

## Strengthening the MSME Business Ecosystem Through Smart Economy–Based Optimization of BUMDes Institutions in Branjang Village

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### ABSTRACT

This community service program aims to strengthen the business ecosystem of MSMEs in Branjang Village by optimizing the role of the Untung Makmur Village-Owned Enterprise (BUMDes) based on a Smart Economy framework. The implementation method integrates comprehensive capacity building and digital transformation rather than discrete training stages. Key activities included business management training, administrative digitization via the E-HAS application, assistance with business legality (NIB and Halal certification), and digital marketing optimization. The results indicate a significant increase in the managerial capacity of BUMDes and MSME operators. The program successfully established administrative efficiency, secured business legality, and enhanced product branding and market reach through e-commerce. Ultimately, this initiative demonstrates that integrating Smart Economy principles into BUMDes management acts as a vital catalyst for fostering a resilient, inclusive, and sustainable village economic ecosystem.

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## INTRODUCTION

Branjang Village was officially designated as a pioneering tourist village by the Regent of Semarang in 2020, which also serves as an acknowledgment of the village's tourism potential, both in terms of natural beauty, local cultural richness, and creative economic potential. As a form of sustainable development, Branjang Tourism Village succeeded in occupying a position in the top 300 best tourist villages at the 2023 Indonesian Tourism Village Award event. The designation of Branjang Village as a tourist village has had a significant impact on the growth of Micro, Small, and Medium Enterprises (MSMEs). Currently, there are 104 active MSMEs, with 74% engaged in food and beverage processing, 14% in handicrafts, and 12% in the service sector (Putri et al., 2022). These MSME products not only serve as souvenirs for tourists but are also integrated into the tour packages offered (Booklets). To optimize the potential of tourism and MSMEs, the Branjang Village Government established the Untung Makmur Village-Owned Enterprise (BUMDes) institution on August 2, 2021, which has obtained legal entity status through registration number AHU-00807.AH 0133. TAHUN 2021. Based on the results of the investigation, it is known that within a period of three years, the Village Government has allocated funds of IDR 85,000,000 to BUMDes to support the development of MSME businesses in the village. This budget support has made a positive contribution to improving the performance of BUMDes Untung Makmur, which in the last three years has shown a growth trend and in 2023 succeeded in entering the developing BUMDes category with a score of 76.25.

Despite the positive performance of BUMDes Untung Makmur, existing managerial, legal, and digital marketing constraints have limited the sustainability and scalability of MSMEs, indicating the need for an integrated Smart Economy-based intervention. An interview with Mr. Suhardi, the Village Head of Branjang and BUMDes Commissioner, revealed that BUMDes management has not been maximizing its efforts in empowering and developing MSMEs. This is reflected in the fact that sales of MSME products increase only during the MSME market, which is integrated with cultural performances, a routine two-day event held annually in November. Outside of these events, sales of MSME products tend to be low. This situation is further exacerbated by the decline in tourist visits to Branjang Tourism Village. Therefore, sales of MSME products in the village remain seasonal and highly dependent on the continuity of cultural performances, which have a limited market reach within the local area.

The results of an internal evaluation conducted by the Head of the BUMDes, Mr. Zamroni, indicate that these problems are influenced by limited facilities for socialization and managerial training from external parties. This condition has resulted in low managerial capacity among the management in managing the BUMDes business. Furthermore, to date, the BUMDes does not have Standard Operating Procedures (SOP) for either institutional or business unit management. SOP are crucial as instruments for improving performance and service quality through accountability and transparency, as well as serving as operational guidelines for ensuring each business unit operates effectively, efficiently, and sustainably (Muhammad Frengki et al., 2023).

Observations also identified several issues hindering Branjang Village's MSME products from penetrating a wider market. First, the lack of business legality, such as a Business Identification Number (NIB), halal certification, and trademark. The lack of business activity document archives makes it difficult for partners to manage these legalities, even though applicable regulations require MSMEs to have business legality to obtain legal protection, ease of business development (including marketing), access to financing, and requirements for obtaining government assistance facilities (Kusmanto & Warjio, 2022; Soimah & Imelda, 2023). Second, low creativity and innovation in product packaging design, as indicated by the use of environmentally unfriendly packaging, an unattractive appearance,

and minimal product information. However, environmentally friendly packaging and clear product information are important factors in influencing consumer decisions, especially in transactions through marketplaces (Boesen et al., 2019; Nazar MA, 2021; Fianda et al., 2021; Herbes et al., 2018; Singh & Pandey, 2018). Third, the lack of e-commerce-based digital marketing media. The existing Branjang Tourism Village website only serves as a limited information medium regarding MSME products and does not yet support online transactions.

Based on the results of the situation analysis, the implementation team proposed a Community Partnership Empowerment Program (PKM) with two main objectives. First, to improve the managerial capacity of BUMDes managers and partner MSMEs in aspects of business management, business legality, business activity archive management, and product design for digital marketing. Second, to expand the acceptance of MSME products in a wider market through several strategies, namely: (a) providing a digital platform as a database management system for business activities; (b) facilitating business legality registration; (c) providing semi-automatic labeling machine technology; and (d) developing an e-commerce website. This PKM program is in line with the achievement of Sustainable Development Goals (SDGs) number 8 on Decent Work and Economic Growth and SDG number 9 on Industry, Innovation, and Infrastructure. Furthermore, this program also contributes to the third Asta Cita indicator, namely, improving the quality of employment and strengthening entrepreneurship.

## PROBLEMS AND SOLUTIONS

Based on the description presented in the introduction, two priority issues must be resolved immediately, as agreed upon between the proposal team and partners: management and marketing issues. A description of the identification of priority issues and analysis of partner needs is presented in Table 1 below.

**TABLE 1.** Identify Priority Problems and Analyze Partner Needs

Problem Aspects	Priority Issues	Community Needs Analysis
<b>Management</b>	a. Low managerial capacity of BUMDes managers in developing MSME business units;	a. BUMDes is managed by human resources with competent managerial capacity so that it can develop MSME business units;
	b. Low understanding of BUMDes managers regarding the importance of compiling archives of business activity documents carried out by MSME actors;	b. BUMDes managers have the skills to compile archives of documents on business activities carried out by MSME actors;
	c. There is no database management system available that can document MSME business activities;	c. BUMDes has a database management system that can document MSME business activities;
	d. The products of the MSME business units managed by BUMDes do not yet have business legality.	d. The products of MSME actors have business legality.
<b>Marketing</b>	a. Low creativity and innovation of partners in creating environmentally friendly packaging, labeling, branding, and attractive and informative product catalogs to be marketed online;	a. Availability of creative and innovative MSME products in terms of environmentally friendly packaging, labeling, branding, as well as attractive and informative product catalogs to be marketed online;
	b. Product sales are seasonal and only reach the local market because marketing is only done offline (depending on cultural performance events) and partners do not yet have an e-commerce website.	b. BUMDes has an e-commerce website that can be used to market MSME products online so that it can reach a wider market, even between regions/districts.

This PKM Program focuses on solving problems related to optimizing the role of BUMDes managers in creating a smart economy-based MSME business ecosystem through strengthening business legality and digital marketing. The success of this community service program has resulted in increased managerial capacity of BUMDes managers in developing MSME businesses, thereby encouraging impactful business growth in Branjangan Village. This PKM program is expected to further enhance the role of BUMDes managers as empowerers and drivers of the people's economy, thereby increasing Village Original Income (PADes), which is beneficial for improving the welfare of the people in Branjangan Village.

The solutions offered in this PKM program are: (1) strengthening the managerial capacity of BUMDes managers and partner MSMEs related to business management, business legality aspects, business activity archive management, and product design in digital marketing; (2) provision and utilization of a digital platform as a database management of MSME business activities to facilitate distribution during the business legality registration process; (3) registration of business legality for partner MSME businesses and products to increase sales value and acceptance in a wider market; (4) provision and utilization of semi-automatic labeling machine technology to increase the efficiency of the production process and maintain the consistency of the appearance of product packaging that includes information needed by consumers, such as trademarks, MSME identity, legality, production date and code, net weight, product composition, nutritional value information, and ingredient information; (5) development and utilization of an e-commerce website as a digital marketing medium for partner MSME products equipped with product page features, shopping carts, payment gateway systems, inventory management, business profile pages, and contact pages with a responsive and interactive display and compatible on various devices, so that it can reach a wider market and increase product sales.

These solutions are designed to address both managerial and marketing constraints through an integrated Smart Economy approach that strengthens institutional capacity and market access for MSMEs. To measure the achievability of this solution, the proposal team needs to set output completion targets that align with the proposed program. The proposal team sets a target of a partner satisfaction survey of at least 80% for the series of programs or solutions offered. This assessment aspect is carried out specifically on increasing partner empowerment, which is measured based on the achievement indicators for each proposed solution, as presented in Table 2 below.

**TABLE 2.** Target Achievement of Community Partner Problem Solutions

Priority Issues	Solutions Offered	Output Completion Targets/Achievement Indicators
Low managerial capacity of BUMDes managers in developing MSME businesses	Providing training that can increase the managerial capacity of BUMDes managers in developing MSME businesses	BUMDes managers can prepare 1 (one) SOP document for BUMDes business units
The low level of understanding among BUMDes managers regarding the importance of compiling archives of business activity documents carried out by MSME actors	Providing training in document archive management for MSME business activities	Increasing the understanding and skills of BUMDes managers in the process of managing MSME business activity document archives by at least 80%
The unavailability of a database management system that can document MSME business activities	Providing a database management system in the form of an E-HAS digital platform, accompanied by training and assistance in its use	a. Availability of 1 (one) digital platform that can be used free of charge by BUMDes managers as a database management system for

Priority Issues	Solutions Offered	Output Completion Targets/Achievement Indicators
		MSME business activities b. There must be at least 10 (ten) MSMEs whose business activities have been successfully documented completely in the E-HAS database by partners
The products of the MSME business units managed by BUMDes do not yet have business legality	Providing training and assistance in registering business legality (NIB and Halal Certification)	There must be at least 10 (ten) BUMDes partner MSMEs that have NIB and Halal Certification
Low creativity and innovation of partners in creating environmentally friendly packaging, labeling, branding, and attractive and informative product catalogs to be marketed online	Providing semi-automatic product packaging label sticker pasting machines, accompanied by training and assistance in making environmentally friendly packaging, labeling, branding, and attractive product catalog photos to be marketed online	a. Availability of 1 (one) semi-automatic product packaging label sticker machine that can be used by BUMDes managers for more practical and innovative product labeling b. There must be at least 10 (ten) BUMDes partner MSMEs that have environmentally friendly packaging with attractive labels, brands, and catalog photos to be marketed online
Product sales are seasonal and only reach the local market because marketing is only done offline (depending on cultural performance events), and partners do not yet have an e-commerce website	Develop an e-commerce website that can be used by BUMDes managers to market MSME products online, accompanied by training and assistance in its use	a. Availability of 1 (one) e-commerce website belonging to BUMDes b. There must be at least 10 (ten) MSMEs that have successfully sold on the BUMDes e-commerce website

## METHOD

The method used by the implementing team in implementing the PKM program is Participatory Rural Appraisal (PRA), a problem-solving method that emphasizes the involvement of target partners in active participation in ongoing outreach, training, and mentoring activities organized by the proposing team (Coghlan & Brydon-Miller, 2014). The PRA method is implemented through tutorials, discussions, and practical exercises, as detailed in Table 3 below.

**TABLE 3.** Solutions, Activity Plans, Approaches, and Partner Participation

Solution	Activity Plan	Approach	Partner Participation	Type of Data	Evaluation Indicators
<b>Problems in the Field of Management</b>					
Providing training to increase the managerial capacity of BUMDes managers in developing MSME businesses.	Facilitate training to increase the capacity of BUMDes managers.	Provide modules on business management & legality; Socialization on MSME scale development; Tutorials on preparing SOP.	Study modules; Participate in discussion; Practice compiling SOPs for BUMDes business units.	Pre-test & Post-test (Theory) Observation (Document Review) FGD	Achievement Score: Increase in knowledge score (target >20%). Output: Availability of draft SOPs for BUMDes/MSME units.
Providing training in document archive management.	Facilitating training on document archive management.	Provide modules on archive management; Socialization on the importance of archiving; Tutorials on recording, storing, and destroying archives.	Study modules; Participate in discussions; Practice archive management; Complete pre-test and post-test.	Pre-test & Post-test (Theory) Partner Satisfaction Survey	Achievement Score: Statistically significant increase between pre-test and post-test scores. Satisfaction: Min. score of "Satisfied" regarding training material.
Providing E-HAS platform with training and assistance.	Facilitation of E-HAS platform and training.	Reactivate E-HAS server; Provide user guidebook; Tutorials for archiving via HAS; Intensive assistance for accuracy.	- Provide hardware; - Study guidebook; - Active role in tutorials; - Archive documents of min. 10 MSMEs.	Observation (Skill Checklist) System Log Review (Output verification)	Skill Competency: Ability to operate E-HAS independently Output: 10 MSMEs successfully archived in the system.
Training and assistance in registering business legality.	Facilitating training and mentoring for NIB & Halal Certification.	Provide modules on NIB/Halal; Tutorials on registration; Assistance to ensure accuracy of registration.	- Study modules; - Coordinate products; - Register legality of min. 10 MSME products; - Provide financial assistance data.	Pre-test & Post-test (Legality Knowledge) Observation (Document Verification)	Achievement Score: Increased understanding of legal requirement Output: Issuance of 10 NIBs and Halal Certificates.
<b>Problems in the Marketing Field</b>					
Providing label sticker machines, training on eco-friendly packaging, branding, and photos.	Facilitation of machines, training on eco-friendly packaging, branding, and catalog photos.	Procurement of machines & manuals; Tutorials on packaging, branding, & photos;	Provide storage for machines; Participate in creating packaging/photos; Practice using machines.	Observation (Psychomotor/Skill) Product Assessment.	Skill Competency: Proficiency in using the labeling machine. Output Quality: Availability of high-quality product

Solution	Activity Plan	Approach	Partner Participation	Type of Data	Evaluation Indicators
<b>Develop an e-commerce website with training and assistance.</b>	Facilitating the development of e-commerce websites and training.	Practice using sticker machines.			photos and branding assets.
		Upgrading "Deswita Branjang" website; Configure website; Tutorials on use and maintenance as a digital marketing medium.	Provide hardware; Provide design suggestions & product data; Practice marketing via website.	Observation (System Usability); FGD (Evaluation & Sustainability)	Output: Functional e-commerce website with active catalog; Partner Satisfaction: High satisfaction level regarding the digital marketing tool.

After the entire series of community service program activities was implemented, the proposing team, together with BUMDes managers and partner MSME actors, held a Focus Group Discussion (FGD) to review and evaluate various aspects of program implementation. The main agendas in the FGD were: (1) measuring the achievement of the target completion of outputs/achievement indicators for each solution offered; (2) assessing the level of partner satisfaction with the implementation process, support provided, and results achieved in the community service program; and (3) developing concrete strategies and steps as follow-up to increase the effectiveness and impact of the program's sustainability in the following year.

## RESULTS AND DISCUSSION

This PKM reflects a holistic and integrated approach to local economic empowerment. This program is not only relevant to the specific needs of Branjang Village but also aligns with the national development agenda to strengthen the people's economy, particularly the MSME sector. The active involvement of BUMDes Untung Makmur managers and MSMEs in Branjang Village is key to the successful implementation of this program, emphasizing the strategic role of BUMDes as a key pillar in driving the village economy (Kumala & Kustomo, 2022; Prasetyani et al., 2025; Satoto et al., 2024). This PKM program has been implemented through a series of structured and comprehensive stages, with a description of the results of each stage as follows.

### Improving the Managerial Capacity of BUMDes in Developing the Scale of MSME Businesses

The initial phase of the program focused on improving the managerial capacity of BUMDes Untung Makmur managers. This training was held on August 2, 2025, at the Untung Makmur BUMDes Cafe. Teguh Hardi Raharjo, the speaker, covered essential topics such as strategic planning, financial management, marketing, and product development. The training demonstrated an improved understanding of modern business management principles among BUMDes managers, as demonstrated by the average participant achievement scores in Table 4. They are now better able to identify market opportunities, develop solid business plans, and efficiently allocate resources to support the growth of local MSMEs, as well as develop Standard Operating Procedures (SOPs) for developing MSME Business Units. Improved BUMDes managerial capacity is directly correlated with their ability to create a conducive environment for MSME growth, as strong BUMDes can more effectively manage village

assets and develop sustainable business units (Malik et al., 2021). Similarly, increasing MSMEs' understanding of essential business management is a prerequisite for the sustainability and scalability of their businesses (Afdal et al., 2021; Pahingguan et al., 2025).

**TABLE 4.** Average Achievement Score Per Indicator of BUMDes Managerial Capacity

No.	Indicator	Maximum Weight (%)	Average Participant Achievement (%)
1	Understanding Strategic Planning	30%	26%
2	Financial Management Skills	25%	19%
3	Product Marketing Strategy	25%	20%
4	Network and Partnership Development	20%	17%
	Total	100%	82%

The data in Table 4 shows an average increase of 82% in each managerial capacity indicator, indicating the effectiveness of the training in improving the knowledge and skills of BUMDes managers. The highest average scores were seen in the "Strategic Planning Understanding" and "Product Marketing Strategy" indicators, which are essential foundations for BUMDes operations in empowering strong and sustainable MSMEs.



**FIGURE 1.** (a) Delivery of material for increasing the managerial capacity of BUMDes managers; (b) BUMDes managers and MSME actors who participate in training.

### Administrative Digitalization and Operational Efficiency

The digitalization aspect is a progressive step towards the "Smart Economy" concept promoted in the program theme. Training on document archive management for MSME business activities, followed by archiving practices through the E-HAS application, has increased administrative efficiency and accountability. Good archive management is the foundation for business sustainability. This training was held on August 9-10, 2025, with speakers Ahmad Saeroji and Ubaedul Mustofa. BUMDes managers and MSMEs were trained on the importance of document management, the types of business documents that must be archived, and systematic archiving methods. As a result, participants realized the urgency of neatly recording and storing documents, such as transaction records, permits, and customer data.

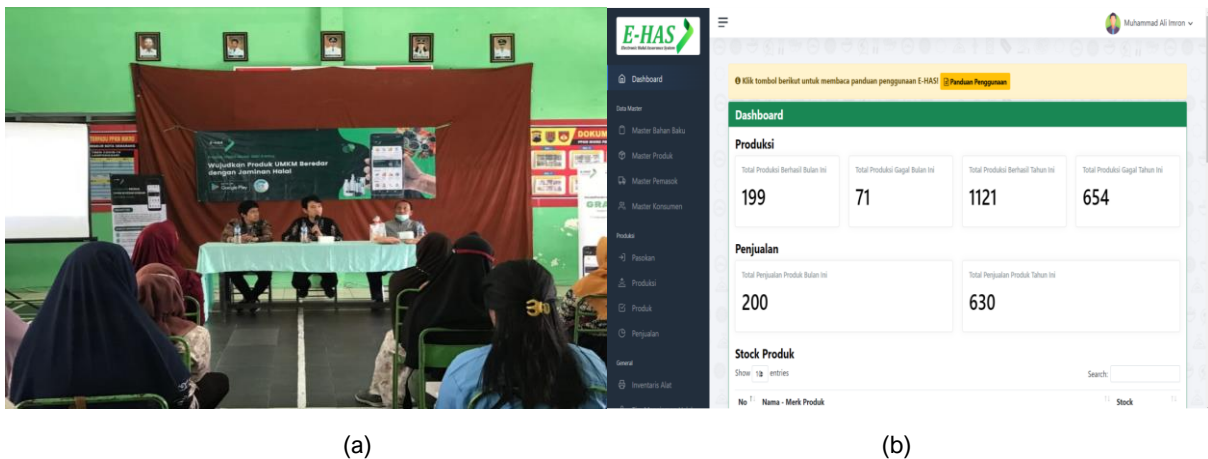
In the digital era, administrative efficiency and data accessibility are crucial (Frinaldi et al., 2024). The use of e-HAS not only simplifies the recording and reporting process but also increases transparency and accountability, which are vital elements of good business governance (Sari, 2023; Ullah et al., 2016). The ability of MSMEs to manage documents digitally also reduces administrative burdens and allows them to focus on their core business, in line with the growing trend of MSME digitalization (Afdal et al.,

2021).

**TABLE 5.** Average Achievement Score Per Indicator of Business Activity Document Archive Management

No.	Indicator	Maximum Weight (%)	Average Participant Achievement (%)
1	Knowledge of Important Document Types	30%	26%
2	Manual Filing Capabilities	20%	15%
3	Archiving Capabilities Through the E-HAS Application	30%	27%
4	Document Search Efficiency	20%	18%
Total		100%	86%

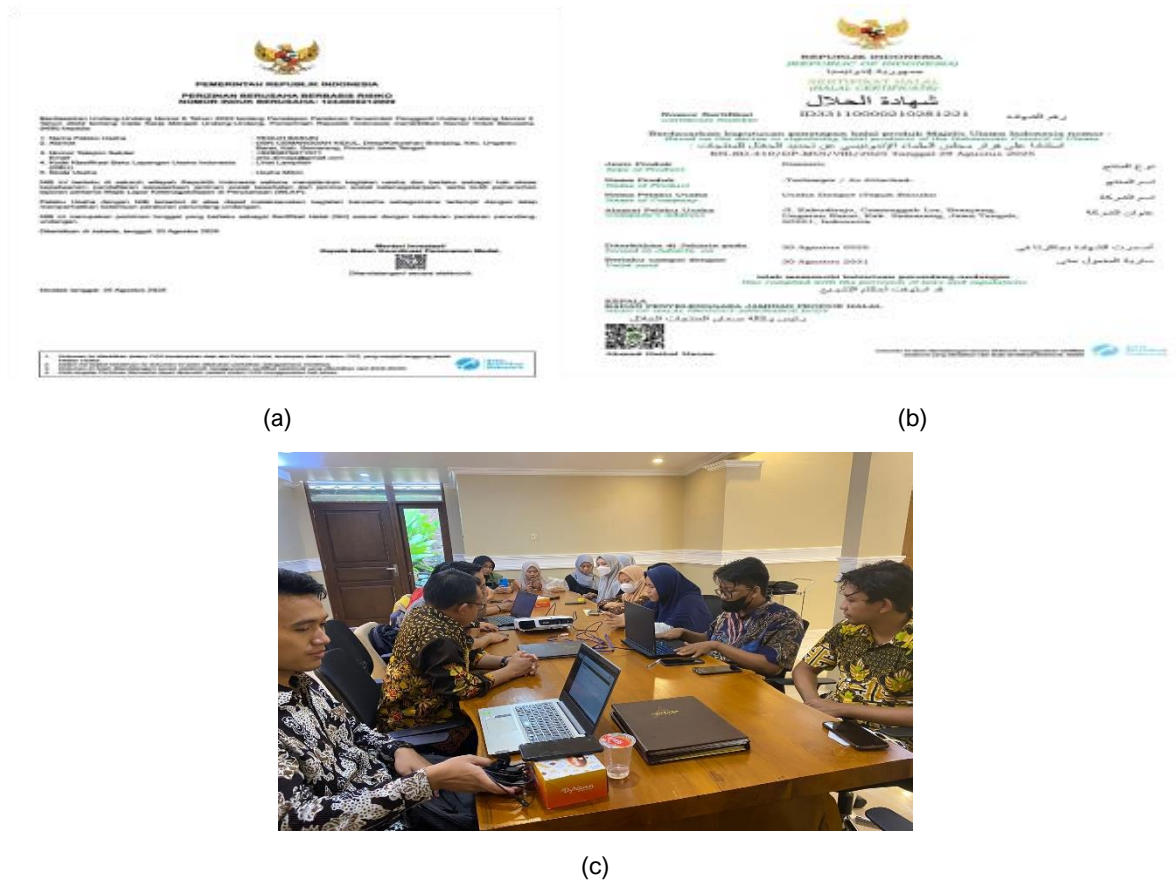
The data presented in Table 5 shows significant improvements in scores across all archive management indicators, with an average score of 86%. The highest score was for "E-HAS Application Usage Skills," demonstrating the program's success in introducing and training participants in new archiving technologies. This has a direct impact on document retrieval efficiency and improved data management.



**FIGURE 2.** (a) Training on document archive management for MSME business activities; (b) E-HAS application display.

## Strengthening Business Legality and Market Access

Business legality is key to market expansion and access to broader resources. Focusing on business legality, particularly the NIB (National Business License) and halal certification, demonstrates the service team's understanding of the structural challenges often faced by MSMEs. Many MSMEs in Indonesia still operate without adequate legality, which limits their access to financing, larger markets, and legal protection (Jumhana et al., 2024). Assistance in obtaining a NIB (National Business License) opens the door for MSMEs to integrate into the formal economic ecosystem, granting them an official business identity (Indarto, 2025). Meanwhile, halal certification expands market reach, particularly to the large Muslim consumer segment, both locally and nationally (Sriani et al., 2022). This is a concrete step towards increasing the competitiveness and sustainability of MSMEs, enabling them to meet higher market standards and attract a wider consumer base (Soimah & Imelda, 2023).



**FIGURE 3.** (a) NIB of one of the MSMEs in Branjangan Village; (b) Halal certificate of one of the MSMEs in Branjangan Village; (c) Assistance in Business Legality Registration.

### Increasing Product Attractiveness Through Branding and Visualization

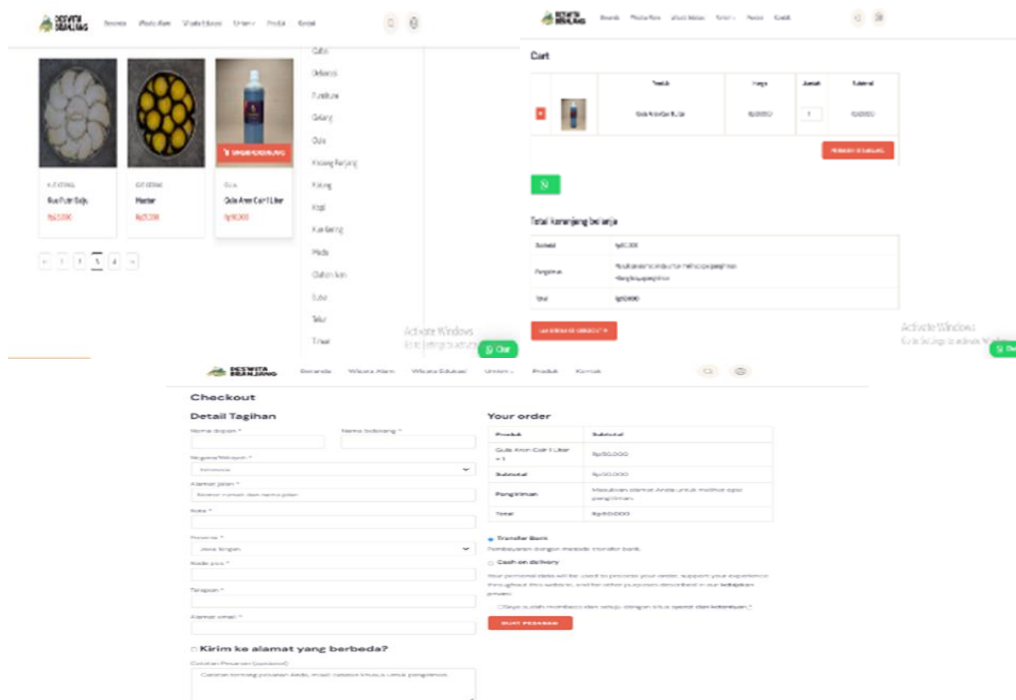
Branding, labeling, and product photography development are strategic investments in marketing. In an increasingly competitive market, an attractive and professional product image significantly influences consumer purchasing decisions (Hatta & Salman, 2016). Participants were trained in designing attractive labels, applying product labels using semi-automatic machines, building consistent branding, and product photography techniques for catalogs. As a result, Branjangan Village MSME products now have a more professional and attractive appearance, creating a strong brand identity that differentiates them in the market (Alisa Septivianti & Made Ida Pratiwi, 2023). The resulting high-quality catalog photos are ready to be used for online and offline promotions, enhancing the product's visual appeal to consumers and strengthening the brand's position in their minds (Gielens & Steenkamp, 2019).



**FIGURE 4.** (a) Photo catalog of beverage products; (b) Photo catalog of food products

## Optimizing Digital Marketing Through E-commerce

The implementation of an e-commerce website as a digital marketing medium is the culmination of efforts to strengthen the smart economy-based business ecosystem. The presence of MSMEs on digital platforms allows them to overcome geographical boundaries and reach global markets (Rahayu & Day, 2017). Training covers how to upload products, manage orders, and use digital marketing strategies through the website. As a result, Village-Owned Enterprise (BUMDes) managers and MSME owners are now proficient in operating their own e-commerce websites. They can utilize this platform as a primary medium to reach a wider consumer base, manage online transactions, and analyze sales data for marketing strategy development (Ruscitasari et al., 2021). The existence of this e-commerce website is expected to open greater market access and significantly increase the sales volume of MSME products in Branjang Village, while simultaneously building MSME resilience amidst the changing digital economic landscape (Kamil & Miranda, 2024; Orinaldi, 2020).



**FIGURE 5.** Developed E-Commerce Website Appearance

Overall, this community service program not only provides training and technical assistance, but also builds the institutional capacity of BUMDES and MSMEs in a sustainable manner. The synergy between UNNES, BUMDES Untung Makmur, and MSMEs in Branjang Village creates an effective community service model, which is expected to be replicated in other areas to encourage inclusive and sustainable village economic growth. The positive impact of this program is seen in increased managerial capacity, administrative efficiency through digitalization, strengthening business legality, increasing product appeal, and optimizing digital marketing, which collectively contribute to strengthening the MSME business ecosystem in Branjang Village. These findings confirm that Smart Economy-based institutional strengthening of BUMDes plays a pivotal role in enhancing MSME resilience, competitiveness, and sustainability in rural areas.

## CONCLUSION

This community service program successfully strengthened the MSME ecosystem in Branjang Village through the Smart Economy-based optimization of BUMDes "Untung Makmur." The intervention yielded significant tangible impacts, specifically the enhancement of managerial capacity, administrative efficiency via the E-HAS digital platform, and the formalization of business legality through NIB and Halal certification. Furthermore, the program elevated product competitiveness by implementing professional branding standards and integrating an e-commerce platform, effectively expanding the digital market reach for local enterprises. Ultimately, this initiative establishes a sustainable foundation for inclusive rural economic growth by synergizing institutional management with digital adoption. The developed model demonstrates high replicability, serving as a scalable framework for other villages to foster economic resilience through the strategic collaboration of BUMDes and MSMEs in the digital era.

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