Several limitations should guide interpretation. The study used a purposive sample of 100 MSME owners in one city, restricting the generalizability of its findings. Its questionnaire survey design also limits causal inference and cannot establish how the relationships evolve over time. Future studies should include larger, more diverse samples across regions and business sectors. Longitudinal designs, complementary qualitative evidence, and additional organizational or contextual variables could clarify the mechanisms connecting technology adoption, Islamic Wealth Management, and government support with MSME performance, thereby informing more responsive enterprise development strategies and support programs.

6. References

Almilia, L. S., Mursita, L. Y., Mustafida, N., Rachmadia, R., & Rohmayati, N. S. (2025). Green campaign, governance system, and sustainability development goal performance in Indonesian MSMEs. *International Journal of Management and Sustainability*, *14*(3), 918–928. https://doi.org/10.18488/11.v14i3.4422

Asmar, A., Adriansyah, A., & Anas, A. M. (2025). A Systematic Literature Review on Micro, Small, and Medium Enterprises (MSMEs) Performance: National and International Evidence.

Daengku: Journal of Humanities and Social Sciences Innovation, *5*(5), 582–598. https://doi.org/10.35877/454RI.daengku4302

Astuty, E., Ikhsan, R. B., & Aryanto, R. (2024). Sustainable entrepreneurial culture in promoting innovation: a higher education perspective. *International Journal of Evaluation and Research in Education (IJERE)*, *13*(1), 170. https://doi.org/10.11591/ijere.v13i1.26740

Bag, S., Gupta, S., Chan, H.-L., & Kumar, A. (2024). Building smart product-service systems capabilities for circular supply chains in the Industry 4.0 era. *Transportation Research Part E: Logistics and Transportation Review*, *188*, 103625. https://doi.org/10.1016/j.tre.2024.103625

Choiruddin, M. N., Pratikto, H., F. Danardana Murwani, & Nurika Restuningdiah. (2025). Financial Literacy, FinTech, and Contemporary Innovation in Islamic Economic Law: An Analysis of MSME Performance Sustainability in Indonesia and Malaysia. *MILRev: Metro Islamic Law Review*, *4*(2), 976–1008. https://doi.org/10.32332/milrev.v4i2.10164

Elkhishin, S., & Mohieldin, M. (2021). External debt vulnerability in emerging markets and developing economies during the COVID-19 shock. *Review of Economics and Political Science*, *6*(1), 24–47. https://doi.org/10.1108/REPS-10-2020-0155

Fiona, F., Salim, M., Hadi, E. D., & Hayu, R. S. (2024). The Role Of Entrepreneurship Orientation In The Effect Of Digital Marketing Through Social Media On The Performance Of Micro, Small And Medium Enterprises (MSMEs) In Indonesia. *Journal of Sustainability Science and Management*, *19*(7), 70–94. https://doi.org/10.46754/jssm.2024.07.005

Gutu, I., & Medeleanu, C. N. (2023). Assessing Teleworkforce and Electronic Leadership Favorable for an Online Workforce Sustainability Framework by Using PLS SEM. *Sustainability*, *15*(18), 13615. https://doi.org/10.3390/su151813615

Indiani, N. L. P., Keshminder, J. S., Wiratama, N. I., & Amertha, G. S. (2025). Unlocking e-commerce potential in SMEs: an integrative framework for adoption in emerging markets. *Humanities and Social Sciences Communications*, *12*(1), 766. https://doi.org/10.1057/s41599-025-04952-3

Lee, S.-Y., & Jung, S. (2025). Internal and External Drivers That Foster Sustainability—Integrated Innovation Management of Micro and SME Suppliers: A Focus on Corporate Entrepreneurship. *Sustainability*, *17*(18), 8458. https://doi.org/10.3390/su17188458

Lutfi, A., Al-Khasawneh, A. L., Almaiah, M. A., Alsyouf, A., & Alrawad, M. (2022). Business Sustainability of Small and Medium Enterprises during the COVID-19 Pandemic: The Role of AIS Implementation. *Sustainability*, *14*(9), 5362. https://doi.org/10.3390/su14095362

Mah, P. Y., Chuah, F., & E-Vahdati, S. (2023). Corporate Sustainability Orientation, Sustainable Development Practices, and Firm Performance of MSMEs in Malaysia. *Asian Journal of Business Research*, *13*(2). https://doi.org/10.14707/ajbr.230152

Margareta, Y., & Hendrawan, D. (2024). Legal Protection for Micro, Small and Medium Enterprises in Nature Tourism Business. *Pakistan Journal of Life and Social Sciences (PJLSS)*, *22*(2). https://doi.org/10.57239/PJLSS-2024-22.2.00792

Mastintianto, D., Meutia, E., Wijaya, L., Ng, K. C., & Phungpumkaew, H. (2025). Crafting Digital Pathways. *International Journal of Asian Business and Information Management*, *16*(1), 1–18. https://doi.org/10.4018/IJABIM.371421

Munawar, F., Widjajanta, B., & Yudanegara, A. (2025). Sustainable Gastronomy Practices in Evolving Markets: A Circular Economy Framework from Indonesian Culinary Enterprises. *International Journal of Sustainable Development and Planning*, *20*(11), 4877–4890. https://doi.org/10.18280/ijsdp.201127

Picas, S., Reis, P., Pinto, A., & Abrantes, J. L. (2021). Does Tax, Financial, and Government Incentives Impact Long-Term Portuguese SMEs' Sustainable Company Performance? *Sustainability*, *13*(21), 11866. https://doi.org/10.3390/su132111866

Pinedo-López, J., Baena-Navarro, R., Durán-Rojas, N., Díaz-Cogollo, L., & Farak-Flórez, L. (2024). Energy Transition in Colombia: An Implementation Proposal for SMEs. *Sustainability*, *16*(17), 7263. https://doi.org/10.3390/su16177263

Prokop, V., Zapletal, D., Stejskal, J., Giglio, C., & Appolloni, A. (2024). Business model innovation elements and product innovation radicalness: Central European lessons for innovation leaders and followers. *Oeconomia Copernicana*, *15*(2), 471–506. https://doi.org/10.24136/oc.3004

Rahim, A. K. A., Bakar, A. A., & Nor, M. M. M. (2021). The Innovations of Hibahasan Instrument of Islamic Finance and Islamic Estate Management in MalaysiaAhmad Khilmy Abdul Rahim. *Webology*, *18*(SI03), 112–126. https://doi.org/10.14704/WEB/V18SI03/WEB18023

Rakhmawati, N. A., Fabroyir, H., Hafidz, I., & Arifiani, S. (2025). Impact of an Augmented Reality App and Gamification on Public Visibility of Halal Certification in Indonesia. *International Journal on Food System Dynamics*, 1–18. https://doi.org/10.1163/18696945-bja00019

Riptanti, E. W., Irianto, H., Widiyanti, E., & Prasetyo, A. (2024). Inclusivity in the sustainability of micro and small enterprises based on digital technology: A case study in central Java, Indonesia. *Journal of Infrastructure Policy and Development*, *8*(9), 8300. https://doi.org/10.24294/jipd.v8i9.8300

Rumijati, A., & Rahman Hakim, A. (2023). Innovative work behavior and self-efficacy: Does entrepreneurial leadership impact MSME business performance? *Problems and Perspectives in Management*, *21*(4), 304–315. https://doi.org/10.21511/ppm.21(4).2023.24

Sakai, P., & Yao, Z. (2023). Financial losses and flood damages experienced by SMEs: Who are the biggest losers across sectors and sizes? *International Journal of Disaster Risk Reduction*, *91*, 103677. https://doi.org/10.1016/j.ijdrr.2023.103677

Setini, M., Yasa, P. N. S., & Sitiari, N. W. (2025). MSME digitalization: How are social capital factors in encouraging the use of digital applications? *International Journal of Data and Network Science*, *9*(1), 47–56. https://doi.org/10.5267/j.ijdns.2024.10.007

Siregar, F. R., Syahbudi, M., & Ilhamy Nasution, M. L. (2024). The Impact of Zakat Utilization and Business Financing on Welfare with Business Sustainability as a Moderating Variable (Case Study of BAZNAS Labuhanbatu Utara). *Jurnal Ilmiah Mizani: Wacana Hukum, Ekonomi Dan Keagamaan*, *11*(2), 363. https://doi.org/10.29300/mzn.v11i2.4444

Sisay, K., Molla, S., Mekonnen, L., & Gadisa, Z. (2025). Nexus between business development service and women entrepreneurs' performance: Implication for MSMEs growth and inclusive economic development in Ethiopia. *Journal of Open Innovation: Technology, Market, and Complexity*, *11*(1), 100514. https://doi.org/10.1016/j.joitmc.2025.100514

Tembo, C., Portsmouth, L., & Burns, S. (2024). Cultural and social factors associated with generalized anxiety disorder among adolescent mothers during the postpartum period in Malawi: a cross-sectional survey. *BMC Global and Public Health*, *2*(1), 50. https://doi.org/10.1186/s44263-024-00080-3

Tirtayasa, S., & Rahmadana, M. F. (2023). Mediating Effect of Product Innovation on Market Orientation and Marketing Performance of SME'S During the COVID-19 Pandemic in Indonesia. *International Journal of Sustainable Development and Planning*, *18*(2), 393–399. https://doi.org/10.18280/ijsdp.180207

Ullah, I., Khan, M., Rakhmonov, D. A., Bakhritdinovich, K. M., Jacquemod, J., & Bae, J. (2023). Factors Affecting Digital Marketing Adoption in Pakistani Small and Medium Enterprises. *Logistics*, *7*(3), 41. https://doi.org/10.3390/logistics7030041

Vardopoulos, I., Maialetti, M., Scarpitta, D., & Salvati, L. (2024). Spatially Explicit Analysis of Landscape Structures, Urban Growth, and Economic Dynamics in Metropolitan Regions. *Urban Science*, *8*(4), 150. https://doi.org/10.3390/urbansci8040150

Wolor, C. W., Madli, F., Rababah, M. A., Mukhibad, H., & Hoo, W. C. (2024). Examining the

Impact of Knowledge Management Use and Innovation on Business Performance of MSMEs in the Digital Age. Case Study MSMEs in Indonesia. *Journal of Sustainability Research*, *6*(4). https://doi.org/10.20900/jsr20240070

Wube, M. C., & Atwal, H. (2024). Supply chain management of micro, small, and medium enterprises (MSMEs) in Africa: a bibliometric analysis. *Journal of Innovation and Entrepreneurship*, *13*(1), 39. https://doi.org/10.1186/s13731-024-00388-2

Yang, L., Zhang, J., Wang, J., Han, S., Guo, Z., Fan, C., & Yu, J. (2024). Relationships between Tree Species Diversity and Aboveground Biomass Are Mediated by Site-Dependent Factors in Northeastern China Natural Reserves on a Small Spatial Scale. *Sustainability*, *16*(19), 8378. https://doi.org/10.3390/su16198378