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Empowering dried bamboo shoot MSMEs through product design and digital promotion

Heni Ermewaningsih[1], **Fransiska Elly Renni Susanti**[1], **Anisa Safitri**[2]

[1]Department of Computer Engineering, [2]Department of Computer Entrepreneurship, Institut Teknologi Keling Kumang
Jl. Merdeka Timur Km 5, Sekadau, West Kalimantan79511, Indonesia

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ABSTRACT

This community service program aimed to enhance the capacity of dried bamboo shoot micro, small, and medium enterprises (MSMEs) through product packaging development and digital promotion assistance. The program was conducted in Bokak Sebumbun Village, Sekadau Hilir District, Sekadau Regency, involving 12 MSME participants. The main challenges faced by the participants included the use of simple packaging without product identity and the limited utilization of digital media for product promotion. The program was implemented through a needs assessment, product packaging design training, and hands-on assistance in using WhatsApp Business with participants' own smartphones. The results showed that participants successfully developed more informative product packaging by adding product labels, created digital product catalogs, promoted products through digital media, and utilized WhatsApp Business as a communication platform with customers. Evaluation results indicated an increase in the number of participants using WhatsApp Business for product promotion from 2 to 10 participants. In addition, the average pre-test score increased from 1.8 to 4.2 after the training and mentoring activities. The program contributed positively to improving participants' knowledge and practical skills in product packaging development and digital promotion, thereby supporting the marketing capacity and competitiveness of dried bamboo shoot MSMEs.

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1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in boosting rural economies by leveraging local potential and creating employment opportunities. One local commodity with economic value in rural areas is dried bamboo shoots, a processed derivative of fresh bamboo shoots produced through boiling and sun-drying to extend product shelf life. Dried bamboo shoot production is widely undertaken by rural communities due to the high availability of raw materials and the straightforward processing methods, which utilize basic household equipment (Tambunan, 2022). Beyond serving as a supplementary source of household income, dried bamboo shoot enterprises form an integral part of resource-based community economic activities.

The dried bamboo shoot MSMEs in Bokak Sebumbun Village, Sekadau Hilir District, Sekadau Regency, represent local community businesses that are still managed traditionally. Initial observations and interviews with local entrepreneurs revealed that production relies on basic natural sun-drying

✉ Corresponding Author: **Heni Ermewaningsih:** Tel. +62 8115794519 | E-mail: heni.erme88@gmail.com

and manual packaging techniques. Consequently, these dried bamboo shoot products are primarily distributed to neighborhood stalls and traditional markets with limited sales volumes. These operational constraints restrict marketing reach, resulting in relatively low income for business owners. Furthermore, the majority of these MSME operators are homemakers who run the business as a secondary enterprise to support their household economy.

The primary issue faced by the partners is product packaging, which remains very simple. Dried bamboo shoots are generally packaged in plain plastic without brand identification, product labels, ingredient information, or attractive visual designs. This condition makes the product less appealing and makes it difficult to compete with other food products that use modern packaging. Packaging design plays an important role in increasing product value, building business identity, and attracting consumer interest in MSME products (Kotler & Keller, 2016; Rundh, 2016; Silayoi & Speece, 2007). Besides protecting the product, packaging also influences consumer perceptions of product quality and image (Ampuero & Vila, 2006). Therefore, packaging development is a primary need for partners to improve product marketability.

In addition to packaging issues, limited promotional activity is a constraint in developing the dried bamboo shoot business in the village. Business owners still rely on direct word-of-mouth marketing and have not utilized digital media for product promotion. In fact, digital media can help MSMEs expand marketing reach at a relatively low cost and with easy public accessibility (Kannan & Li, 2017; Purwana et al., 2017; Taiminen & Karjaluoto, 2015). The use of various digital marketing channels allows small businesses to reach broader consumers and supports adaptive marketing strategies (Verhoef et al., 2015). Digital media is also effective in increasing consumer interaction and strengthening small business competitiveness (Ritz et al., 2019; Yasmin et al., 2015). However, low digital media adoption is caused by limited public knowledge and skills in using simple applications, such as WhatsApp Business for promotion, basic digital promotional content creation, and digital business management.

Low digital literacy among community members poses a challenge to developing technology-based MSMEs in rural areas. Some business owners are not accustomed to using smartphones effectively for promotion and business communication. Currently, digital device usage is limited to personal communication, leaving its potential to support economic activities underutilized. Social media and digital communication applications offer significant potential for MSME marketing by simplifying consumer communication and expanding market access (Kaplan & Haenlein, 2010; Michaelidou et al., 2011). According to the Ministry of Cooperatives and SMEs of the Republic of Indonesia (Kementerian Koperasi dan UKM Republik Indonesia, 2021), improving digital literacy is a critical factor in supporting MSME transformation to adapt to changing market dynamics and consumer behavior.

Based on these conditions, this community service initiative was conducted through training and mentoring for dried bamboo shoot MSME operators. The program focused on developing product packaging designs and utilizing simple digital media for promotion. Mentoring was carried out using a participatory approach, directly involving the community in creating product labels, establishing business identity, utilizing WhatsApp for communication and product promotion, and producing simple digital promotional media. This community empowerment approach ensures that business owners can apply these skills independently and sustainably (Suharto, 2017).

Through this community service initiative, dried bamboo shoot MSME operators in Bokak Sebumbun Village are expected to improve product presentation, expand promotional reach, and enhance basic digital media skills for business operations. Furthermore, this program aims to support the competitiveness of local products and contribute to strengthening the village economy through resource-based business development.

2. METHODS

Program Implementation Approach

This community service initiative was conducted using a community empowerment approach through training and mentoring for dried bamboo shoot MSME operators in Bokak Sebumbun Village, Sekadau Hilir District, Sekadau Regency. This approach aims to increase community capability in business development through product packaging design improvements and the utilization of simple digital media for promotion (Suharto, 2017).

The program focused on enhancing MSME capacity in developing product packaging design, establishing product identity, and utilizing WhatsApp Business and digital promotional media for marketing. Activities were carried out participatively by involving partners directly in each stage of the program so that the provided skills could be applied independently and sustainably.

The implementation of these activities was based on partner conditions, specifically their limited capacity in product promotion, packaging design, and digital media adoption for business marketing. Digital marketing adoption is considered effective in helping MSMEs expand marketing reach and increase local product competitiveness (Purwana et al., 2017). Additionally, packaging design development is necessary to enhance product added value and market appeal (Klimchuk & Krasovec, 2012).

Location and Target of Activities

This community service activity was conducted in Bokak Sebumbun Village, Sekadau Hilir District, Sekadau Regency, on March 31, 2026. The target participants comprised 12 dried bamboo shoot MSME operators involved in the production and marketing of dried bamboo shoots in Bokak Sebumbun Village.

The program focused on enhancing community capability in product packaging and utilizing simple digital media to support business promotion. Activities were carried out directly through training and mentoring to enable participants to understand and apply the acquired skills in their daily business operations.

Program Implementation Stage

Preparation

The preparation stage began with coordination and discussion between the community service team and the Head of Bokak Sebumbun Village along with village officials to secure permission and agree upon the schedule, location, and operational mechanism of the activities. Through this coordination, it was agreed that the community service activities would take place at the home of one of the partner dried bamboo shoot MSME operators, allowing participants to attend the training and mentoring directly within their actual business environment.

Subsequently, the team developed training materials and prepared necessary resources for the program, including sample packaging designs, product labels, packaging materials, and supporting media for digital promotion. In addition, preparations were made for using WhatsApp Business and simple design applications operable on the participants' smartphones, ensuring that all training and mentoring processes matched the devices owned by each participant.

This preparation stage aimed to ensure that the entire sequence of activities was executed in a structured and effective manner aligned with partner needs, thereby enabling optimal application of the materials to their dried bamboo shoot business operations.

Identify needs

The needs identification stage was conducted through direct observation and discussions with dried bamboo shoot MSME operators to assess current business conditions. The findings revealed that partners face constraints in product packaging design, business promotion, and the use of digital media for marketing. Additionally, community capability in creating product identities and utilizing digital media for business support remains limited. These identified needs served as the foundation for developing training and mentoring materials tailored to partner conditions and requirements.

These conditions highlight the necessity of training and mentoring in product packaging and simple digital marketing to enhance MSME competitiveness (Purwana et al., 2017; Saputra et al., 2023).

Training

Training was conducted as an effort to enhance participants' knowledge and skills in developing their dried bamboo shoot business through packaging design development and the utilization of digital promotion. The activity was held directly at the partner location, using a presentation method followed by simple hands-on practice using the participants' own smartphones.

The training materials covered the introduction of product packaging design, product label and identity development, the utilization of WhatsApp Business for promotional and consumer communication purposes, and the creation of simple digital promotional media. During the session, participants received guidance regarding the importance of appealing packaging, clear product identity, and digital promotional strategies suited to micro-enterprise characteristics. A hands-on practical approach was selected to ensure participants could comprehend each material while applying it directly using the devices they use in their daily business operations.

Developing packaging design serves as a strategy to increase product appeal while strengthening business identity, making products more recognizable to consumers. Informative and attractive packaging can enhance product added value and support marketing activities (Klimchuk & Krasovec, 2012).

Mentoring

The mentoring stage was conducted following the training session to assist participants in applying the acquired knowledge to their dried bamboo shoot business operations. Mentoring was carried out directly through hands-on practice using participants' smartphones, allowing each step to be tailored to their specific business conditions and needs.

The mentoring activities focused on refining product packaging design, developing product labels and brand identity, and utilizing WhatsApp Business as a digital promotional tool. Participants were guided in creating product catalogs, uploading photos of products featuring the new packaging, posting updates via WhatsApp Status, and leveraging WhatsApp Business for consumer communication. This assistance was delivered step-by-step to ensure that participants not only understood the material but could also implement it independently in their product marketing activities.

Through this mentoring process, participants gained practical experience in utilizing digital technology as an accessible promotional tool suited to micro-enterprise characteristics. The direct mentoring approach enabled participants to receive real-time feedback during practical sessions, allowing immediate discussion and resolution of any encountered challenges. This approach aligns with community empowerment principles, which emphasize the importance of continuous guidance in building community capacity to adopt digital technology for business development.

Program Evaluation

Program evaluation was conducted to measure the success of the training and mentoring activities in enhancing participants' understanding and skills. Observations were carried out to monitor the implementation of product packaging development and the use of WhatsApp Business in promotional activities, while pre-tests and post-tests were utilized to determine the increase in participant comprehension following the full sequence of activities. Program evaluation was executed using both quantitative and qualitative approaches. Quantitative evaluation was performed through pre-tests and post-tests to measure comprehension gains, whereas qualitative evaluation was conducted through observations of how participants applied the training and mentoring outcomes in their business operations.

Evaluation results indicated that participants successfully applied the training outcomes by using labeled product packaging, compiling product catalogs, publishing products through digital media, and communicating with consumers via WhatsApp Business. Furthermore, the evaluation results demonstrated an improvement in participant capacity to utilize digital media for promotional purposes. This growth was reinforced by comparing participant conditions before and after program implementation, as well as pre-test and post-test scores, which showed enhanced understanding and skills among participants after completing the training and mentoring activities.

3. RESULTS AND DISCUSSION

Identifying Community Needs

Observations of the 12 MSME operators revealed that dried bamboo shoot products were still packaged in plain plastic bags lacking labels and business identification. The products lacked both product information and visual designs that could distinguish them from competing products. From a marketing perspective, the majority of business operators still relied on direct sales in traditional markets. Only 2 out of the 12 participants had ever utilized digital media on a limited basis. In addition, the digital literacy of the business operators remained low, particularly regarding the use of business-support applications for label design, digital promotion, and business record-keeping.

Implementation of Training and Mentoring

Prior to program execution, the community service team conducted coordination meetings and discussions with the Head of Bokak Sebumbun Village and village officials as an initial implementation phase. This activity aimed to secure official permission, communicate program objectives, and determine the location, schedule, and target participants to ensure the community service aligned with local community needs.

Based on the coordination outcomes, it was agreed that the activities would be held at the residence of a community member that serves as an active production venue for dried bamboo shoot MSMEs. This location was selected considering that the partner group consists of homemakers who actively produce dried bamboo shoots as a secondary enterprise. The dried bamboo shoot products generated by this group are currently distributed to local stalls and traditional markets across Sekadau Regency. Consequently, this venue enables participants to attend the training while engaging in direct hands-on practice for product design development and digital promotion using their actual products.



Figure 1. Coordination and discussion with the Head of Bokak Sebumbun Village and village officials as a preparatory stage for community service activities

Training implementation

Following the completion of the coordination stage with the village government, activities proceeded with training for the dried bamboo shoot MSME participants, held at the residence of a local resident. The training was delivered face-to-face through material presentations and interactive discussions to ensure participants could easily comprehend the material within the context of their actual business operations.

The training content focused on the importance of developing packaging design and product labels as enterprise identity, alongside leveraging digital media for promotional purposes. Participants gained insight into the benefits of using WhatsApp Business to introduce products to consumers, build digital catalogs, and utilize social media as an accessible and cost-effective promotional channel.

Throughout the session, participants were given the opportunity to discuss and express various constraints encountered in marketing their dried bamboo shoot products. Through this question-and-answer session, the team provided guidance on digital marketing strategies suited to the participants' capabilities and conditions, enabling direct application of the material to their business operations.



Figure 2. Material presentation and discussion regarding product packaging design and digital promotion for dried bamboo shoot MSME participants in Bokak Sebumbun Village

Product desain mentoring

After participants gained an understanding of the importance of product identity through the training session, activities continued with mentoring in product design creation. Direct mentoring was conducted by involving all participants in the process of formulating label designs to serve as the brand identity for the dried bamboo shoots. At this stage, participants received explanations regarding essential

components to include on the label, such as product name, business identity, product information, and appealing visual presentation, ensuring the product gains added value and becomes more recognizable to consumers.

Subsequently, the team assisted participants in selecting label designs and adjusting them to fit the dimensions of the intended packaging. Participants were also given the opportunity to provide input on the drafted designs so that the resulting labels aligned with product characteristics and remained easily understandable to potential consumers.

Once the label design was finalized, the activity proceeded to packaging practice using new packaging fitted with the product label. During this phase, participants engaged in direct hands-on practice packaging dried bamboo shoots into the new containers, gaining practical experience in producing items that are more attractive, neatly packaged, and carry a distinct business identity. Throughout the mentoring session, participants also received guidance on the importance of maintaining product hygiene, packaging neatness, and consistent label usage to enhance consumer trust in the marketed products.





Figure 3. Mentoring in designing product labels for dried bamboo shoots with MSME participants
Figure 4. Mentoring in practical packaging of dried bamboo shoots using newly designed containers and product labels

Product packaging development results

One of the outputs of this community service activity was the development of product packaging for dried bamboo shoots, which previously utilized plain plastic bags without product identity. This condition resulted in the product lacking visual appeal and failing to convey business identity or product information to consumers.

Through mentoring activities, the product packaging was enhanced using more attractive containers fitted with product labels containing the product name, business identity, and basic product information. This development aimed to increase product added value while establishing enterprise identity, making the product more recognizable to consumers.

Based on Figure 5, a clear transformation in product packaging appearance is evident before and after the community service activity. Prior to development, dried bamboo shoot products were packaged solely in plain transparent plastic bags without labels, thus lacking distinct identity and aesthetic value. Following the development process, the products were packaged using containers fitted with labels featuring a more attractive and informative design. This change not only enhances the product's visual appeal but also provides a clearer identity, thereby increasing its commercial value and overall readiness for digital promotion.



Figure 5. Comparison of product packaging design before and after development

The enhanced product packaging was subsequently utilized in digital marketing activities via WhatsApp Business and social media. With more appealing packaging and a clear product identity, product information can be presented more professionally to prospective consumers. Consequently, packaging development not only improves the visual quality of the product but also supports the effectiveness of digital promotional efforts undertaken by the partner MSMEs.

Digital promotion mentoring

The product packaging and labels developed in the previous stage were subsequently utilized as supporting media in digital promotional activities. Therefore, the program continued with mentoring on the use of WhatsApp Business as a marketing platform for dried bamboo shoot products. Mentoring was conducted directly using the participants' own smartphones, ensuring that each step could be practiced according to the actual conditions and devices used in their daily business operations.

In the initial stage, the team assisted participants in setting up WhatsApp Business accounts and completing their business profiles with relevant details, including enterprise name, product description, address, and contact numbers. Establishing these business profiles aimed to help MSME operators project a more professional and recognizable enterprise identity, making it easier for consumers to obtain information regarding the marketed products.

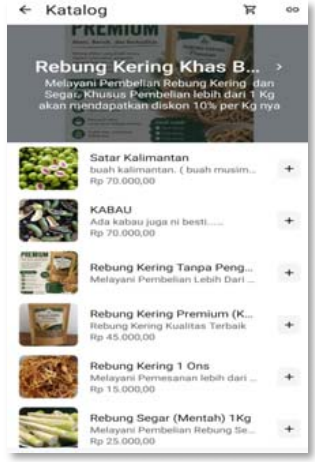


Figure 6. Dried bamboo shoot product catalog on WhatsApp Business

Furthermore, participants received guidance in compiling product catalogs within WhatsApp Business by adding product photos, product names, brief descriptions, and pricing information. The digital catalog is designed to facilitate MSME operators in presenting their products to prospective consumers, ensuring product information is conveyed in a more comprehensive, structured, and easily accessible manner.

Based on Figure 6, participants were guided in compiling product catalogs within the WhatsApp Business application by adding product photos, product names, brief descriptions, and pricing information. The digital catalog was designed as a product information medium, enabling prospective consumers to obtain details regarding dried bamboo shoot products in a more comprehensive, practical, and professional manner.

Once the product catalog was completed, participants were assisted in leveraging it as promotional material through the WhatsApp Status feature and social media platforms, such as Facebook, thereby expanding the product's marketing reach. As a final stage, participants received guidance in utilizing WhatsApp Business as a medium



Figure 7. Digital media publication of dried bamboo shoot products

Based on Figure 7, participants were mentored in publishing dried bamboo shoot products through digital media using the WhatsApp Status feature and social media platforms such as Facebook. At this stage, participants practiced uploading product photos featuring the new packaging and labels, adding brief product details, and including contact information for prospective consumers. This activity aimed to enhance participants' ability to utilize digital media as a simple, affordable, and effective promotional tool, thereby broadening the product's marketing reach.

Based on Figure 8, participants utilized WhatsApp Business as a communication platform with consumers after receiving guidance on application usage. Through simulations and direct practice, participants learned to provide product information, address consumer inquiries, and process product orders via WhatsApp Business. This activity aimed to enhance participants' customer service capabilities while fostering more effective communication to support product marketing efforts.

Through this series of digital promotional activities, participants gained a foundational understanding of digital marketing concepts and successfully applied them to their daily business operations. The adoption of WhatsApp Business through product catalog setup, product promotion via WhatsApp Status, and customer communication demonstrates that partner MSMEs have begun integrating digital media for promotional and service purposes. This implementation serves as an initial step toward expanding market reach and improving partner capabilities in leveraging digital technology for business development in dried bamboo shoots.

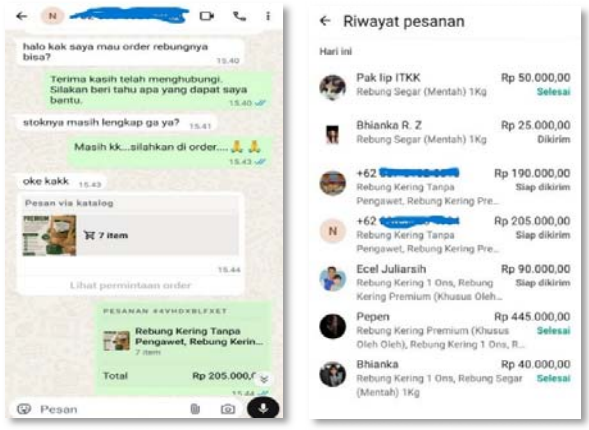


Figure 8. Consumer interaction with MSME operators via WhatsApp Business

Evaluation of Training and Mentoring Outcomes

To determine the effectiveness of the executed community service activities, an evaluation was conducted to assess participants' knowledge and skills prior to and following the training and mentoring sessions. The evaluation utilized pre-test and post-test instruments administered to all participants. The evaluation framework was developed based on indicators aligned with the training content, including comprehension of product packaging design, brand label creation, digital promotion, WhatsApp Business usage, and digital promotional media development. The results were analyzed to measure gains in participants' understanding and practical skills after completing the full program series.

Beyond the pre-test and post-test assessments, project success was also demonstrated by participants' active adoption of WhatsApp Business following training and mentoring. A comparison of the number of participants utilizing WhatsApp Business as a promotional platform before and after the intervention is presented in Table 1.

Table 1. Comparison of participants' skill before and after the program

Skill Indicators	Before Program	After Program
Using WhatsApp Business	2 participants	10 participants
Compiling a product catalog	0 participants	10 participants
Creating digital promotional media	1 participant	8 participants
Serving consumer via WhatsApp Business	0 participants	8 participants

Based on Table 1, there was an increase in the implementation of training outcomes following the execution of the community service activities. The number of participants utilizing WhatsApp Business as a promotional platform increased from 2 to 10 participants. Furthermore, participants began to demonstrate the ability to compile product catalogs, create digital promotional media, draft promotional content, and manage consumer communication via WhatsApp Business. These results indicate that the majority of participants successfully applied the skills acquired during the training and mentoring sessions to their dried bamboo shoot marketing activities.

To measure gains in participants' understanding and practical skills after completing the training and mentoring sessions, an evaluation was conducted using pre-test and post-test instruments across several learning indicators. The evaluation results are presented in Table 2.

Table 2. Pre-test and post-test evaluation results of participants

Aspek yang Dinilai	Pre-test	Post-test
Product packaging design comprehension	2	4
Product label creation ability	2	4
Digital promotion comprehension	2	5
WhatsApp Business Usage	1	4
Digital promotional media creation	2	4
Average	**1.8**	**4.2**

Based on Table 2, all assessed aspects showed an increase after participants completed the training and mentoring sessions. The average score of the participants improved from 1.8 on the pre-test to 4.2 on the post-test. This improvement indicates that the community service activities successfully enhanced participants' comprehension regarding product packaging design, label creation, digital promotion, WhatsApp Business utilization, and digital promotional media creation.

Discussion

The community service program conducted in Bokak Sebumbun Village demonstrates that a practice-based training and mentoring approach effectively enhances the understanding and skills of dried bamboo shoot MSME operators in product development and digital media utilization. Conducting direct sessions using the participants' own smartphones provided the partners with the opportunity to practice each topic according to their actual business conditions. Evaluation results from the pre-test and post-test showed an increase in participants' comprehension across all measured indicators, indicating that training and mentoring not only increased knowledge but also fostered participants' ability to apply these skills in daily business operations. This finding aligns with the concept of community empowerment, which emphasizes active participant engagement in the learning process to build sustainable community capacity (Suharto, 2017).

Product packaging development represented one of the outcomes that had a tangible impact on improving the quality of dried bamboo shoot products. Prior to the program, products were marketed using plain plastic packaging without brand identification, making them less attractive and difficult to distinguish from similar products. Following the mentoring sessions, participants began utilizing packaging equipped with labels containing product names and enterprise identities. This shift not only enhanced the product's visual appeal but also strengthened product identity, making it more recognizable to consumers. Informative and attractive packaging plays a crucial role in building product image and increasing consumer trust in marketed products (Kotler & Keller, 2016).

In addition to packaging development, the utilization of WhatsApp Business as a digital promotional medium transformed how MSME operators present their products to consumers. Through mentoring activities, participants were able to compile product catalogs, publish products via WhatsApp Status, and utilize WhatsApp Business as a communication channel with consumers. This result is supported by the increase in the number of participants using WhatsApp Business as a promotional tool, rising from 2 participants prior to the program to 10 participants after implementation. These findings indicate that adopting simple and accessible digital media can help MSME operators expand promotional reach while improving communication effectiveness with consumers. This condition demonstrates that MSME digitalization does not always require complex technology, but can begin through the use of applications already familiar to the community.

Nevertheless, program execution faced several constraints, particularly varying levels of digital literacy among participants. Some participants required more intensive guidance in operating features within WhatsApp Business, especially regarding product catalog setup and business information management. Furthermore, limited internet network quality in certain locations affected the smooth execution of digital promotion practice sessions. These conditions indicate that the digital transformation process in rural MSMEs requires ongoing mentoring to ensure participants' capabilities continue to develop and can be applied independently.

Overall, the results of the activities indicate that integrating packaging design development with digital promotion exerts a positive impact on the empowerment of dried bamboo shoot MSMEs in Bokak Sebumbun Village. The use of more informative packaging, the adoption of WhatsApp Business as a promotional medium, and the increase in participants' understanding and skills based on evaluation results demonstrate that the program not only improved product quality, but also encouraged the application of digital technology in marketing activities. Therefore, this practice-based training and mentoring model has the potential to serve as an applicable approach for other MSME empowerment initiatives, particularly in rural areas with similar characteristics.

4. CONCLUSION AND RECOMMENDATIONS

The Community Service Program (PKM) conducted in Bokak Sebumbun Village, Sekadau Hilir District, Sekadau Regency demonstrates that practice-based training and mentoring effectively enhance the capacity of dried bamboo shoot MSME operators in product packaging design development and digital promotion utilization. This program resulted in improvements to packaging appearance through the implementation of more informative product labels and encouraged the adoption of WhatsApp Business for product promotion, digital catalog setup, product publishing, and consumer communication. Evaluation results also indicate an increase in participants' knowledge and skills in leveraging digital technology to support product marketing efforts. Thus, this PKM initiative contributes to strengthening the competitiveness of dried bamboo shoot products while fostering the use of digital technology as a means of rural MSME business development.

Future service activities are recommended to provide ongoing mentoring to ensure the consistent application of WhatsApp Business and digital media by MSME operators. Additionally, expanding promotion through social media platforms and marketplaces could serve as a strategic next step to broaden the marketing reach of dried bamboo shoot products. Strengthening product identity through refinements in packaging design, business legality, and product certification is also necessary to enhance product competitiveness. Long-term evaluations regarding the sustainability of digital promotion adoption are further advised to continuously monitor the program's impact on MSME business development.

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