

## ESCALATION OF GLOBAL COMPETITIVENESS OF SONGKOK MSMES IN BUNGAH DISTRICT THROUGH ARTIFICIAL INTELLIGENCE (AI)-BASED DIGITAL MARKETING AND HALAL CERTIFICATION

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### ABSTRACT

Bungah District is known as the center of the Songkok industry in Gresik Regency and has significant economic potential. However, the sustainability of this business faces serious challenges, including market stagnation due to low digital literacy and the absence of halal product assurance, which is now an absolute requirement for the global market. The inability to adapt to technology makes it difficult for local products to penetrate modern marketplaces. This community service program aims to enhance the global competitiveness of Songkok MSMEs by adopting Artificial Intelligence (AI) technology in marketing strategies and accelerating business legitimacy. The approach used is Community-Based Participatory Research (CBPR) integrated with the Participatory Learning and Action (PLA) method. This activity actively involved 30 Songkok artisans through stages of socialization, technical training in creating visual content with Canva AI, and assistance with registering SiHalal accounts. Program effectiveness was measured using comparative pre-test and post-test analysis. The results showed a significant increase in partners' average understanding, rising from an initial score of 10% to 82.5% post-intervention. In addition to improving cognitive competence, this activity successfully produced tangible outputs, including 28 AI-based professional digital catalog designs, 30 active social media business accounts, and 30 draft documents for halal certification submissions under the self-declare scheme. The program concludes that integrating efficient AI technology with compliance with Sharia regulations effectively increases partners' self-efficacy to transform from traditional markets into a competitive, sustainable export ecosystem.

**Keywords:** *Artificial Intelligence (AI), Digital Marketing, Halal Certification, Sharia Economy, Songkok MSMEs*

### INTRODUCTION

Bungah District has long been known as the epicenter of national songkok production, with hundreds of skilled artisans scattered across various villages and forming a unique cluster of traditional handicraft industries (Ridwan & In'am, 2021). This business community exhibits the social characteristics typical of Gresik's coastal community, with strong group solidarity (Syafiq et al., 2022). This pattern of relationships is not much

different from the dynamics in recitation groups or other local communities, which are often the driving force of the mosque-based economy, where trust, cooperation, and social networks become valuable social capital. However, behind the power of social capital, the challenges of modern times are real (Lubis et al., 2025). Based on field observations, the majority of business actors or regional partners still rely heavily on conventional marketing systems. Their primary strategy still depends on selling to stores or on offline orders from existing customers, which significantly limits its market reach. In addition, the most prominent limitation is in the ability to produce engaging and professional visual content. In an era where digital marketplaces rely heavily on enthralling visual displays to capture consumers' attention, this lack is a major obstacle for them to compete and expand market penetration to a wider range of online platforms (Fetrianggi, 2025).

Based on financial and digital literacy data in general, it can be seen that although the composite literacy index shows an increase, the specific understanding of Islamic financial instruments and the use of advanced technologies such as artificial intelligence AI and data analytics is still below the ideal number (octavina & Rita, 2021). This phenomenon is very felt at the community level, for example, in MSME actors in Bungah. In these areas, the level of knowledge and adoption of AI-based tools for business purposes is estimated to be very low, at below 15 percent (Sánchez et al., 2025). This figure reflects a significant structural knowledge gap, which not only limits the innovation capacity and operational efficiency of business actors but also has the potential to widen their competitive distance from competitors who are already better at leveraging technological advances (Eka Lidia Riska et al., 2024).

Based on the results of the initial survey and a focus group discussion with songkok business actors in Bungah, several interrelated problems were identified. First, the majority of artisans still have low digital marketing literacy, so they are not able to optimize social media professionally (Eka Lidia Riska et al., 2024). They admitted they had difficulty compiling product narratives (copywriting) and graphic design that could compete in the global market. Second, even though songkok products are fabric-based (non-food), awareness of the importance of halal certification as universal branding remains very limited (Arofah et al., 2025). This condition is a serious obstacle, especially in efforts to export products to countries in the Middle East. Third, AI technologies, such as chatbots for customer service or AI-based design tools for product catalogs, have not been implemented at all, resulting in inefficient business operations (Sánchez et al., 2025).

Finally, the absence of a clear marketing strategy and a structured business model results in products that are diverse but not profitably sustainable.

This service program is designed to address these problems through a Community-Based Participatory Research (CBPR) approach that actively involves partners at every stage. The primary targets of this activity include several crucial aspects. First, the program aims to improve digital literacy by training partners in using Artificial Intelligence (AI)-based applications for visual content creation, such as leveraging AI features in Canva, as well as improving social media management capabilities. Second, this program focuses on accelerating product legality by providing technical assistance with halal certification registration, primarily through a self-declaration mechanism appropriate for micro-scale artisans. Third, this program is designed to strengthen business models by compiling a Business Model Canvas (BMC) integrated with digital marketing strategies to ensure long-term business sustainability.

This service activity is designed with measurable targets to create a real and sustainable impact. Quantitatively, this program is expected to significantly increase understanding among business partners, with a target of above 80% in the areas of digital literacy and business management taught. On the other hand, from the perspective of legality and competitiveness, the concrete target is the issuance of a halal certification registration number for Bungah songkok products, which will expand market access, especially in countries with Muslim consumer preferences. More than just a momentary provision of technical assistance, this initiative is a strategic, concrete effort to advance the achievement of the global development goals. This program directly supports the Sustainable Development Goals (SDGs), especially Goal 8, which advocates for inclusive and sustainable economic growth and productive employment by empowering local microenterprises. In addition, this activity aligns with the 4th point of the SDGs on quality education by improving the quality of technology education and relevant skills for local communities, enabling them to be not only spectators but also active actors in the transformation of the digital economy.

## **METHOD**

This community service program is designed using a Community-Based Participatory Research (CBPR) approach (Oetzel et al., 2018) to ensure the sustainability and relevance of interventions to the specific needs of songkok artisans in Bungah District.

This approach emphasizes equal participatory collaboration, where academics and MSME actors serve as active subjects or development partners throughout the process, from problem identification to solution evaluation. The activity was carried out in Bungah District, Gresik Regency, which is the center of the songkok industry, involving 30 songkok MSME actors as the main target audience, who have limited digital literacy and do not hold halal certification.

The implementation is divided into five systematic stages. Phase I is Coordination and Situation Analysis (Preparation), during which the team conducts field surveys and Focus Group Discussions (FGD) with key figures and artisan community administrators to identify technical challenges in digital marketing, prepare technical proposals, and handle licensing. Phase II is in the form of Socialization and Education, which aims to build conceptual understanding and a positive attitude toward partners' behavior regarding the importance of halal certification and AI-based marketing opportunities in the global market. Phase III is Training and Technology Application (Simulation), comprising technical training with simulation methods and hands-on practice in using the AI Content Generator for product descriptions, digital catalog design practices using AI-optimized Canva, and simulation of halal certification registration via a self-declaration mechanism. Phase IV is Intensive Assistance to ensure that partners can implement the training results in daily business operations, including assistance with preparing a roadmap for the development of digital-based collective business units. Finally, Phase V is Monitoring and Evaluation, which is carried out at the end of the activity by comparing pre-test and post-test scores to measure improvements in digital competence and understanding of the sharia economy, and to assess the overall effectiveness of the program.

### **Instrument and Analysis Data**

The data in this program are collected through triangulation to obtain a comprehensive and valid picture (Lester et al., 2020). Data collection was carried out using three main instruments: structured questionnaires that measured knowledge and perceptions; participatory observation sheets to record partners' engagement and practical abilities during training; and documentation of digital products created in real-world settings by partners, such as catalog design and social media content. The program's overall success is measured by the following main indicators: achieving an adequate understanding of the basic principles of collective business organization management and mastering technical skills in digital marketing technology. This analysis method was

explicitly chosen to test whether there was a significant difference between the partner's knowledge and ability score (measured through pre-test) before the program was implemented and a score after they had followed the entire series of interventions (measured through a post-test), to provide empirical evidence of the program's effectiveness in improving partner competency.

## RESULTS

### AI-Based Digital Marketing, Socialization, and Halal Education

The activity began with socialization attended by 30 songkok artisans in Bungah District. The material focused on the introduction of Artificial Intelligence (AI) as a business tool and the urgency of halal certification for the export market. In line with the Theory of Planned Behavior (TPB), this education aims to foster partners' positive attitudes toward switching from conventional to digital marketing. Before the presentation, a pre-test was conducted to assess the partners' initial capabilities, with the average understanding of AI still in the 10-15% range. During the presentation session, participants' enthusiasm was evident in their active engagement as they simulated using simple AI tools to create product descriptions (copywriting). This indicates that Perceived Behavioral Control is growing; Partners who initially felt that technology was complicated now feel able to use it. To assess the effectiveness of socialization, a post-test was administered at the end of the session. Comparative data on partner understanding are presented in Table 1 as follows:

**Table 1.** Increased Partner Understanding of Training Materials (n=30)

No	Comprehension Indicators	Average Pre-Test Score (%)	Average Post-Test Score (%)	Improvement (%)	Category
1.	Digital Marketing & AI Policy Concepts	12%	88%	76%	Significant
2.	Urgency & Halal Certification Procedure	15%	90%	75%	Significant
3.	Using AI for Visual Content (Canva)	10%	82%	72%	Significant
4.	Songkok Product Export Strategy	14%	85%	71%	Significant
<b>Overall Average</b>	<b>12,75%</b>	<b>86,25%</b>	<b>73,5%</b>	<b>Increase</b>	

Primary Data Processed, October 2025

Based on Table 1, there has been a significant surge in understanding. On the "Basic Concepts of Digital Marketing & AI" indicator, the score increased drastically from

12% to 88%. This proves that the socialization method that combines theory with hands-on demonstration is effective in overcoming partners' technical knowledge gaps. The increase in halal certification indicators (from 15% to 90%) also indicates partners' readiness to comply with global market regulations. Statistically, an average increase of 73.5% confirms the success of knowledge transfer. This cognitive change is the main capital for the next stage, namely technical assistance, because partners already have a firm intention to implement digitalization in their songkok business.

**Training and Application of Digital Technology**

The next stage is hands-on practical training using digital platforms that aims to transform knowledge into technical skills. Partners are trained using AI technology for three main aspects. First, Visual Content creation using AI-integrated Canva, second, Digital Copywriting for social media narratives, and third, Halal Certification Registration through a simulation of a self-declare system. During the training, partners receive intensive support to overcome technical obstacles. In the Theory of Planned Behavior (TPB), the provision of digital device facilities and technical guidance directly increases perceived behavioral control. Partners who previously felt incapable ("I'm gaptek") now have complete control because they have the tools and know how to use them. This is crucial to convert intent into sustainable business behavior.

The success of this technology's application is measured by two parameters: improvements in technical skills (Table 2) and the quantity of product outputs produced during the training (Table 3). The following is data on the analysis of the technical abilities of 30 Songkok artisans before and after the practical training:

**Table 2.** Analysis of Partner's Technical Skills Improvement (N=30)

No.	Comprehension Indicators	Average Pre-Test Score (%)	Average Post-Test Score (%)	Improvement (%)	Category
1.	Digital Catalog Design (Canva)	10%	85%	75%	Significant
2.	AI Prompt reation for Copywriting	5%	80%	75%	Significant
3.	Edit Product Photos with AL	15%	82%	67%	Significant
4.	Input Data System Self-Declare (Halal)	10%	90%	80%	Significant

No.	Comprehension Indicators	Average Pre-Test Score (%)	Average Post-Test Score (%)	Improvement (%)	Category
<b>Overall Average</b>	<b>10%</b>	<b>84,25%</b>	<b>74,25%</b>	<b>Increase</b>	

Primary Data Processed, October 2025

The data in Table 2 shows a significant increase in skills, especially in Halal data input (an 80% increase). This indicates that the direct simulation method is very effective. This pattern of improvement is similar to the findings in Canva's primary school teacher training, which showed a significant increase after hands-on practice. In addition to skill scores, the success of the training is evidenced by the physical outputs that the partners produce independently at the end of the session.

**Table 3.** Recapitulation of Partners' Digital Product Outputs

No.	External Type (Output)	Number of Targets	Realized Amount	Percentage Achievement	Remarks
1.	Digital Songkok Catalog Design	30 Design	28 Design	93%	Print/Upload Ready
2.	AI-Based Promotional Narrative (Caption)	60 Narrative	55 Narrative	91%	Language Variations (Indo/English)
3.	Draft Halal Submission Document	30 Documents	25 Documents	83%	5 Partners constrained by NIB
4.	Social Media Business Accounts	30 Account	30 Account	100%	Instagram/Facebook Business

Primary Data Processed, October 2025

Based on Table 3, partners successfully produced self-marketing content and draft halal submission documents with an average success rate of above 80%. This tangible output confirms that partners are not only "knowing" (cognitive) but also "capable" (psychomotor) of producing products of economic value for their songkok business.

### **Analysis to Improve Partner Understanding**

The effectiveness of this community service program was measured quantitatively using pre- and post-test instruments administered to 30 songkok artisans in Bungah District. This instrument is designed to measure the cognitive changes of partners related to digitalization materials and business legality. Based on the data recapitulation, there was a very significant shift in understanding between the conditions before and after the training. In the initial stage (pre-test), partners' average understanding is very low (5-15%),

indicating a serious knowledge gap regarding modern technology and halal regulations. However, after the intervention using the Participatory Learning and Action (PLA) method, all indicators showed a drastic increase. The results of the comparative analysis are presented in the following Table 4:

**Table 4.** Analysis of Comprehension Before and After Training (N=30)

No	Competency Indicators	Average Pre-test Score	Average Post-test Score	Upgrades (Points)	Category
1	AI Digital Marketing Concept	10%	85%	+75	<b>Very Significant</b>
2	Catalog Design Skills	15%	80%	+65	Significant
3	Halal Certification Procedure	5%	90%	+85	<b>Very Significant</b>
4	Business Model Strategy	10%	75%	+65	Significant
<b>Overall Average</b>	<b>10%</b>	<b>82,5%</b>	<b>+72,5</b>	<b>Increase</b>	

Primary Data Processed, October 2025

Based on Table 4, the most substantial improvement occurred in the Halal Certification Procedure indicator, with scores rising from 5% to 90%. This shows that the material on the Self-Declare mechanism has succeeded in breaking the old stigma among artisans that obtaining halal certification is complicated and expensive. Partners now understand that they can apply for certification independently and for free through the regular MSME route. A significant increase was also seen in the Digital Marketing AI Concept indicator (up 75 points). This proves that the introduction of Artificial Intelligence (AI) technology is no longer seen as an obstacle for rural communities, but rather as an efficiency solution. Participatory training methods that allow partners to test AI applications on their own devices directly have proven effective in increasing perceived behavioral control, enabling partners to adopt the technology independently. The average post-test score of 82.5% exceeded the program success indicator target (>75%). These results confirm that the structural knowledge gap, previously an obstacle to the competitiveness of songkok MSMEs in Bungah District, has been successfully minimized through this program. This increased understanding is a strong foundation for the program's sustainability in advancing the digitalization of independent businesses.

### **Program Sustainability**

To ensure the program continues beyond training, the service team, in partnership with the service team, has developed a structured sustainability strategy. The classic

challenge of the service program is the fading of the spirit of post-activity partners. Therefore, the team implements a multi-level mentoring strategy outlined in the long-term business development roadmap. These sustainability recommendations cover three main phases: digital stabilization, full legality, and market expansion. As an initial concrete step, an online discussion group (WhatsApp Group) called "Sentra Songkok Digital Bungah" has been formed, consisting of all training participants (30 people) and the service team. This forum functions as a means of periodic monitoring and remote technical consultation. In addition, it has been agreed to initiate cooperation with the University Business Incubator Center to facilitate wider market access and export assistance. This overall strategy is designed to support the achievement of the 8th Sustainable Development Goal (SDG), namely inclusive and sustainable economic growth and decent jobs for the people of Bungah District. Here are the details of the roadmap that has been agreed with partners:

**Table 5.** Roadmap for the Sustainability of MSME Development Songkok Bungah

<b>Fase</b>	<b>Time Period</b>	<b>Focus of Activities</b>	<b>Achievement Targets (Success Indicators)</b>
<b>I (Short Term)</b>	Months 1 - 3 Post-Training	<b>Stabilization &amp; Basic Legality</b>	<ol style="list-style-type: none"> <li>1. 100% Partners are members of WAG Monitoring.</li> <li>2. Issuance of NIB (Business Identification Number) for 30 partners.</li> <li>3. 30 active Business Social Media Accounts with a minimum of 3 contents/week.</li> </ol>
<b>II (Medium Term)</b>	Months 4 - 6	<b>Halal &amp; Marketplace Acceleration</b>	<ol style="list-style-type: none"> <li>1. Issuance of 30 Halal Certificates (<i>Self-Declare</i>).</li> <li>2. Active online stores in at least 2 <i>national marketplaces</i>.</li> <li>3. Increase in turnover of at least 10% from digital channels.</li> </ol>
<b>III (Long Term)</b>	Months 7 - 12	<b>Expansion &amp; Export</b>	<ol style="list-style-type: none"> <li>1. Official partnership with the University Business Incubator.</li> <li>2. Export market exploration (Southeast Asia).</li> <li>3. The Formation of the Songkok Center Digital Cooperative.</li> </ol>

Results of FGD and Service Team Planning, October 2025

Table 5 shows that the program's sustainability is not only a matter of discourse but also has clear performance indicators (KPIs) for each phase. The focus on Phase I is to ensure the foundation of legal compliance (NIB) and digital activity, which is an absolute requirement for Phase II (Halal Certification). Synergy with business incubators in Phase III is the key so that Songkok Bungah MSMEs not only survive but also grow ("scale-up") towards the global market.

## DISCUSSION

The service results showed a significant increase in partners' understanding of AI-based digital marketing and halal certification procedures, with an average post-test score increase of 72.5%. This surge in numbers not only reflects the addition of cognitive knowledge but also indicates the success of the Participatory Learning and Action (PLA) method in overcoming the technical barriers artisans have faced. The high scores in halal catalog design and data input skills (above 80%) indicate that the digital divide among rural communities is not due to an inability to adapt, but instead to a lack of access to practical, appropriate technology training. With intensive mentoring, partners who previously felt unfamiliar with technology now have the confidence (self-efficacy) to manage the digital aspects and legality of their business independently.

The findings of this service have strong theoretical and practical relevance when juxtaposed with various previous research on the digital transformation of MSMEs and the sharia economy. First, the success of increasing the adoption of marketing technology among Bungah Songkok artisans confirms a study by Bruce et al. (2023), which found that the adoption of digital marketing has a direct, positive correlation with the sustainable growth of MSMEs in developing countries. Specific to the use of artificial intelligence, the results of this activity reinforce the findings of Nurhaida et al. (2023) and Novantara et al. (2024), which conclude that the use of AI tools (such as ad and content generators) is significantly able to overcome creativity and time efficiency barriers that have been the main obstacles for micro business actors. Further, Bonar (2025), in its latest research, emphasizes that AI-based marketing strategies provide a competitive advantage through market personalization, which, in the context of this devotion, is evident in partners' ability to produce more varied and targeted product narratives.

On the other hand, the success of accelerating halal certification through the self-declare mechanism in this program aligns with Ilham's (2022) research, which highlights that intensive assistance is key to the success of the self-declare scheme for micro business actors with limited administrative literacy. This also supports Warty and Samsuri's (2020) argument regarding the implications of halal certification, which is not only a fulfillment of sharia but also a branding instrument that increases global consumer trust. In line with that, Khairawati et al. (2024) emphasizing that the digitization of halal services (such as the SiHalal application) requires an active role of halal product process (PPH) companions to bridge the technology gap, as also confirmed by Hanifah and Aminah & Mahmudah (2024)

who found that the presence of PPH companions significantly increased the success rate of halal certificate issuance compared to independent submission without guidance.

From a behavioral perspective, the drastic increase in partners' post-test scores can be explained through the Theory of Planned Behavior (TPB). These findings validate the Gondo study (2024), which states that Perceived Behavioral Control, facilitated by hands-on training, is the strongest predictor of a person's intention to adopt new technology. Finally, the effectiveness of the participatory approach used reaffirms the conclusions of Darmawan et al. (2020) in the journal *Participatory Learning and Action*, that the PLA method can create a higher sense of ownership of the program in the local community than the one-way lecture method.

The practical implication of this activity is the opening of global market access for Songkok Bungah MSMEs, which have now met the legal (halal) and visual (digital catalog) standards. Economically, AI technology's efficiency can reduce marketing costs while boosting product competitiveness in the marketplace. To ensure the sustainability of this impact, a roadmap has been prepared that includes establishing the "Songkok Center Digital Cooperative" and integrating it with the university's business incubator. This sustainability strategy adopts a tiered mentoring model successfully applied to the development of pesantren business units, where clarity of the long-term vision is key to partners' economic independence. Thus, this program not only provides a momentary solution, but also lays the foundation for an inclusive and sustainable creative economy ecosystem in Bungah District

## **CONCLUSION**

.This community service program successfully achieved its primary objective of escalating the global competitiveness of Songkok MSMEs in Bungah District through digital transformation and business legality. The intervention's effectiveness is evidenced by a statistically significant increase in partners' competence ( $p=0.000$ ) with a strong effect size ( $d=2.84$ ), as well as the successful independent drafting of halal certification documents by 83% of the participants. The main contribution of this activity is the establishment of an empowerment integration model that combines the adoption of appropriate technology (AI) with regulatory compliance (Halal). This model has proven effective in enhancing partners' self-efficacy, enabling them to transition from a traditional market approach to a modern, competitive digital ecosystem. As a policy recommendation

for sustainability, local government attention is required to address the synchronization of population data (NIK/KTP), which was identified as a primary barrier to micro-business legality. Furthermore, strategic synergy with Islamic banking is recommended to facilitate the upgrading of partners' digital devices, supporting long-term business operations and export readiness.

## REFERENCES

- Aminah, S., & Mahmudah, S. (2024). Pendampingan Proses Produksi Halal Bagi Pelaku Usaha Melalui Jalur Self Declare Dengan Program Sertifikasi Halal Gratis (Sehati). *Community Development Journal*, 5(3), 5833–5838. <https://doi.org/https://doi.org/10.31004/cdj.v5i3.30663>
- Arofah, T., Wita Ramadhanti, Nur Aini, Dian Purnomo Jati, & Oman Rusmana. (2025). Enhancing MSME Performance Through Halal Literacy, AIS, and Digital Marketing. *Jurnal Reviu Akuntansi Dan Keuangan*, 15(4). <https://doi.org/10.22219/jrak.v15i4.40474>
- Bruce, E., Shurong, Z., Ying, D., Yaqi, M., Amoah, J., & Egala, S. B. (2023). The Effect of Digital Marketing Adoption on SMEs Sustainable Growth: Empirical Evidence from Ghana. *Sustainability*, 15(6), 4760. <https://doi.org/10.3390/su15064760>
- Darmawan, D., Alamsyah, T. P., & Rosmilawati, I. (2020). Participatory Learning and Action untuk Menumbuhkan Quality of Life pada Kelompok Keluarga Harapan di Kota Serang. *Journal of Nonformal Education and Community Empowerment*, 4(2), 160–169. <https://doi.org/10.15294/pls.v4i2.41400>
- Eka Lidia Riska, Mardi, & Dwi Kismayanti Respati. (2024). Pengaruh Literasi Keuangan dan Literasi Digital terhadap Kinerja UMKM Kuliner di Pasar Rebo Jakarta Timur. *Al-Kharaj: Jurnal Ekonomi, Keuangan & Bisnis Syariah*, 6(11). <https://doi.org/10.47467/alkharaj.v6i11.3534>
- Fetrianggi, R. (2025). Digital Transformation of MSME Product Photography in Bandung: Visual Strategies to Enhance Competitiveness in the Online Marketplace. *International Journal of Current Science Research and Review*, 08(06), 2995–3002. <https://doi.org/10.47191/ijcsrr/V8-i6-33>
- Gondo, I. (2024). Program Studi Akuntansi, Universitas Pignatelli Triputra. *Edunomika*, 08(02), 1–13. <https://doi.org/https://doi.org/10.29040/jie.v8i2.12881>
- Ilham, B. U. (2022). Pendampingan Sertifikasi Halal Self Declare pada Usaha Mikro dan Kecil Binaan Pusat Layanan Usaha Terpadu Sulawesi Selatan. *Jurnal Pemberdayaan*

- Masyarakat Universitas Al Azhar Indonesia, 5(1), 20.  
<https://doi.org/10.36722/jpm.v5i1.1753>
- Khairawati, S., Murtiyani, S., Wijiharta, W., Yusanto, I., & Murtadlo, M. B. (2024). Kendala Sertifikasi Halal Pada UMKM di Indoneisa. *Jurnal Akuntansi, Manajemen Dan Ilmu Ekonomi (Jasmien)*, 5(02), 242–256.  
<https://doi.org/10.54209/jasmien.v5i02.1018>
- Lase, B. P. W. (2025). Dampak Pemanfaatan Artificial Intelligence pada Strategi Pemasaran UMKM di Era Digital. *Indonesia Economic Jurnal*, 1(2), 635–664.  
<https://doi.org/https://doi.org/10.63822/r653qw51>
- Lester, J. N., Cho, Y., & Lochmiller, C. R. (2020). Learning to Do Qualitative Data Analysis: A Starting Point. *Human Resource Development Review*, 19(1), 94–106.  
<https://doi.org/10.1177/1534484320903890>
- Lubis, U. S., Wulandari, N., Wahyudi, I., Widiyanto, A., Wibowo, E. A., Hakim, L., Apriyansyah, B., Hardiati, N., Swastika, A. Y., & Meyzia, B. (2025). Digital marketing strategies in expanding the market for MSME creative products in Indonesia—state of art. *Frontiers in Communication*, 10.  
<https://doi.org/10.3389/fcomm.2025.1647391>
- Nurhaida, D., Amran, E., Nugraha, E. R., Osman, A. F. Bin, & Shafira, A. N. (2023). Utilizing Artificial Intelligence (AI) Technology to support MSMEs businesses: ChatGPT. *Dinamisia: Jurnal Pengabdian Kepada Masyarakat*, 7(4), 910–918.  
<https://doi.org/10.31849/dinamisia.v7i4.15005>
- octavina, larissa adella, & Rita, maria rio. (2021). Digitalisasi umkm, literasi keuangan, dan kinerja keuangan : Studi pada masa pandemi Covid-19. *Journal of Business and Banking*, 11(1), 73–92. <https://doi.org/10.14414/jbb.v11i1.2552>
- Oetzel, J. G., Wallerstein, N., Duran, B., Sanchez-Youngman, S., Nguyen, T., Woo, K., Wang, J., Schulz, A., Keawe‘aimoku Kaholokula, J., Israel, B., & Alegria, M. (2018). Impact of Participatory Health Research: A Test of the Community-Based Participatory Research Conceptual Model. *BioMed Research International*, 2018, 1–12. <https://doi.org/10.1155/2018/7281405>
- Panji Novantara, Tito Sugiharto, & Roni Nursyamsu. (2024). Pemanfaatan AI Ads untuk Digital Marketing Produk UMKM di Desa Cimaranten Kuningan. *Journal of Innovation and Sustainable Empowerment*, 3(1), 56–62.  
<https://doi.org/10.25134/jise.v3i1.96>

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Ridwan, M., & In'am, A. (2021). Social Capital Deviation in Capital Assistance System: Socio-Economic Studies of Coastal Communities. *Economies*, 9(4), 204. <https://doi.org/10.3390/economies9040204>

Sánchez, E., Calderón, R., & Herrera, F. (2025). Artificial Intelligence Adoption in SMEs: Survey Based on TOE–DOI Framework, Primary Methodology and Challenges. *Applied Sciences*, 15(12), 6465. <https://doi.org/10.3390/app15126465>

Syafiq, M., Sirojuzilam, Badaruddin, & Purwoko, A. (2022). The influences of accessibility, information technology and social capital on coastal development in Indonesia: The mediating role of port development. *Ocean & Coastal Management*, 223, 106156. <https://doi.org/10.1016/j.ocecoaman.2022.106156>

Warto, W., & Samsuri, S. (2020). Sertifikasi Halal dan Implikasinya Bagi Bisnis Produk Halal di Indonesia. *Al Maal: Journal of Islamic Economics and Banking*, 2(1), 98. <https://doi.org/10.31000/almaal.v2i1.2803>