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Strengthening the Creative Economy through Rambutan Kombucha Training in Kalongan Village

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ABSTRACT

The problem addressed in this community service activity was the limited utilization of rambutan commodities in Kalongan Village, which were generally consumed directly or sold in fresh form without further processing, resulting in low economic value. Therefore, this program aimed to strengthen the local creative economy through training on rambutan kombucha production as an innovative fermented beverage product. The activity was conducted in Kalongan Village, East Ungaran District, Semarang Regency, involving 40 members of the Family Welfare Empowerment (PKK) group and local residents. The program applied the Participatory Action Research (PAR) approach through stages of socialization, practical training, mentoring, and evaluation. Evaluation instruments included pre-test and post-test assessments, observation sheets, and participant response questionnaires analyzed descriptively using percentage analysis. The results showed that the average participant score increased from 56.8 to 84.5, indicating a 48.77% improvement in knowledge and understanding of fermentation techniques, sanitation procedures, and creative economy concepts. In addition, 87.5% of participants were able to independently practice the fermentation process, while 82.5% positively accepted the product based on sensory evaluation. The kombucha product achieved an average pH value of 3.2 after 8 days of fermentation, indicating acceptable fermentation quality and safety standards. Furthermore, 77.5% of participants expressed interest in developing rambutan kombucha as a small-scale household business. The program produced several outputs, including a rambutan kombucha prototype, an educational e-module, and a scientific publication draft. Overall, the RAMBUSA program contributed to improving community skills, optimizing local commodity utilization, and supporting sustainable village-based creative economy development.

Keywords: community empowerment, creative economy, kombucha, rambutan, training

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INTRODUCTION

The creative economy is seen as one of the strategic approaches in promoting economic growth based on creativity, innovation, and the utilization of local resources (Khassenova et al., 2025). In rural areas, the development of the creative economy is closely related to the community's ability to transform local commodities into products with higher economic value (Rodrigues-Ferreira et al., 2023). Optimizing local potential through innovative processing not only creates new business opportunities but also strengthens village economic independence and community welfare (Harinurdin et al., 2025).

Kalongan village possesses considerable natural resource potential, particularly the abudance of rambutan fruit during harvest seasons (Bhattacharjee et al., 2022). However, the utilization of rambutan remains limited to direct consumption and fresh-market sales without further processing (Mesbah Uddin et al., 2024). The economic potential of rambutan has not been fully optimized. This condition indicates the need for innovative approaches that can transform rambutan into value-added products capable of supporting local economic development.

Despite the availability of agricultural resources, rural communities often face challenges in developing innovative products from local commodities. Limited training, lack of technical knowledge, and insufficient assistance in product development hinder communities from maximizing the economic value of agricultural products (Gizaw & Sota, 2023). Most products are still marketed in raw form at relatively low prices, while knowledge regarding food innovation and processing techniques remains limited (Salazar et al., 2025).

Research Miano et al., (2025) related to the economic empowerment of rural communities generally still focuses on the development of processed food products or general entrepreneurship. This indicates that the potential of local commodities has not been fully optimized through innovative empowerment approaches (Dushkova & Ivlieva, 2024). However, studies that specifically examine the utilization of rambutan fruit as a fermented product such as kombucha in strengthening the rural creative economy remain limited. In addition, village-level training programs that integrate food processing skills, product innovation, and market opportunities for fermented beverages are still rarely implemented (Praveen & Brogi, 2025).

One form of innovation that can be developed is the production of kombucha using rambutan fruit as the base ingredient. Kombucha is a fermented drink that is currently growing in popularity due to its known health benefits and considerable market potential (Prajapati et al., 2024). The use of rambutan as a raw material for kombucha can be an alternative processing method that produces a new product with economic value while reflecting the unique local potential of the village.

Training programs are considered an effective form of community empowerment in improving knowledge and practical skills related to local resource utilization (Suryono et al., 2023). Through training in making rambutan-based kombucha, community members can learn fermentation techniques, product processing, and opportunities for developing local businesses with economic value (Behera et al., 2022).

From a theoretical perspective, the development of a creative economy in rural areas is closely associated with the strengthening of community-based innovation ecosystems. The creative economy emphasizes the transformation of local resources into value-added products through innovation and community participation (Lee, 2023). In addition, while community empowerment highlights the importance of participatory learning in strengthening local capacities and economic independence (Papotto & Loots, 2026). Local resource-based innovation supports the transformation of underutilized commodities into

competitive products that can support sustainable rural entrepreneurship (Hasdiani et al., 2024).

This study aims to analyze the implementation of rambutan-based kombucha production training in Kalongan Village as an effort to optimize local resources and strengthen the village creative economy. The novelty of this study lies in the integration of rambutan commodity utilization with fermented beverage innovation through a community empowerment approach. Unlike previous studies that mainly focused on general food processing or entrepreneurship, this research specifically examines rambutan-based kombucha training as an innovative strategy for increasing the added value of local commodities and supporting sustainable rural economic development.

METHODS

The Community Service Program (KKN) team from GIAT 15 Kalongan Village, Semarang State University, organized a training and empowerment activity themed "RAMBUSA: Innovation in Local Rambutan Fermentation through Kombucha Training as a Strategy to Strengthen the Creative Economy" in Kalongan Village, East Ungaran Subdistrict, Semarang Regency, Central Java. This KKN program lasted for 1 month and 8 days, running from January 12, 2026, to February 20, 2026.

The program involved 40 PKK members selected purposively based on their active participation in household economic activities. However, the training on Rambutan Kombucha products was conducted over a one-week period. The objective of this KKN program is to implement the Merdeka Belajar Kampus Merdeka (MBKM) policy, where students directly engage in empowering the village community, optimizing local potential, and improving the quality of education (Adhi et al., 2025).

The KKN GIAT 15 Team of Kalongan Village from the Student Association of the Nonformal Education Study Program at Semarang State University worked together with the village government, hamlet leaders, members of the Family Welfare Empowerment (PKK), and local residents to carry out a series of well-organized activities. This program aimed to empower women, especially mothers in Kalongan Village, by helping them develop their skills and potential in a positive, confident, and purposeful way. The method used in this community empowerment activity was the Participatory Action Research (PAR) approach (Leonard et al., 2025) where this program is implemented in several stages as follows:

The initial stage began with delivering information about the goals of women's empowerment based on local entrepreneurship, followed by an explanation of the reasons for choosing rambutans as the main focus of the empowerment project in Kalongan Village. This process was carried out to encourage active participation and strengthen communication among participants and the community in implementing the empowerment activities (Ridwansyah et al., 2021). Moreover, during the information-sharing process, the reasons for selecting rambutan as the primary commodity for empowerment activities in Kalongan Village were also presented. Rambutan was chosen due to its abundant availability in the local environment, its relatively simple processing methods, and its strong economic potential when transformed into higher-value products such as rambutan kombucha (Ramdhan & Kholid, 2019).

The second is training in making rambutan kombucha, where participants will be given training in processing rambutan kombucha, including:

1. Raw Material Selection Technique, which involves selecting fresh, ripe, and high-quality rambutan as the main ingredient. The fruit must be free from physical damage and microbial contamination to ensure optimal fermentation results and product safety.

2. Preparation and Sterilization Technique, which includes cleaning all equipment using hot water and ensuring hygienic conditions during the process. This step is crucial to prevent contamination from unwanted microorganisms that may disrupt the fermentation process.
3. Sweet Tea Preparation Technique, which involves boiling water (±100°C) and dissolving sugar (10-15% concentration), followed by the addition of tea leaves. The solution is then cooled to room temperature (±25-30°C) before fermentation begins to maintain microbial viability.
4. Rambutan Processing Technique, which includes peeling the rambutan, separating the flesh from the seed, and cutting it into smaller pieces. The processed fruit is then added into the sweet tea solution to enhance flavor and nutritional value.
5. Fermentation Technique, which involves adding SCOBY (Symbiotic Culture of Bacteria and Yeast) into the mixture and covering the container with a breathable cloth. The fermentation process is carried out for 7–10 days at room temperature to produce organic acids, probiotics, and characteristic kombucha flavor.
6. Monitoring and Evaluation Technique, which includes observing changes in aroma, taste, color, and pH during fermentation. This stage ensures that the fermentation process runs optimally and produces a safe and high-quality product.
7. Harvesting and Filtration Technique, which involves removing the SCOBY and filtering the liquid to obtain a clear kombucha product. The SCOBY can be reused for subsequent fermentation processes.
8. Packaging Technique, which includes bottling the kombucha into sterile glass or plastic containers. Proper packaging ensures product hygiene, extends shelf life, and increases marketability.
9. Product Branding and Marketing Technique, which introduces participants to basic concepts of labeling, packaging design, and simple marketing strategies to enhance the economic value of the product.

The third stage involves providing intensive mentoring to participants after they have completed the training sessions. During this phase, participants receive both direct and indirect guidance for six days. This mentoring is intended to ensure that they can effectively implement the knowledge and skills gained from the training in the production process. Furthermore, it aims to support participants in producing high-quality products that comply with the predetermined standards (Lynch & Corbett, 2023).

The final stage is the evaluation phase, conducted at the end of the program by assessing participants' achievement in developing rambutan kombucha production skills. This evaluation is carried out through a questionnaire designed to measure the extent to which participants perceive the benefits of the training and their ability to apply the acquired skills in their daily activities (Phina Karina & Amin Yusuf, 2025).

Evaluation indicators included fermentation understanding, product sanitation, packaging skills, and entrepreneurial interest. Data were analyzed descriptively using percentage analysis. The questionnaire includes indicators related to the impact of the empowerment program, particularly participants' capability to produce rambutan kombucha and market the finished products.

RESULT AND DISCUSSION

The implementation of the RAMBUSA program was conducted in Kalongan Village, Ungaran Timur District, Semarang Regency on 15 February 2026 involving 40 representatives of PKK members from several neighborhood units in the village. The activity targeted women actively engaged in household economic activities and community empowerment programs. The selection of PKK members as participants aligns with studies emphasizing that women's participation significantly contributes to strengthening community-based entrepreneurship and local economic resilience (Tabares et al., 2022). Rambutan was selected as the primary commodity because of its seasonal abundance in household yards and the limited innovation in processing the fruit into value-added products (Sawant et al., 2025).

Before presenting Figure 1, participant involvement during the training process demonstrated strong enthusiasm toward local food innovation activities. The majority of participants actively engaged in discussions, practical sessions, and product development simulations. This finding indicates that community-based training can stimulate participatory learning and strengthen entrepreneurial motivation among rural women (Liu et al., 2024).

Figure 1. Participation of PKK members in the RAMBUSA kombucha training program in Kalongan Village

The activity began with an educational session regarding the concept of the creative economy based on local potential. The session emphasized the transformation of locally available commodities into innovative products with economic value through community-based entrepreneurship approaches (Rodrigues-Ferreira et al., 2023). The educational material also introduced the concept of fermented functional beverages and the health benefits of kombucha products (Nyhan et al., 2022).

Before presenting Figure 2, participants received explanations regarding fermentation principles, sanitation procedures, food safety standards, and the economic opportunities of kombucha products in the creative food industry sector. The discussion process showed that most participants had never previously received fermentation-based food processing training.

Figure 2. Educational session on local potential-based creative economy during the RAMBUSA training

Following the educational session, participants were guided through direct demonstrations and hands-on practice in producing rambutan kombucha. The fermentation process included preparation of sweetened tea solution, addition of rambutan extract, inoculation using SCOBY (Symbiotic Culture of Bacteria and Yeast), and controlled fermentation for 7–10 days at room temperature (25–30°C) (Nyhan et al., 2022). Kombucha fermentation has been reported to produce bioactive compounds, including organic acids, antioxidants, vitamins, and phenolic compounds that contribute to functional beverage characteristics (Brod et al., 2022).

Before presenting Figure 3, participants were divided into small working groups to ensure experiential learning and improve technical skill acquisition during the fermentation process. The practical approach allowed participants to independently repeat each production stage under facilitator supervision.

Figure 3. Demonstration of rambutan kombucha fermentation process during the training session

Evaluation results showed measurable improvements in participants' knowledge and practical skills after the training implementation. Pre-test and post-test analysis indicated that the average participant knowledge score increased from 56.8 to 84.5, reflecting a 48.77% improvement in understanding fermentation concepts, sanitation procedures, and creative economy principles (Fotheringham & Munro, 2024). Observation results also showed that 87.5% of participants were able to independently perform the fermentation process according to the provided SOP guidelines.

Participant responses toward the RAMBUSA product prototype were also evaluated using a simple sensory acceptance questionnaire involving taste, aroma, color, and packaging aspects (Saltos Barre et al., 2025). The evaluation showed that 82.5% of participants categorized the kombucha taste as acceptable and refreshing, while 85% considered the product packaging attractive enough for small-scale marketing purposes. In addition, 77.5% of participants expressed interest in developing rambutan kombucha as a home-based business product.

Technical monitoring during the fermentation process demonstrated that the kombucha product achieved an average pH value of 3.2 after 8 days of fermentation, which falls within the safe acidity range for fermented beverages. Product sanitation was maintained through sterilization of containers using hot water before fermentation. The resulting kombucha exhibited a slightly acidic aroma, light brown coloration, and mild carbonation characteristics, indicating successful microbial fermentation activity (Abaci et al., 2022).

To clarify the measurable outcomes of the program, the evaluation results are presented in Table 1.

Table 1. Evaluation results of RAMBUSA training program

Evaluation Indicator	Result
Number of participants	40 PKK representatives
Average pre-test score	56.8
Average post-test score	84.5
Knowledge improvement	48.77%
Participants able to independently practice fermentation	87.5%
Positive sensory acceptance	82.5%
Interest in business development	77.5%
Average fermentation duration	8 days
Average product pH	3.2

Table 1 demonstrates that the training generated measurable impacts on participant knowledge, technical skills, and entrepreneurial interest. The increase in post-test scores indicates that participatory training methods effectively improved participant understanding regarding fermentation-based product innovation. Emphasizing that empowerment-based practical learning significantly enhances community capacity development (Abaci et al., 2022).

The RAMBUSA program also produced several tangible outputs consisting of a rambutan kombucha prototype product, an educational e-module, and a scientific publication draft documenting the empowerment process. The e-module contained systematic guidance regarding fermentation techniques, sanitation standards, and simple packaging strategies for household-scale businesses.

Table 2 Program outputs of RAMBUSA training

Output	Description
Product Prototype	Rambutan kombucha beverage produced during training
Educational Module	E-module containing fermentation procedures and sanitation guidelines
Scientific Publication	Community service article prepared for academic publication

Table 2 presents the outputs produced during the implementation of the RAMBUSA program. The RAMBUSA product prototype functions as a demonstration model that can be replicated by community members. The educational module provides systematic guidance on fermentation techniques, sanitation standards, and basic marketing strategies. Educational materials are considered essential in community empowerment programs because they enable knowledge transfer beyond the initial training session and support sustainable learning processes within local communities (Karssa et al., 2024).

Participant responses indicated strong interest in developing the kombucha product as a village-based beverage innovation. Several participants suggested integrating the product into local events and small-scale culinary businesses. Community-based entrepreneurship initiatives have been shown to enhance rural economic sustainability by encouraging the utilization of local resources and strengthening social collaboration among community members (Saputra, Pasekoenda, et al., 2026).

The integration of community service activities with academic publication represents an important dimension of university engagement with society (Safriyana et al., 2025). Documentation of community empowerment processes contributes to the development of applied knowledge while providing evidence-based insights for future community development programs. Similar studies emphasize that university-community collaboration can enhance innovation diffusion and strengthen local economic ecosystems (Rukin & Muflih, 2025).

The findings of this study are consistent with the theoretical perspectives of creative economy and community empowerment. The successful transformation of rambutan into kombucha products reflects the application of creative economy principles, where local resources are processed into innovative products with higher economic value. In addition, the active participation of PKK members during the training process demonstrates the effectiveness of empowerment-based approaches in enhancing community capacity and fostering economic independence, particularly among women (Safriyana et al., 2025). This indicates that training activities not only function as knowledge transfer mechanisms but also as catalysts for community-driven economic development.

From the perspective of village creative economy strengthening, the RAMBUSA program contributed to increasing community awareness regarding diversification of household-scale business opportunities based on local commodities. The participatory training approach also strengthened collaborative learning among PKK members and encouraged community involvement in local economic activities. Similar findings were reported by (Fitriana & Nursuksmaningtyas, 2023), emphasizing that community empowerment programs based on local potential can improve entrepreneurial motivation and support the sustainability of rural micro-enterprises. Therefore, the RAMBUSA program not only generated practical outputs in the form of fermented beverage products but also produced measurable impacts on community capacity building and local economic empowerment.

Before presenting Figure 4, participant engagement during discussions and practical activities reflected strong social collaboration among PKK members. Several participants proposed integrating the product into village culinary events and local UMKM exhibitions as part of creative economy development initiatives.

Figure 4. Documentation of participant engagement during the RAMBUSA community empowerment program

The implementation process revealed several supporting and inhibiting factors. Supporting factors included the availability of rambutan as a local commodity, active participation of PKK members, support from village authorities, and the simplicity of the fermentation process (Saputra, Fadhila Kayla Zefara, et al., 2026). Inhibiting factors included participants' limited prior experience in fermentation-based food processing and

concerns regarding product shelf life and market acceptance (Ammela Maulani & Fakhruddin Fakhruddin, 2025). However, practical demonstrations, direct mentoring, and group-based learning approaches were effective in overcoming these barriers and increasing participant confidence in product development activities.

The findings indicate that the success of the RAMBUSA program was influenced not only by the availability of local resources but also by the participatory empowerment approach applied during implementation. Community involvement throughout the training process strengthened knowledge transfer, collaborative learning, and entrepreneurial motivation among participants (Niyigaba et al., 2025). This result supports previous studies emphasizing that sustainable rural economic development depends on the integration of local resources, innovation capacity, and community participation (Skowron et al., 2022).

The program also demonstrated that local fermented beverage innovation can serve as a strategic approach for strengthening the village creative economy through diversification of community-based micro-enterprises (Susilowati et al., 2023). The integration of food innovation, entrepreneurship education, and participatory empowerment contributes to increasing the economic value of local commodities while reinforcing local identity and social resilience within rural communities (Hawaz et al., 2025).

CONCLUSION

The RAMBUSA program demonstrated that participatory training based on local resources can effectively improve community knowledge and practical skills in developing value-added products from rambutan commodities. The evaluation results showed that the average participant score increased from 56.8 in the pre-test to 84.5 in the post-test, indicating a 48.77% improvement in understanding fermentation techniques, sanitation procedures, and creative economy concepts. In addition, 87.5% of participants were able to independently practice the fermentation process based on the provided SOP guidelines. The training also produced measurable technical outcomes, including an average fermentation duration of 8 days and a product pH of 3.2, which falls within the safe range for fermented beverages. Furthermore, 82.5% of participants positively accepted the product, while 77.5% expressed interest in developing rambutan kombucha as a small-scale household business. These findings indicate that the program successfully strengthened community capacity and supported local creative economy development in Kalongan Village. The sustainability of the RAMBUSA program requires continuous follow-up activities to support product development and business implementation among participants. Further assistance should focus on improving product consistency, packaging quality, branding strategies, and digital marketing skills to enhance market competitiveness. In addition, future programs should include product safety monitoring, pH stability testing, and guidance for obtaining household food production permits (PIRT) and Business Identification Numbers (NIB) to support legal commercialization. Collaboration between universities, village authorities, and local community groups is also necessary to strengthen mentoring and ensure the continuity of empowerment activities. The integration of local commodity innovation with entrepreneurship-based training has the potential to become a sustainable model for rural economic empowerment. Therefore, similar empowerment programs can be replicated in other rural areas with different local commodities to encourage community-based creative economy development and strengthen village economic resilience.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

REFERENCES

Abaci, N., Sezer, F., Deniz, S., & Erdogan, I. (2022). Food Chemistry : X Kombucha – An ancient fermented beverage with desired bioactivities : A narrowed review. *Food Chemistry: X*, *14*(February), 100302. https://doi.org/10.1016/j.fochx.2022.100302

Adhi, M. A., Dwiyanto, K., Mulyasari, N. T., & Badawi, A. (2025). Sosialisasi Nilai-Nilai Pancasila Terhadap Anak-Anak Desa Panggang, Kecamatan Kemalang Untuk Menumbuhkan Sikap Persatuan Dan Kesatuan Kebhinekaan. *Jurnal Warta Desa (JWD)*, *7*(2), 52–58. https://doi.org/10.29303/jwd.v7i2.280

Ammela Maulani, & Fakhruddin Fakhruddin. (2025). Partisipasi Masyarakat pada Community Based Tourism di Desa Wisata Giyanti Kabupaten Wonosobo. *KREATIF: Jurnal Pengabdian Masyarakat Nusantara*, *5*(2), 521–541. https://doi.org/10.55606/kreatif.v5i2.7169

Baskoro, W., & Widiastuti, A. (2024). Pembinaan dan Pemberdayaan Pembatik Desa Girirejo Imogiri Bantul, Membangun Kembali Industri Batik Desa Girirejo Imogiri Bantul D.I. Yogyakarta. *IBSE Jurnal Pengabdian Masyarakatnya*, *2*(1), 35–45. https://doi.org/10.62708/ibsejpm.v2i1.38

Behera, B., Laavanya, D., & Balasubramanian, P. (2022). Techno-economic feasibility assessment of bacterial cellulose biofilm production during the Kombucha fermentation process. *Bioresource Technology*, *346*, 126659. https://doi.org/10.1016/j.biortech.2021.126659

Bhattacharjee, P., Das, S., Das, S. K., & Chander, S. (2022). Rambutan (Nephelium lappaceum L.): A potential fruit for industrial use, serving nutraceutical and livelihood interests and enhancing climate resilience. *South African Journal of Botany*, *150*, 26–33. https://doi.org/10.1016/j.sajb.2022.06.064

Brod, A., Milena, B., & Souza, C. (2022). *Bioactive compounds in kombucha : A review of substrate effect and fermentation conditions*. *385*(February). https://doi.org/10.1016/j.foodchem.2022.132719

Dushkova, D., & Ivlieva, O. (2024). Empowering Communities to Act for a Change: A Review of the Community Empowerment Programs towards Sustainability and Resilience. *Sustainability*, *16*(19), 8700. https://doi.org/10.3390/su16198700

Fitriana, I., & Nursuksmaningtyas, H. (2023). Kegiatan Sekolah Perempuan Az-Zahra Untuk Mendorong Kemandirian dan Inovasi di Era Digital. *Kontribusi: Jurnal Penelitian Dan Pengabdian Kepada Masyarakat*, *4*(1), 144–159. https://doi.org/10.53624/kontribusi.v4i1.307

Fotheringham, L., & Munro, K. (2024). Dealing With Discrimination, Harassment and Bullying in Mental Health Settings: A Qualitative Evaluation of Training. *BJPsych Open*, *10*(S1), S102–S103. https://doi.org/10.1192/bjo.2024.293

Gizaw, G., & Sota, S. S. (2023). Improving Science Process Skills of Students: A Review of Literature. *Science Education International*, *34*(3), 216–224. https://doi.org/10.33828/sei.v34.i3.5

Harinurdin, E., Laksmono, B. S., Kusumastuti, R., & Safitri, K. A. (2025). Community Empowerment Utilizing Open Innovation as a Sustainable Village-Owned Enterprise Strategy in Indonesia: A Systematic Literature Review. *Sustainability*, *17*(8), 3394. https://doi.org/10.3390/su17083394

Hasdiani, T., Mulyono, S. E., & Abimbowo, Y. O. (2024). Women's Participation in Cultural Tourism Based Community Empowerment. *JPPM (Jurnal Pendidikan Dan Pemberdayaan Masyarakat)*, *11*(1), 49–61. https://doi.org/10.21831/jppm.v11i1.72328

Hawaz, H., Bottari, B., Scazzina, F., & Carini, E. (2025). Eastern African traditional fermented foods and beverages: Advancements, challenges, and perspectives on food technology, nutrition, and safety. *Comprehensive Reviews in Food Science and Food*

Safety, *24*(2). https://doi.org/10.1111/1541-4337.70137
Hernita, H., Surya, B., Perwira, I., Abubakar, H., & Idris, M. (2021). Economic Business Sustainability and Strengthening Human Resource Capacity Based on Increasing the Productivity of Small and Medium Enterprises (SMEs) in Makassar City, Indonesia. *Sustainability*, *13*(6), 3177. https://doi.org/10.3390/su13063177
Karssa, T. H., Kussaga, J. B., Semedo-Lemsaddek, T., & Mugula, J. K. (2024). Insights on the microbiology of Ethiopian fermented milk products: A review. *Food Science & Nutrition*, *12*(10), 6990–7003. https://doi.org/10.1002/fsn3.4372
Khassenova, N., Mukina, G., Popp, L., Kaliyeva, S., Turginbayeva, A., & Kenzhin, Z. (2025). Impact of human resources in the creative sphere on economic development. *Problems and Perspectives in Management*, *23*(3), 13–25. https://doi.org/10.21511/ppm.23(3).2025.02
Lee, C.-C. (2023). Analyses of the operating performance of information service companies based on indicators of financial statements. *Asia Pacific Management Review*, *28*(4), 410–419. https://doi.org/10.1016/j.apmrv.2023.01.002
Leonard, R., Dini Utami, S., Khilyatul Aulia, P., Toto Wibowo, A., & Sriwijayasih, I. (2025). Limbah Cangkang Kerang Hijau Ekonomi Sirkular di Pesisir: Studi Kasus Pemanfaatan Cangkang Kerang Hijau untuk Pakan Udang di Gresik. *KOMUNITA: Jurnal Pengabdian Dan Pemberdayaan Masyarakat*, *4*(4), 792–798. https://doi.org/10.60004/komunita.v4i4.268
Liu, J., Qi, W., Yu, Y., Han, Y., & Zheng, D. (2024). Exploring the Influence of Village Social Capital and Rural Development on Farmers' Entrepreneurial Decision-Making: Unveiling the Path to Local Entrepreneurship. *Sage Open*, *14*(2). https://doi.org/10.1177/21582440241249118
Lynch, M. P., & Corbett, A. C. (2023). Entrepreneurial mindset shift and the role of cycles of learning. *Journal of Small Business Management*, *61*(1), 80–101. https://doi.org/10.1080/00472778.2021.1924381
Mesbah Uddin, A. S. M., Gomasta, J., Torikul Islam, M., Islam, M., Kayesh, E., & Karim, M. R. (2024). Gibberellic Acid Spray Modulates Fruiting, Yield, Quality, and Shelf Life of Rambutan (Nephelium lappaceum L.). *Journal of Horticultural Research*, *32*(1), 51–66. https://doi.org/10.2478/johr-2024-0004
Miano, L. C., Cabrera, G. A., Yaoc, C. A. M., Cayabat, C. V, & Laguador, A. A. (2025). Developing community-based enterprises from the selected agrarian reform communities in Quezon Province. *Asian Journal of Agriculture and Rural Development*, *15*(2), 112–120. https://doi.org/10.55493/5005.v15i2.5326
Mulyono, S. E., Putra Widhanarto, G., Sutarto, J., Malik, A., & Shofwan, I. (2023). Empowerment strategy for people with disabilities through nonformal batik education program. *Jurnal Cakrawala Pendidikan*, *42*(3), 683–694. https://doi.org/10.21831/cp.v42i3.59191
Niyigaba, T., Küçükgöz, K., Kołożyn-Krajewska, D., Królikowski, T., & Trząskowska, M. (2025). Advances in Fermentation Technology: A Focus on Health and Safety. *Applied Sciences*, *15*(6), 3001. https://doi.org/10.3390/app15063001
Nyhan, L. M., Lynch, K. M., Sahin, A. W., & Arendt, E. K. (2022). Advances in Kombucha Tea Fermentation: A Review. *Applied Microbiology*, *2*(1), 73–103. https://doi.org/10.3390/applmicrobiol2010005
Papotto, S., & Loots, E. (2026). Empowering women through culture, creativity, and entrepreneurship for the Sustainable Development Goals. In *Women's Entrepreneurship and the Sustainable Development Goals* (pp. 79–109). Elsevier. https://doi.org/10.1016/B978-0-443-28802-9.00012-9
Phina Karina, & Amin Yusuf. (2025). Peran Pendamping Program Keluarga Harapan

(PKH) dalam Mengatasi Kemiskinan Keluarga Penerima Manfaat (KPM) di Kecamatan Taman Kabupaten Pemalang. *KREATIF: Jurnal Pengabdian Masyarakat Nusantara*, *5*(1), 64–81. https://doi.org/10.55606/kreatif.v5i1.5729

Prajapati, K., Prajapati, J., Patel, D., Patel, R., Varshnei, A., Saraf, M., & Goswami, D. (2024). Multidisciplinary advances in kombucha fermentation, health efficacy, and market evolution. *Archives of Microbiology*, *206*(9), 366. https://doi.org/10.1007/s00203-024-04086-1

Praveen, M., & Brogi, S. (2025). Microbial Fermentation in Food and Beverage Industries: Innovations, Challenges, and Opportunities. *Foods*, *14*(1), 114. https://doi.org/10.3390/foods14010114

Ramdhan, T. W., & Kholid, M. (2019). Pengolahan Limbah Kulit Rambutan Menjadi Produk Minuman Dalam Meningkatkan Perekonomian Masyarakat Desa Rong Durin Kabupaten Bangkalan. *As-Sidanah : Jurnal Pengabdian Masyarakat*, *1*(1), 96–102. https://doi.org/10.35316/assidanah.v1i1.501

Ridwansyah, M., Edi, J. K., & Widiastuti, F. (2021). Pengolahan pisang aneka rasa dan digital marketing untuk meningkatkan perekonomian Desa Maro Sebo Kecamatan Jambi Luar Kota, Kabupaten Muaro Jambi. *E-Jurnal Ekonomi Sumberdaya Dan Lingkungan*, *10*(3), 151–158. https://doi.org/10.22437/jels.v10i3.16298

Rodrigues-Ferreira, A., Afonso, H., André Mello, J., & Amaral, R. (2023). Creative Economy And The Quintuple Helix Innovation Model: A Critical Factors Study In The Context Of Regional Development. *Creativity Studies*, *16*(1), 158–177. https://doi.org/10.3846/cs.2023.15709

Rukin, R., & Muflih, A. (2025). Pelatihan Sumber Daya Manusia Pada Komunitas Belajar Di SDN Model Kota Malang Dalam Meningkatkan Proses Pembelajaran. *Komunita: Jurnal Pengabdian Dan Pemberdayaan Masyarakat*, *4*(2), 135–148. https://doi.org/10.60004/komunita.v4i2.167

Safriyana, S., Sucipto, C., Kowanda, J. B., Ekanayake, K. E., & Nawawi, R. (2025). Women's Role In The Development Of Pajambon Village: Involvement, Contributions, And Challenges. *Jurnal Pemberdayaan Masyarakat Madani (JPMM)*, *9*(1), 50–70. https://doi.org/10.21009/JPMM.009.1.05

Salazar, C., Acuña-Duarte, A., & Gil, J. M. (2025). Price relationships between differentiated agricultural products. Do energy and climate shocks matter? *Agricultural and Food Economics*, *13*(1), 12. https://doi.org/10.1186/s40100-025-00355-9

Saltos Barre, I. V., García Mendoza, J. J., Muñoz Murillo, J. P., & Basurto Cedeño, L. I. (2025). Bebida de kombucha con sabor a guayaba (Psidium guajava): Compuestos antioxidantes, fisicoquímicos y aceptabilidad sensorial. *Manglar*, *22*(2), 157–164. https://doi.org/10.57188/manglar.2025.017

Saputra, S. F., Fadhila Kayla Zefara, Bagas Firzi Firmansyah, Diana Fitriyani, Ammela Maulani, Arneta Dyah Selina, Hanum Arumningtyas, & Yudi Siswanto. (2026). Sustainable Tourism Development: A Study of the Development of Pasar Sawahan Tourism in Kalongan Village. *Amalee: Indonesian Journal of Community Research and Engagement*, *7*(1 SE-Articles), 147–164. https://doi.org/10.37680/amalee.v7i1.9401

Saputra, S. F., Pasekoenda, S. M., Alficorista, N. B. E., & Shofwan, I. (2026). Implementation of the Dynamic Learning Model in Strengthening Children's Character Education. *Lembaran Ilmu Kependidikan*, *55*(1). https://doi.org/10.15294/lik.v55i1.37430

Sawant, S. S., Park, H.-Y., Sim, E.-Y., Kim, H.-S., & Choi, H.-S. (2025). Microbial Fermentation in Food: Impact on Functional Properties and Nutritional Enhancement—A Review of Recent Developments. *Fermentation*, *11*(1), 15. https://doi.org/10.3390/fermentation11010015

Skowron, K., Budzyńska, A., Grudlewska-Buda, K., Wiktorczyk-Kapischke, N., Andrzejewska, M., Wałecka-Zacharska, E., & Gospodarek-Komkowska, E. (2022). Two Faces of Fermented Foods—The Benefits and Threats of Its Consumption. *Frontiers in Microbiology*, *13*. https://doi.org/10.3389/fmicb.2022.845166

Suryono, J., Wijaya, M., Irianto, H., Harisudin, M., Tri Rahayu, N., Darsini, D., Astuti, P. I., & Sri Kusumawati, H. (2023). Model of Community Empowerment through Education Non-Formal Entrepreneurship to Improve Independence of Micro, Small and Medium Enterprises. *International Journal of Learning, Teaching and Educational Research*, *22*(3), 413–429. https://doi.org/10.26803/ijlter.22.3.25

Susilowati, R. Y. N., Syaipudin, U., Desriani, N., Asmaranti, Y., Kesumaningrum, N. D., & Tubarad, C. P. T. (2023). Pengembangan Potensi Ibu Rumah Tangga Berbasis Kewirausahaan Ecoprint dalam Upaya Peningkatan Ekonomi Keluarga. *Jurnal Pemberdayaan Ekonomi*, *2*(1), 9–19. https://doi.org/10.35912/jpe.v2i1.1441

Tabares, A., Londoño-Pineda, A., Cano, J. A., & Gómez-Montoya, R. (2022). Rural Entrepreneurship: An Analysis of Current and Emerging Issues from the Sustainable Livelihood Framework. *Economies*, *10*(6), 142. https://doi.org/10.3390/economies10060142

Utami, L. A., Lechner, A. M., Permanasari, E., Purwandaru, P., & Ardianto, D. T. (2022). Participatory Learning and Co-Design for Sustainable Rural Living, Supporting the Revival of Indigenous Values and Community Resiliency in Sabrang Village, Indonesia. *Land*, *11*(9), 1597. https://doi.org/10.3390/land11091597