

Enhancing MSME Competitiveness Through Production Optimization and Digital Marketing: A Case Study of Basreng Food Processing in Tangerang

Kabul Wahyu Utomo¹⁾, Zulkifli Sultan²⁾, Eka Pariyanti^{2,a)}, Dewi Ayu Kusumaningrum¹⁾

¹Master of Management, Graduate School, Universitas Terbuka, Indonesia

²Doctor of Management Science, Graduate School, Universitas Terbuka, Indonesia

^{a)}Corresponding author: eka.pariyanti@ecampus.ut.ac.id

ABSTRACT

Developing micro, small, and medium enterprises (MSMEs) based on local potential is essential to strengthen community economic resilience, particularly in the food sector. Yet many MSMEs struggle with low production efficiency, poor packaging, and weak digital marketing skills. This program addressed these issues by providing training and mentoring for a keripik basreng MSME in Tangerang City, covering production, packaging, and digital marketing. The intervention involved needs assessment, hands-on practice, and continuous monitoring. Results showed a 20% increase in production efficiency, processing time reduced from 4 to 3 hours, and more consistent hygienic standards. Innovative packaging and digital marketing boosted online sales by 35% and expanded distribution to five new stores. The program also created a marketing position, raised wages by 15%, and strengthened managerial capacity. Overall, the program demonstrated that participatory training and mentoring can overcome digital literacy barriers while building a sustainable and competitive MSME development model.

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INTRODUCTION

The development of micro, small, and medium enterprises (MSMEs) based on local potential is one of the main strategies for strengthening community economic resilience, particularly in the food sector (Tirtayasa, Januri, Khair, & Kartaatmaja, 2021). One type of MSME that is currently in high demand is the production of traditional snacks processed and packaged in a modern and innovative way, such as fish meatball-based chips (basreng). In addition to providing added value, small-scale enterprises also have the potential to strengthen the local creative industry while creating new employment opportunities at the community level (DiBella et al., 2023).

The partner MSME in this community service program is a basreng chips producer located at Jalan Merican Perumnas 1 No. 3, Tangerang City, approximately 30 km from Universitas Terbuka Pondok Cabe, South Tangerang. This MSME operates from a rented house and currently employs four workers responsible for production, packaging, and marketing. In its current stage of development, the partner MSME only serves a limited market, selling products to close relatives and consigning them to a few local stores. This condition indicates that the partner's product marketing has not yet reached its full potential and needs to be optimized to improve competitiveness in the market.

The challenges faced by the partner MSME include limited knowledge and skills in production optimization, packaging innovation, and marketing strategy development, particularly in leveraging digital platforms (Maulana, 2024; Yani, Mustafa, & Santosa, 2025). This aligns with previous research findings showing that food-sector MSMEs often encounter business development barriers due to low business literacy and minimal adoption of technology (Amornkitvikai, Tham, Harvie, & Buachoom, 2022). In fact, the application of simple technologies and internet-based marketing has been proven effective in increasing sales and expanding customer reach (Javaid, Haleem, Singh, & Sinha, 2024). Furthermore, despite the existing knowledge gap, the MSME has shown a commitment to growth, indicating strong potential for scalability and innovation.

Based on this background, this community service activity focuses on providing structured training and support programs to optimize the production and sales of the partner's basreng chips, with the explicit objectives of enhancing business competitiveness, improving worker welfare, and contributing to local economic development. Specifically, the research questions guiding this initiative are: 1) How can production efficiency and product innovation be enhanced in the partner MSME? 2) What digital marketing strategies are most effective in expanding the market reach of small-scale food MSMEs? 3) How can capacity-building interventions improve overall business sustainability and community impact? The training includes capacity building in more efficient production techniques, innovative and hygienic design and packaging, as well as the introduction and application of digital marketing strategies to reach a wider market (Adolph, 2024). Through this program, it is expected that the partner MSME will be able to achieve sustainable growth and serve as an example of an independent and competitive local food MSME (Purnomo & Purwandari, 2025).

Furthermore, this program is expected to create a model for fostering household-scale food MSMEs to become more adaptive to market changes and consumer needs in the digital era. By strengthening managerial aspects, product innovation, and online marketing literacy, this program aims to serve as a practical example of food-sector MSME development, while also providing inspiration for similar MSMEs in other regions to reinforce the role of MSMEs as key drivers of regional economic growth. In addition, the program seeks to enhance the entrepreneurial mindset and problem-solving capabilities of MSME owners, promote sustainable business practices, and facilitate networking opportunities with stakeholders such as local governments, universities, and industry associations. Through these efforts, it

is anticipated that participating MSMEs will not only increase sales and market reach but also build long-term resilience against economic fluctuations and evolving consumer trends (satpathy, Sahoo, Mohanty, & Mohanty, 2025).

In addition, the sustainability of local food MSMEs is not only influenced by production and marketing factors but also by their ability to build networks and partnerships with stakeholders such as local governments, universities, and community organizations. Strengthening collaborative ecosystems has been shown to accelerate MSME capacity building, encourage technology adoption, and open wider access to markets (Harsono & Rinanda, 2025). In this context, the collaborative approach implemented in this program serves as a strategic step to ensure that the partner MSME is not only capable of competing in the short term but also resilient in facing future economic and market dynamics.

METHOD

The method applied in this community service program followed a structured and systematic approach to ensure that the objectives could be effectively achieved. The process began with a preliminary assessment to identify the partner's main problems and needs, followed by program design, implementation of training and mentoring, monitoring of progress, and evaluation of outcomes. Each stage was designed to build upon the previous one, creating a continuous cycle of improvement. The overall research and implementation flow is illustrated in Figure 1.

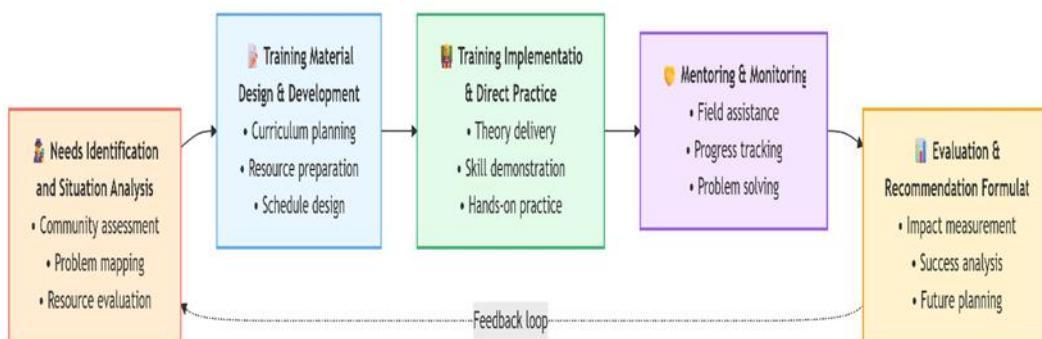


FIGURE 1. Flowchart

The image illustrates a cyclical training process consisting of five stages: needs identification, material design, implementation and practice, mentoring and monitoring, and evaluation and recommendations. Each stage is interconnected, with a feedback loop from evaluation back to needs identification to ensure continuous improvement and adaptability.

Furthermore, the methodology of this community service program follows a participatory approach involving both the MSME owners and workers. Data collection will be conducted using multiple methods, including structured questionnaires, direct observation, and interviews to assess current production practices, marketing strategies, and skill levels. Participants are selected based on clear inclusion criteria: they must be employees or owners of household-scale food MSMEs within the target area, willing to participate, and have at least one year of operational experience.

The training program spans a duration of four weeks, with weekly sessions of 2–3 hours. Each session includes practical exercises, demonstrations, and interactive discussions. Training materials cover production optimization techniques, product innovation, hygienic and attractive packaging design, and digital marketing strategies. Handouts, visual aids, and video tutorials will be provided to reinforce

learning.

Ethical considerations are strictly observed, including obtaining informed consent from all participants, ensuring confidentiality of responses, and providing the option to withdraw from the program at any time without consequence.

Evaluation metrics include pre- and post-training assessments of participants' knowledge, skills, and confidence levels, as well as tracking business performance indicators such as sales volume, customer reach, and product quality improvements. Feedback will be collected continuously during mentoring sessions to adjust training content as needed. The combination of quantitative and qualitative data ensures comprehensive monitoring and evaluation of program effectiveness.

Through this detailed methodology, the program aims not only to enhance the operational capacity and market competitiveness of the partner MSME but also to provide a replicable model for other household-scale food MSMEs in similar contexts.

RESULT AND DISCUSSION

RESULT

Participant Demographics

The program involved 6 core MSME employees and 1 owner, aged between 25 and 45 years, with an average of 1 years of experience in basreng production. All participants were fully engaged throughout the training sessions.

Production Efficiency

In terms of optimizing the production process, the partner was able to increase work efficiency by up to 20% through training in quality control and raw material utilization. The production time per batch decreased from 4 hours to 3 hours, while raw material waste was reduced by 15%. Measures included precise cutting of raw materials, regulating frying temperatures, and streamlining workflows. Equipment maintenance knowledge was also provided, ensuring longer lifespan and optimal functionality.

Equipment and Hygiene Improvements

The introduction of an automatic mixer reduced manual stirring and fatigue, while a frying thermometer maintained stable oil temperature, enhancing dough quality and consistency. Hygienic standards, such as mandatory handwashing, aprons, and hair covers, improved cleanliness scores and fostered a more responsible work culture.

Product Innovation and Packaging

The old plastic packaging was replaced with modern, colorful standing pouches, including airtight seals and complete product information. Market testing with 30 respondents showed 90% preferred the new packaging, indicating higher perceived quality and attractiveness.

Digital Marketing Implementation

The PKM team assisted in creating an Instagram account (@basreng_Bowie) and an official Shopee store. Participants were trained to produce promotional content, short videos, and engaging posts. Within the program duration, online sales increased by 35%, expanding market reach beyond Tangerang.

Worker Welfare and Managerial Capacity

An additional employee was recruited for digital marketing, and wages increased by 15% to reflect enhanced productivity. A simple business dashboard was introduced to monitor production, inventory, and sales, improving operational efficiency and decision-making speed.

TABLE 1. Key Program Outcomes of Basreng MSME Community Service Program

Aspect	Baseline	Post-Program	Change / Impact
Production Efficiency	4 hours per batch	3 hours per batch	-25% production time; +20% efficiency
Raw Material Waste	100% (baseline)	85%	-15% waste
Online Sales	N/A	Active Instagram & Shopee	+35% growth in online sales
Worker Wages	IDR X	IDR X + 15%	+15% wage increase
Number of Employees	4	5	+1 employee (digital marketing)
Product Packaging	Plain plastic	Colorful standing pouches with labels & airtight seal	+90% respondents preferred new packaging
Market Reach	Close relatives + few local stores	Expanded to 5 retail outlets + online customers outside Tangerang	Significant market expansion
Hygiene & Work Culture	Basic	Handwashing, aprons, hair covers	Improved cleanliness and disciplined work culture

Source: Compiled by the authors

The development program for the Basreng MSME brought significant improvements across various aspects of the business. In terms of production, the processing time per batch was reduced from 4 hours to 3 hours, resulting in a 20% increase in efficiency and a 15% reduction in raw material waste. In marketing, online sales grew by 35% through the use of Instagram and Shopee, supported by market expansion into five retail outlets and new customers outside Tangerang. Employee welfare also improved, with a 15% wage increase and the hiring of an additional staff member dedicated to digital marketing. Product innovation through new packaging shifting from plain plastic to colorful labeled standing pouches with airtight seals was favored by 90% of respondents, enhancing product image and attractiveness. Furthermore, the implementation of hygiene standards, such as handwashing, the use of aprons, and hair covers, fostered greater cleanliness and workplace discipline, which in turn strengthened consumer trust. Overall, the combination of production efficiency, packaging innovation, digital marketing, and a stronger hygiene culture has driven business growth and increased the competitiveness of the MSME.

DISCUSSION

In the implementation of this Community Service Program (PKM), several significant achievements were attained, both in technical and managerial aspects. In terms of optimizing the production process,

the partner was able to increase work efficiency by up to 20% through training in quality control and techniques for utilizing raw materials. This improvement was achieved through several concrete measures, such as introducing precise raw material cutting techniques to ensure uniform sizes and minimize waste, regulating frying temperatures for more consistent texture and doneness, and streamlining workflows to make production processes more structured and time-efficient. In addition, the partner was equipped with knowledge on equipment maintenance to ensure longer lifespan and optimal functionality. All these improvements not only accelerated production time but also reduced raw material waste and operational costs, thereby enhancing product quality while supporting the long-term sustainability of the business.



FIGURE 2. Training session on quality control and raw material utilization for MSME partners

Furthermore, improvements to work equipment have had a significant impact on the smoothness and effectiveness of the production process. With the introduction of an automatic mixer, workers no longer need to stir manually, thereby reducing fatigue and ensuring a more uniform dough quality. Meanwhile, the use of a frying thermometer helps maintain oil temperature at a stable, standard level, allowing products to cook faster and more evenly. This combination of innovations has proven effective in reducing production time per batch from the original 4 hours to only 3 hours, while also enhancing product consistency and minimizing the risk of defects caused by improper frying processes.



FIGURE 3. Handover of new equipment to support the MSME production process

The implementation of hygienic standards in the production process was also one of the main focuses of this Community Service Program (PKM). These standards included mandatory handwashing before starting work, wearing clean aprons during production, and using hair covers to minimize potential contamination. The implementation of these measures proved effective, as evidenced by improved cleanliness scores. In addition to enhancing product quality and safety, these changes also fostered a more disciplined and responsible work culture, thereby increasing consumer trust in the MSME.

Innovation in product design and packaging was equally significant in boosting the competitiveness of MSME products (Suherlan and Widiyanti, 2021). The old plain plastic packaging was replaced with modern, colorful labeled standing pouches containing complete information, such as the MSME logo, product composition, and producer contact details. Besides being more informative and visually appealing, the new packaging was also equipped with an airtight seal to extend shelf life while preserving the crispness and flavor of the product for longer. Based on a market test involving 30 respondents, 90% rated the new packaging as more attractive and hygienically reliable compared to the previous version. This result demonstrates that packaging innovation can provide added value and positively influence customers' perceptions of MSME products.

In addition to packaging improvements, the implementation of digital marketing successfully expanded the MSME's reach to broader and more diverse markets. The PKM team assisted the partner in creating an Instagram account (@basreng_Bowie) and opening an official Shopee store as new sales channels. Partners were trained to independently create promotional content, such as short videos of the production process, customer testimonials, and engaging promotional posts such as "Buy 2, Get 1 Free." With these digital platforms, the MSME can more easily reach potential customers while interacting directly and more personally, which is expected to increase purchase interest and customer loyalty in the long term.



FIGURE 4. Direct assistance in the production of basreng

The impact of this program on the MSME was tangible and brought significant change. In addition to successfully penetrating new markets in five additional retail outlets and reaching customers outside Tangerang through online channels, worker welfare also improved. This was evident from the recruitment of an additional employee in the digital marketing division to handle the growing volume of online orders, as well as a 15% wage increase as a form of appreciation for enhanced productivity and work quality. On the managerial capacity side, the MSME strengthened its operational systems through the creation of a simple business dashboard to monitor production processes, stock availability, and sales in an integrated and more transparent manner. With this tool, business decision-making became faster and more accurate, increasing operational efficiency and making growth potential more measurable.

The success of this program is in line with the study by (Tanjung, Parkhurst, & Young, 2025), which emphasizes that packaging innovation can increase the selling value of MSMEs, as well as (Malesev & Cherry, 2021), who highlight the effectiveness of digital marketing in expanding market share and reaching new customers. Furthermore, the continuous mentoring provided after training proved key to sustaining the program and minimizing digital literacy challenges, consistent with the findings of (Bansal & Choudhary, 2024; Chohan & Hu, 2022), which underline the importance of regular supervision and guidance to enable partners to adopt new technologies and innovations more independently and sustainably. This is also supported by the classic perspective of (Franco, 2020), who emphasizes innovation as a driver of entrepreneurial competitiveness, and more recent contributions by (Esteves, Genus, Henfrey, Penha-Lopes, & East, 2021), highlighting the role of small businesses in economic transformation. In terms of community development methodology, the program reflects principles

outlined by (Dushkova & Ivlieva, 2024), which stress participatory approaches and empowerment as key to sustaining long-term change in local enterprises.

However, several challenges emerged during program implementation. One was inadequate internet infrastructure at the production site, which slowed down the learning process and the implementation of new technologies. In addition, there was initial resistance from workers in changing old habits, particularly regarding the adoption of new work procedures and the use of more modern equipment. To address these issues, the PKM team provided printed modules as emergency references so workers could still access materials without relying on the internet and conducted direct, hands-on mentoring and demonstrations to facilitate skill transfer. This approach proved effective in building trust and increasing worker comfort in practicing changes in the workplace. Another challenge was the 25% increase in packaging costs. However, this was resolved through direct cooperation with local suppliers to keep prices competitive without sacrificing the quality and visual appeal of the packaging.

From a sustainability perspective, the MSME is now better prepared to face long-term challenges. In addition to having a regular promotional calendar and the internal capability to develop new product variants, such as sweet-spicy basreng and seaweed basreng, the partner can now leverage digital platforms to market products more creatively and reach a wider customer segment. With these new capacities, the community service program has the potential to be replicated as a development model for similar food-based MSMEs in other regions, particularly in the areas of digital marketing and standardization of home-scale production processes. Beyond its economic impact, the program also delivered social benefits by enhancing worker competencies especially among women in the informal sector thereby supporting SDG Goal 8 on providing decent work and fostering inclusive economic growth.

CONCLUSION

The implementation of the Community Service Program (PKM) has provided significant technical and managerial benefits for the MSME partner. Quality control training, optimized raw material usage, equipment modernization, hygienic production standards, innovative packaging, and digital marketing integration have collectively improved efficiency, product quality, and market reach. Modern airtight packaging increased customer appeal, while digital promotion expanded sales beyond local markets. The program also contributed to social impact by enhancing workforce skills, creating new jobs, and strengthening managerial decision-making through a simple business dashboard.

Despite challenges such as limited internet access, resistance to procedural changes, and rising packaging costs, these were effectively addressed with offline learning tools, mentoring, and supplier partnerships. The outcomes highlight the importance of strengthening digital infrastructure, ensuring continuous training, adopting sustainable packaging, and fostering collaboration with other MSMEs. Specific next steps include product diversification (e.g., sweet-spicy and seaweed-based variations) and the formation of joint marketing clusters to improve competitiveness and reduce promotional costs.

Future research should explore long-term impacts of digital adoption on MSME growth, the scalability of eco-friendly packaging solutions, and strategies to institutionalize ongoing mentoring. These findings suggest that the PKM model can be replicated in similar MSME contexts, amplifying both economic resilience and social inclusion in the food sector.

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