

Community Based Transformation of Knitting MSMEs: Synergy between Academia and Entrepreneurs at Sentral Benang Rajut Yogyakarta

Abdul Aziz^{1,*}, Jaya Ramadaey Bangsa², Setya Indah Isnawati³, Tri Izzulfahmi⁴, Muhammad Hamid Fayyadh⁵

¹ Study Program of Digital Business, Faculty of Economics, Law and Humanities, Universitas Ngudi Waluyo, Semarang, Indonesia

² Study Program of Digital Business, Faculty of Economics, Law and Humanities, Universitas Ngudi Waluyo, Semarang, Indonesia

³ Study Program of Digital Business, Faculty of Economics, Law and Humanities, Universitas Ngudi Waluyo, Semarang, Indonesia

⁴ Study Program of Digital Business, Faculty of Economics, Law and Humanities, Universitas Ngudi Waluyo, Semarang, Indonesia

⁵ Study Program of Digital Business, Faculty of Economics, Law and Humanities, Universitas Ngudi Waluyo, Semarang, Indonesia

* Corresponding Author: abdulaziz@unw.ac.id

Abstract.

This community engagement project aimed to strengthen the capacity of local micro, small, and medium enterprises (MSMEs) in the creative industry, specifically within the Sentral Benang Rajut community in Yogyakarta. By adopting a quadruple helix collaboration model, involving academia, entrepreneurs, the local community, and government stakeholders, the program facilitated a participatory approach to address real-world challenges in production quality, marketing strategies, and digital literacy. Activities included hands-on workshops on visual merchandising, product evaluation, and basic digital marketing skills. Results indicated a significant improvement in the participants' understanding of product presentation, branding, and the use of online platforms to expand market reach. Furthermore, the collaborative process fostered a stronger sense of collective identity and community-based branding initiatives. The integration of academic knowledge with local wisdom and entrepreneurial experience proved to be a valuable model for sustainable economic empowerment. This initiative demonstrates the effectiveness of multi-stakeholder engagement in promoting inclusive innovation and supporting the development of culturally rooted creative MSMEs

Keywords: *Community Engagement, MSMEs, Quadruple Helix, Creative Economy, Digital Literacy, Local Branding, Metaheuristic*

I. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in Indonesia's economy, acting as a major driver of the real sector, absorbing the majority of the workforce, and supporting local economic growth (Tambunan, 2022). Recent data reveals that MSMEs contribute approximately 61% to Indonesia's Gross Domestic Product (GDP) and absorb more than 97% of the total national workforce (Indonesia, 2024). Despite their significant contributions, most MSMEs still face numerous structural challenges, including limited access to capital, low financial and digital literacy, and restricted market access (Bank, 2023).

In the Yogyakarta region, MSMEs are not only economic pillars but also serve as cultural and creative agents. One notable example is the community-based knitted craft industry developed at the “Sentral Benang Rajut,” or Yarn Knitting Center. This community emerged as a form of local entrepreneurial adaptation and innovation, especially in the aftermath of the COVID-19 pandemic, which greatly affected informal sectors and household economies (Bappenas, 2021). The knitting products produced by this community hold both economic and cultural values, representing the creativity, tradition, and resilience of local artisans, many of whom are women (Sekarsih & Hermawan, 2023).

Nonetheless, the development of knitting-based MSMEs faces multiple and interrelated challenges. Many business actors lack adequate training in product design, branding, and modern marketing strategies, particularly in the digital sphere (Purnamasari & Asharie, 2024; Wijoyo & Widiyanti, 2020). A significant portion still relies on traditional marketing, even though digital platforms provide a broader market reach and new growth opportunities (Tania & Muhibban, 2024). Additionally, management issues such as basic financial record-keeping, inventory control, and business planning remain problematic and hinder sustainable growth (Fauzi, 2020; Ruscitasari et al., 2022).

Community-based MSME transformation offers a strategic approach that emphasizes collective rather than individual advancement. This approach utilizes the strength of social capital built through solidarity, cooperation, and shared values within the group (Putnam, 2000; Supriatna, 2017). In communities such as Sentral Benang Rajut, social capital plays a critical role in fostering trust, collaboration, and the flow of information among members, all of which contribute to enhancing group competitiveness (Coleman, 1988; Fukuyama, 1995). These communities also serve as spaces for collective learning and sharing of best practices, which are vital for the innovation and adaptability of micro-businesses (Fukuyama, 1996).

Higher education institutions have a strategic role as agents of social change and development. Through their threefold mission education, research, and community service universities are well-positioned to support MSMEs (Permenristekdikti No. 44 of 2015). Academics can facilitate knowledge transfer through training in entrepreneurship, digital marketing, simple financial management, and the use of technology for business operations (Situmorang, 2021; Hadi & Fatimah, 2020). Moreover, their involvement can also help MSMEs build wider networks with local governments, financial institutions, and market stakeholders (Misnan & Barizki, 2021; Widyawana et al., 2025).

This initiative aligns with the broader global agenda of sustainable development, particularly the Sustainable Development Goals (SDGs), specifically Goal 8 on decent work and economic growth, and Goal 5 on gender equality (Gutiérrez-Ponce & Wibowo, 2023). In the context of knitting-based MSMEs, which are often led by women, capacity-building efforts directly contribute to women's economic empowerment and household welfare (Marwanti & Astuti, 2012; Purwantini et al., 2022).

In today's digital era, integrating technology into MSME development is a necessity. Digital literacy is now a prerequisite for business resilience and expansion, especially in leveraging social media, e-commerce, and financial apps (Erawan et al., 2023; Wibowo, 2021). MSMEs that successfully adopt digital platforms have a significantly higher chance of accessing global markets and scaling up their operations (Mckinsey et al., 2020; Tayibnapis et al., 2018). However, the digital

divide remains a major barrier for micro-enterprises, necessitating sustained intervention from academia and development practitioners through hands-on assistance (Riyanto et al., 2022).

Thus, a community service program that focuses on the transformation of knitting-based MSMEs through community empowerment and academic collaboration is not only timely but also essential. This initiative goes beyond increasing productivity and income—it fosters social change, strengthens business ecosystems, and supports inclusive, sustainable economic development. The synergy among communities, academics, and other stakeholders can build a more resilient, innovative, and competitive entrepreneurship landscape.

II. METHODS

2.1. Location, Time, and Subjects

This community engagement activity was conducted at the Crochet Yarn Center (Sentral Benang Rajut) located in Kasihan, Bantul, Special Region of Yogyakarta, Indonesia. The location was chosen due to its status as a regional hub for community-based MSMEs specializing in crochet handicrafts. This center demonstrates a strong foundation of social capital and cooperative engagement among local women entrepreneurs, making it an ideal site for empowerment and academic intervention (Bowling, 2001).

The program took place over a period of three months, from July to September 2025, and included three main phases: initial field observation, capacity-building workshops and mentoring, and final program evaluation. The primary subjects of this engagement included approximately 20 active MSME entrepreneurs, the majority of whom are women operating home-based businesses. Additionally, the program involved academic staff and students from a local university who served as facilitators, mentors, and observers.

2.2. Data Collection Method

A mixed-methods approach was applied to obtain comprehensive insights into the participants' context, needs, and program impact. The data collection techniques included both qualitative and quantitative methods (Creswell & Creswell, 2017), as outlined below:

- **Participatory Observation:** The academic team directly engaged in community activities to observe production processes, community interactions, and the overall environment. This method is commonly used in community-based research to understand local dynamics through immersion (Spradley, 2016).
- **In-depth Interviews:** Semi-structured interviews were conducted with MSME actors, community leaders, and stakeholders to explore business experiences, challenges faced, and training needs. This qualitative method is effective for capturing rich narratives and lived experiences (Patton, 2014).
- **Pre- and Post-Activity Questionnaires:** Structured questionnaires were administered before and after the training sessions to assess changes in participants' knowledge, skills, and digital adoption. This approach allows researchers to measure program outcomes quantitatively (Dillman et al., 2014).
- **Documentation:** Field activities were recorded through photographs, videos, and field notes. Documentation not only serves as evidence of the process but also facilitates reflection and program evaluation (Stringer & Aragón, 2020).

2.3. Data Analysis Method

The collected data were analyzed using both qualitative thematic analysis and simple descriptive statistics, which allow for a holistic understanding of the program outcomes (Miles et al., 2014):

- **Qualitative Analysis:** Observational and interview data were coded and categorized into thematic units using data reduction, display, and conclusion-drawing techniques. Thematic analysis helped identify patterns in community responses and participants' learning processes .
- **Descriptive Quantitative Analysis:** The pre- and post-questionnaire data were analyzed using frequency distributions, percentages, and graphical representations to illustrate the shifts in participant competencies and behavior.
- **Triangulation:** To ensure the validity and reliability of findings, methodological triangulation (i.e., combining observation, interviews, and surveys) and source triangulation (multiple participants and stakeholder roles) were applied. This approach enhances the trustworthiness of the data and supports comprehensive conclusions.

III. RESULT AND DISCUSSION

3.1. Enhancing Visual Capacity and Product Display Management

The community engagement program conducted at the Benang Rajut UMKM Center in Yogyakarta highlighted a significant transformation in the participants' understanding and implementation of visual presentation and product management strategies. Prior to the intervention, most of the displayed knitted products were arranged without consideration of aesthetic coherence, thematic categorization, or buyer experience. Through intensive mentoring sessions and collaborative design discussions, the participants were guided to improve their product layout using basic principles of visual merchandising. These included organizing items by type, color harmony, height variation, and thematic grouping, making the displays more appealing to prospective customers. The visual transformation is evident in Figure 1, where the team facilitated the rearrangement of crochet keychains and decorative products, demonstrating how a strategic setup can increase both visibility and perceived product value.



Figure 1. Product Display Management

Visual merchandising is widely acknowledged as a critical component in influencing consumer behavior, particularly in micro and small business contexts where physical product interaction plays a key role. According to Kotler and Keller (2016), the way products are presented directly impacts the customer's emotional response and purchase decision, making it an essential aspect of retail success. The academic team also introduced the participants to low-cost display tools and space utilization techniques, which are feasible for microenterprises operating with limited resources. This intervention supports prior research indicating that product presentation quality can serve as a competitive advantage, especially for craft-based MSMEs seeking differentiation in saturated markets. Furthermore, the collaborative nature of the activity combining hands-on demonstrations with reflective group discussion encouraged peer learning and strengthened the sense of professionalism among the artisans.

The enhanced display skills not only improved the physical attractiveness of the exhibition space but also contributed to stronger customer engagement and increased sales potential. In many cases, customers are more likely to perceive well-displayed products as higher quality, thus willing to pay premium prices. This capacity-building process illustrates that even simple adjustments in visual strategy can yield meaningful economic benefits for small-scale producers. By fostering awareness of design aesthetics and customer-centered presentation, the program laid an important foundation for more sustainable business practices among the Benang Rajut entrepreneurs.

3.2. Evaluation and Product Innovation Based on Local Wisdom

The in-depth discussion between the academic team and MSME practitioners, as illustrated in Figure 2, emphasized the importance of continuous innovation in knitted products. This session

resulted in several new design recommendations, along with suggestions for utilizing more durable and ergonomically appropriate materials. The evaluation further reinforced the concept that products rooted in local culture can remain relevant in the global market, provided they are able to adapt to the evolving needs of modern consumers.



Figure 2. Evaluation and Product Innovation Based on Local Wisdom

The community engagement activities at Sentral Benang Rajut in Yogyakarta highlighted the importance of continuous evaluation and innovation in preserving and enhancing the value of traditional handicrafts. Through intensive dialogue sessions and hands-on workshops, it became evident that many of the current products, while rich in cultural symbolism and manual craftsmanship, required a recontextualization to align with modern consumer preferences. This process of reimagining product designs was not aimed at abandoning tradition, but rather at reinforcing it through contemporary functionality and aesthetic appeal (Anshori et al., 2022).

During the evaluation phase, the academic team and business practitioners collaboratively assessed the quality, durability, and marketability of the knitted products. Various aspects were considered, including color combination, material choice, ergonomics, and adaptability to different market segments. These discussions were informed by user feedback as well as design thinking principles, which emphasize empathy, ideation, and prototyping as critical components of innovation. The goal was to bridge the gap between traditional craftsmanship and modern market expectations without compromising the authenticity of local heritage.

Participants were encouraged to experiment with new forms and functions, such as transforming traditional keychains into multifunctional accessories, or adapting footwear designs for urban daily use while preserving their artisanal uniqueness. This adaptive strategy aligns with previous studies emphasizing the need for micro-entrepreneurs to innovate by blending cultural

identity with contemporary trends. The use of vibrant colors, thematic storytelling through product lines, and sustainable materials such as natural fibers further strengthened the cultural narrative embedded in each product.

Moreover, local wisdom was not merely viewed as a static cultural asset but as a dynamic source of innovation. The stories behind each motif, the historical function of certain product forms, and the social values embedded in community production processes were all leveraged as branding tools. This aligns with the notion that cultural capital can be strategically mobilized to create unique selling propositions in competitive creative industries. Through guided reflection and co-creation with the academic team, the artisans gained deeper awareness of how their cultural expressions could be transformed into economic value without losing their identity.

The evaluation and innovation process demonstrated the crucial role of participatory and reflective design in empowering traditional craftspeople. The collaborative environment fostered not only product improvement but also a stronger sense of cultural pride and ownership among the artisans. This process reinforces the idea that product innovation, when rooted in local wisdom and supported by academic facilitation, can significantly enhance the sustainability and competitiveness of community based microenterprises.

3.3. Strengthening Community Identity and Collective Branding

One of the most significant outcomes of this community engagement initiative was the recognition and reinforcement of the unique identity embedded within the knitting community at Sentral Benang Rajut, Yogyakarta. As the discussions and activities unfolded, it became increasingly evident that the strength of the local MSMEs (Micro, Small, and Medium Enterprises) lay not only in the diversity and creativity of their handmade products but also in the social cohesion and mutual support among community members. This finding aligns with the concept of embeddedness in economic sociology, where economic behavior is deeply rooted in social relationships and shared cultural values (Granovetter, 1985).

The intervention facilitated a reflective process among the community members to rediscover their shared identity and capitalize on it through unified branding strategies. Branding, in this context, was not merely interpreted as a marketing tactic but as a form of cultural expression that preserves and promotes the locality's artisanal heritage. Discussions were held around creating a collective brand name, unified visual identity, and shared storytelling narratives that reflect the history, values, and aspirations of the group. These branding components are crucial for fostering emotional attachment with consumers and differentiating the products in a highly competitive marketplace. Visual merchandising strategies were introduced as part of the branding process, emphasizing the importance of aesthetic coherence across product presentations, packaging, and promotional materials. The participants were guided to experiment with consistent color palettes, logo placements, and eco-friendly packaging solutions that align with their handmade ethos. This approach aligns with the theory that visual consistency reinforces brand recognition and consumer trust (Kotler & Lane Keller, 2016).

The collaborative branding strategy also aimed to strengthen the position of Sentral Benang Rajut as a regional creative hub for handcrafted knitwear, thereby increasing its visibility to wider markets, including tourists and digital consumers. By integrating local wisdom with contemporary branding practices, the initiative demonstrated how grassroots innovation can be scaled up without

compromising authenticity. Furthermore, it responds to recent studies that emphasize the need for inclusive branding models that allow marginalized producers to gain access to value-added markets.

3.4 Quadruple Helix Collaboration: Academia, Entrepreneurs, Community, and Government

As reflected in the documentation shown in Figure 3, the synergy among the university, MSME actors, community representatives, and local stakeholders illustrates a tangible practice of the quadruple helix collaboration. This collaboration has proven effective in addressing real-world challenges faced by MSMEs, particularly in the areas of production, distribution, and marketing. This approach aligns with the ideas of Carayannis and Campbell (2009), who emphasize the importance of multi-sector actor synergy in fostering social and economic innovation.



Figure 3. Collaboration among Academia, Entrepreneurs, Community, and Government

The implementation of this community service program successfully exemplified a practical application of the quadruple helix model, which integrates four key stakeholders academia, industry (entrepreneurs), community, and government in the process of co-creation and knowledge transfer. This collaborative approach was evident throughout the activities conducted at the Sentral Benang Rajut Yogyakarta, where mutual engagement among the actors resulted in a shared commitment to strengthening the capabilities of local micro, small, and medium enterprises (MSMEs).

Academia played a pivotal role in designing a structured intervention based on needs assessment, evidence-based solutions, and pedagogical strategies tailored to the context of creative economy enterprises. The involvement of lecturers and university students ensured that the process was not only educational but also transformative, creating an environment where knowledge and innovation could be practically applied and measured. Meanwhile, the entrepreneurs contributed their experience, market insights, and cultural capital, serving as both knowledge recipients and co-creators in the development of business and branding strategies. Their active participation during product evaluation sessions and marketing discussions underscored the relevance of grounded, real-world perspectives in academic-community engagements.

The community, especially the members of the Sentral Benang Rajut, functioned as a living ecosystem that maintained the values of togetherness, shared identity, and creative tradition. They provided not only space and resources for the activities but also critical feedback and reflections during collaborative discussions. Their involvement added authenticity and relevance to the proposed innovations and validated the importance of community ownership in sustaining change. The presence and endorsement of local government officials further reinforced the legitimacy and scalability of the program. Government actors provided both institutional support and regulatory perspective, opening the possibility for future integration into formal development programs. Their involvement also ensured that the intervention was aligned with regional priorities and inclusive economic strategies, as emphasized by the Ministry of Cooperatives and SMEs in Indonesia.

The synergy between these four actors was not merely symbolic but materialized through shared decision-making, co-learning, and mutual reinforcement. The quadruple helix collaboration allowed for a more holistic, adaptive, and sustainable intervention model that is capable of addressing the multifaceted challenges faced by MSMEs in the creative industry sector. The success of this model in the Yogyakarta context highlights its potential replicability in other community-based economic ecosystems, especially those centered on local heritage and artisan-based industries.

IV. CONCLUSION

The implementation of the community engagement program at the Sentral Benang Rajut Yogyakarta has demonstrated the effectiveness of a Quadruple Helix collaboration involving academia, MSME actors, community members, and local government stakeholders. This inclusive and participatory model fostered not only knowledge transfer but also co-creation of solutions tailored to the specific needs of local entrepreneurs in the creative economy sector. Through structured mentoring, product innovation workshops, and branding strategy discussions, the intervention succeeded in strengthening the entrepreneurial capacity of MSMEs, particularly in areas such as product diversification, market orientation, and value communication.

The involvement of university lecturers and students provided a foundation for reflective learning and contextualized innovation, while MSME actors contributed valuable practical insights and local wisdom. Community participation ensured that the transformation process remained inclusive and rooted in shared cultural identity, and government support helped institutionalize the initiative within broader regional development agendas. This multidimensional synergy exemplifies the potential of the quadruple helix framework as an effective mechanism for driving sustainable and community-centered economic transformation.

Ultimately, this program reaffirms that collaborative, cross-sectoral approaches are essential in addressing the complex challenges faced by MSMEs. It also highlights the importance of continuous engagement, mutual learning, and shared responsibility among all stakeholders in order to create long-term impact. The success of this initiative at the Sentral Benang Rajut provides a replicable model for other regions aiming to integrate academic knowledge with grassroots innovation and policy support.

V. ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to all parties who contributed to the success of this community engagement program. Special appreciation is extended to the members of Sentral Benang Rajut Yogyakarta, whose enthusiasm, collaboration, and openness became the foundation of this meaningful partnership. We are also thankful to the local government representatives and community stakeholders who provided institutional support and strategic insights throughout the implementation process. Our deepest thanks go to the academic team and students involved in the fieldwork for their dedication in designing and delivering impactful knowledge-sharing sessions. Their contribution played a vital role in realizing the principles of the quadruple helix model through inclusive, participatory, and sustainable engagement. Finally, we acknowledge the support of our affiliated university for providing resources and a platform to bridge academia with community empowerment efforts. This collaborative work would not have been possible without the shared commitment to strengthening local creative economies and promoting innovation-driven development at the grassroots level.

REFERENCES

- Anshori, A., Cheung, A., Kwartanada, D., Sutrisno, E. L., Hasan, J., Andrew, M., Aji, R. N. B., Rahayu, S. D. I. S., Giamsjah, S. S., & Murtiyoso, S. (2022). *Tionghoa merajut keindonesiaan persembahan 80 tahun Leo Suryadinata*. Penerbit Universitas Ciputra.
- Bank, W. (2023). *MSME finance gap : assessment of the shortfalls and opportunities in financing micro, small, and medium enterprises in emerging markets*
- Bappenas. (2021). *Kajian Dampak COVID-19 terhadap UMKM*.
- Bowling, C. (2001). *Bowling alone: The collapse and revival of American community*. In: TAYLOR & FRANCIS INC 325 CHESTNUT ST, SUITE 800, PHILADELPHIA, PA 19106 USA.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American journal of sociology*, 94, S95-S120.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method*. Indianapolis, Indiana.
- Erawan, A. P. D., Aditya, I. G. W., Juniarta, I. W., Permana, I. M. A. S., & Baskara, I. M. W. (2023). *Pelatihan Digital Marketing Dalam Upaya Meningkatkan Literasi Digital Umkm Desa Keramas*. *BERNAS: Jurnal Pengabdian Kepada Masyarakat*, 4(1), 200-205.
- Fauzi, H. (2020). *Pelatihan manajemen keuangan bagi pelaku UMKM sebagai upaya penguatan UMKM Jabar Juara naik kelas*. *BERNAS: Jurnal Pengabdian Kepada Masyarakat*, 1(3), 247-255.
- Fukuyama, F. (1995). Social capital and the global economy. *Foreign Aff.*, 74, 89.
- Fukuyama, F. (1996). *Trust: The social virtues and the creation of prosperity*. Simon and Schuster.
- Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American journal of sociology*, 91(3), 481-510.
- Gutiérrez-Ponce, H., & Wibowo, S. A. (2023). Sustainability reports and disclosure of the sustainable development goals (SDGs): evidence from Indonesian listed companies. *Sustainability*, 15(24), 16919.

- Indonesia, K. (2024). UMKM Indonesia. <https://kadin.id/data-dan-statistik/umkm-indonesia/> Kotler, P., & Lane Keller, K. (2016). A framework for marketing management. In: Pearson.
- Marwanti, S., & Astuti, I. D. (2012). Model pemberdayaan perempuan miskin melalui pengembangan kewirausahaan keluarga menuju ekonomi kreatif di Kabupaten Karanganyar. *SEPA: Jurnal Sosial Ekonomi Pertanian dan Agribisnis*, 9(1).
- Mckinsey, Company, Madgavkar, A., White, O., Krishnan, M., Azcue, X., & Mahajan, D. (2020). COVID-19 and gender equality: Countering the regressive effects.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). Qualitative data analysis: A methods sourcebook. 3rd. In: Thousand Oaks, CA: Sage.
- Misnan, M., & Barizki, R. N. N. (2021). Strategi komunikasi bisnis hipmikindo dalam mensinergikan sumberdaya akademisi dan pelaku UMKM. *WACANA: Jurnal Ilmiah Ilmu Komunikasi*, 20(2), 226-241.
- Patton, M. Q. (2014). Qualitative research & evaluation methods: Integrating theory and practice. Sage publications.
- Purnamasari, E. D., & Asharie, A. (2024). Digitalisasi UMKM, Literasi Keuangan terhadap Kinerja Keuangan UMKM di Era New Normal Pandemi Covid 19. *Jesya (Jurnal Ekonomi dan Ekonomi Syariah)*, 7(1), 348-361.
- Purwantini, S., Rusdianti, E., & Wardoyo, P. (2022). Kreativitas Kewirausahaan. *TEMATIK*, 2(1).
- Putnam, R. D. (2000). Bowling alone: The collapse and revival of American community. Simon Schuster.
- Riyanto, S., Azis, M. N. L., & Putera, A. R. (2022). Pendampingan UMKM dalam penggunaan digital marketing pada komunitas UMKM di Kabupaten Madiun. *Jurnal Abdimas BSI: Jurnal Pengabdian Kepada Masyarakat*, 5(1), 137-142.
- Ruscitasari, Z., Nurcahyanti, F. W., & Nasrulloh, R. S. (2022). Analisis praktik manajemen keuangan umkm di kabupaten bantul. *Nusantara: Jurnal Ilmu Pengetahuan Sosial*, 4(9), 1375-1382.
- Sekarsih, F. N., & Hermawan, Y. (2023). Kolaborasi Multi-Sektoral Pada Pelatihan Pembuatan Tas Rajut Di Kabupaten Gunungkidul. *Jurnal Pengabdian kepada Masyarakat Nusantara*, 4(2), 1000-1008.
- Spradley, J. P. (2016). Participant observation. Waveland Press.
- Stringer, E. T., & Aragón, A. O. (2020). Action research. Sage publications.
- Supriatna, N. (2017). Pemberdayaan Teknologi Informasi untuk Keunggulan Bisnis. *Jurnal Ilmiah ADBIS (Administrasi Bisnis)*, 1(2), 183-196.
- Tambunan, T. T. (2022). Recent development of micro, small and medium enterprises in Indonesia. *International Journal of Social Sciences and Management Review*, 6(01), 193-214.
- Tania, L., & Muhibban, T. (2024). Comparative Analysis of Marketing Effectiveness of Islamic Bank Products through Social Media and Conventional Media. *International Journal Humanities Perspective*, 1(1), 32-37.
- Tayibnapis, A. Z., Wuryaningsih, L. E., & Gora, R. (2018). The development of digital economy in Indonesia. *IJMBS International Journal of Management and Business Studies*, 8(3), 14-18.
- Wibowo, Y. G. (2021). Analisa Literasi Digital Usaha Mikro, Kecil, Menengah (UMKM) Makanan Islami Dalam Kemasan (Studi Deskriptif tentang Tingkat Kompetensi Literasi Digital pada

UMKM di Kota Jember). *JURNAL MANAJEMEN DAN BISNIS INDONESIA*, 7(1), 127-134.

Widyawana, B., Barlianb, A., & Haryantoc, J. (2025). Model Kolaborasi Enabler untuk Meningkatkan Daya Saing UMKM melalui Digitalisasi. *WELFARE Jurnal Ilmu Ekonomi*, 6(1), 52-63.

Wijoyo, H., & Widiyanti, W. (2020). Digitalisasi umkm pasca pandemi covid-19 di riau. *Prosiding Konferensi Nasional Administrasi Negara Sinagara*, 12.