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# Optimizing the Productivity of the Tandusan Oil Home Industry in Jembrana Through the Implementation of a Digital Platform

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## Abstract

The Tandusan oil household industry in Baluk-Jembrana Village is a form of local business that produces organic coconut oil. The problem faced by this industrial group is a lack of understanding of product quality and a lack of knowledge in marketing digital-based products. The proposed solution includes education on improving product quality based on predetermined chemical parameters and intensive training in digital platform-based product marketing. The methods used in this activity are Participation Action Research (PAR). This activity's success level is measured through the pretest and posttest. This activity was carried out on September 2, 2023. The number of partner workers who participated in this training activity was 10. With this training, partners' knowledge of product quality increased by eighty-two percent, while partners' knowledge increased by eighty-three percent regarding digital platform-based product marketing.

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## INTRODUCTION

One of the home industries in Baluk Village, Negara District, Jembrana Regency, is the oil extraction business. This small-scale industry is engaged in the production of organic coconut oil or virgin coconut oil. Because abundant coconut resources support it, this business has great potential for development. This household industry produces virgin coconut oil from local coconuts. The local wisdom product in the form of oil is made traditionally and passed down through generations. Palm oil does not have the same aroma as coconut oil. It is the hallmark of the oil product. Refined oil also has many benefits, making it suitable for cooking (for food products) and health and beauty purposes. The source of information is designated by writing in brackets: the author's last name and year of publication. Presented systematics so that an overview of the basis for making this paper and the expected results is obtained.

The household oil industry in Baluk Village was initiated by a resident named I Made Suarnayasa. This household industry group is under the auspices of the Jalak Bali community, which is also involved in empowering people with HIV (ODHIV). This household industry was established to train people who are HIV-positive and do not have stable employment to acquire knowledge. In addition, this effort can boost ODHIV's economy. The number of workers empowered in this home industry group is eight.

The production of barren oil in Baluk Village has been ongoing for about five years. This oil production still uses conventional methods, which involve preparing raw materials obtained from local coconut plantations, peeling the coconut fruit, using a grater machine to grate the coconut meat, and extracting, pressing, and separating the oil (Fig. 1). The oil is heated using a stove and firewood for two hours (until separation occurs between the oil and the residue), then dried until obtained. Mitra faced many challenges during this business process, including product production and marketing. The production process is facing challenges because employees still use a trial-and-error system to ensure the quality of crude oil products. This challenges this industry group due to the workers' lack of knowledge about good oil quality based on chemical parameters such as water content, free fatty acid levels, and peroxide value. The level of free fatty acids is one of the indicators in coconut oil products that, when

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exceeding standards, can lead to rancidity in oil stored over a certain period, especially without preservatives, which impacts the quality and grade of the oil. Testing the quality of the oil is necessary to assess the level of oxidation (rancidity), which is closely related to the product's shelf life. The methods for testing oil quality that will be applied include testing for water content, free fatty acid (FFA) levels, and oxidation number (Febliza *et al*., 2020). Previous research has also indicated that water content and fatty acids can serve as indicators for determining the characteristics of oil (Rindawati, 2020; Taufik & Hermawan, 2018).

**Fig. 1.** The process of producing crude oil

Amid such rapid technological development, this household industry group faces challenges in marketing, as it is still far from the touch of technology. This is evident from how the product is marketed, which is still manual, from person to person, so its market share is still limited to local consumers. The utilization of digital platforms has not been maximized, resulting in a low demand for crude oil. It is also what causes partners to implement a made-to-order system (produced only when there is an order), which impacts the number of product sales and the income that will be generated. Another factor that influences the low purchasing interest of consumers in products from partners is the lack of attractive packaging and product appearance.

The digital economy is a trend as a form of economy generated from the digital transformation of traditional economic activities, supported by the internet, electronic means, and data (Purnomo & Zumaeroh, 2021). The introduction of digital platforms has great potential to be introduced to beginner household industries in rural areas that are still far from the touch of science and technology (Soraya & Nugraheni, 2021). Seeing the potential that partners possess, it is very appropriate to implement the Digital Economy so that the products produced by partners can compete in the market, thereby increasing their productivity and achieving the partners' welfare. The development of businesses based on the digital economy can utilize digital platforms such as websites, social media, and e-commerce (Turbudi & Hamdani, 2022; Riandika & Hamdani, 2020; Setiyoko *et al*., 2016).

Based on the above issues, the objective of this activity is to offer a solution in the form of increasing the productivity of crude palm oil through outreach on the quality of good oil products based on chemical parameters and training in product marketing using digital platforms to enhance consumer appeal towards partner products and expand the market share of partner products.

## MATERIALS AND METHODS

### Materials

The materials needed are a questionnaire for the training participants, an LCD, a projector, and writing supplies.

### Methods

This community service activity implements the Participation Action Research (PAR) method by involving all partner members in active participation through outreach and training activities related to the product. The stages of implementation carried out to provide solutions to the partner's problems in community service activities with a beginner community empowerment scheme (Fig. 2)

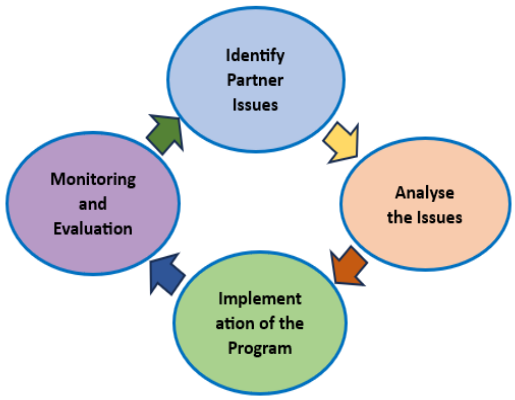


**Fig. 2.** Stages of activity implementation

### Identify partner issues

This activity is the initial stage in implementing community empowerment for beginners, which involves gathering information from partners regarding the challenges faced. This activity uses questionnaires and interviews with partners. Identify the partner's problems, including in the production and marketing of palm oil products.

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### Problem analysis

The next stage is the process of analyzing the problems faced by partners based on the identification carried out in the previous stage. The results of the analysis are then discussed in a focus group discussion (FGD) involving workers in the household oil industry.

### Implementation of the PMP program

At this stage, the team is implementing programs related to the three areas of issues faced by the partners, which are as follows:

1) The implementation of knowledge transfer activities regarding good oil quality based on chemical parameters to workers in the household oil industry, as well as facilitating the testing of oil quality through parameters such as water content, free fatty acid content (%FFA), and peroxide value at the laboratory of Bali International University.
2) The implementation of knowledge and technology transfer regarding packaging and marketing methods based on digital platforms (social media and e-commerce), as well as facilitating partners in the creation of designs, logos, and product branding.

### Assistance, monitoring, and evaluation

At this stage, assistance, monitoring, and evaluation are carried out for the program being implemented to ensure the success of the knowledge and technology transfer process. This activity is very important to ensure that the implemented programs align with the established

**Table 1.** The role of partners

| Stages | Activity |
|---|---|
| Identify the issues | Partners are involved in providing initial identification data to the PMP program implementers. |
| In the implementation of activities | Partners are involved in the program implementers' knowledge and technology transfer activities. |
| Program assistance | Partners receive support from activity implementers aimed at ensuring that knowledge and technology can be established to solve the problems faced by the partners. |
| Monitoring | Partners are involved in monitoring activities by the implementation team with the aim of achieving the expected targets. |
| Evaluation | Partners are fully involved to assess the success level of the programs that have been implemented, and the indicators of program success are as follows:<br>1) An indicator of oil quality improvement through chemical parameter testing in the laboratory.<br>2) The indicator of success for the transfer of knowledge and technology in packaging and digital marketing is the increased ability of partners to market crude palm oil based on digital platforms through social media and e-commerce. |

**Table 2**. The problem, solutions, and output

| Problem | Solution | Output |
|---|---|---|
| The workers' limited knowledge about good oil quality based on chemical parameters. | Providing education to workers about "Good Oil Quality Based on Chemical Parameters." | Workers' knowledge about good oil quality based on chemical parameters increased by over 80%. |
| The partner does not yet know the quality of the oil product. | Facilitating laboratory testing. | The quality of the oil meets the Indonesian National Standard (SNI). |
| Limited knowledge in marketing products based on digital platforms. | Training workers on the procedures for marketing products based on digital platforms (social media and e-commerce). | Worker's knowledge of marketing products based on digital platforms has increased by over 80%. |
| The partner does not yet have an online product marketing platform. | Facilitating the creation of digital platforms in the form of social media and e-commerce. | Digital platforms such as Instagram, Facebook Marketplace, and Shopee |
| The product marketing appearance is less appealing. | Facilitating the creation of Canva designs for the oil product to make its marketing more appealing. | The product marketing appearance increased by over 80%. |

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targets. The partner in this activity is the household oil industry located in Baluk Village, Jembrana Regency. Partners will receive knowledge transfer about good oil quality and product marketing. In addition, partners will also receive technology transfer in the form of product marketing based on digital platforms. The role of partners in each stage can be seen in Table 1. In summary, the problems, the solutions offered by the service team, and the expected outcomes of this activity can be seen in Table 2.

## RESULTS AND DISCUSSION

This community service activity was conducted in person on Saturday, September 2, 2023, in Banjar Pangkung Buluh, Kaliakah Village, Negara District, Jembrana Regency. This event was attended by 10 training participants from the household oil industry partners. Based on the profiling results, the participants are predominantly female, accounting for 80%, while males make up only 20%. All participants are within the age range of 35 to 50 years. Regarding the participants' educational background, 80% have a high school education, and 20% hold a diploma or bachelor's degree.

**Fig. 3.** Community service activities

This activity consists of two sessions. The first session is a training activity aimed at improving the quality of oil products (Fig. 3). This activity aims to teach participants about the importance of oil quality from a chemical parameter perspective so that the oil products are not easily oxidized by air and contaminants. This training is provided by the speaker Ni Putu Widayanti, S.Si., M.Si., who has a background in laboratory testing. The material provided includes knowledge about the chemical testing parameters of oil products, namely water content, peroxide value, and free fatty acids (Fig. 4). Before the training, participants are given a pretest to assess their knowledge. After the training, participants are also given a posttest to measure the knowledge they have absorbed, followed by an evaluation to determine the increase in participants' knowledge. The results of the analysis of the participant's knowledge level can be seen in Fig. 5.

**Fig. 4.** Presentation of material on improving product quality through laboratory testing

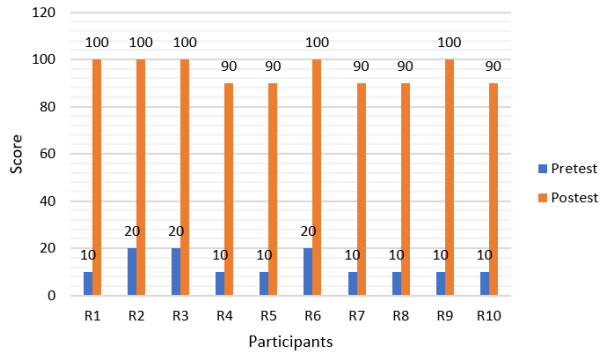


**Fig. 5.** Results of the analysis of knowledge improvement of participants in the oil quality enhancement training

Based on the evaluation results (pretest and posttest) of the community service activities with the partners, it can be observed that the partners' knowledge regarding the quality of the palm oil products has improved after training. An average knowledge increase of 82%. This is supported by research (Achmad *et al.*, 2022) stating that providing training to partners can enhance knowledge and the quality of clove-based products in Kabung Island, Bengkayang Regency, West Kalimantan. The training activities can improve product quality by over 80%.

The service team also facilitated partners with product testing in the laboratory. From the examination results, the average moisture content of the Tandusan oil was 0.14%, the average free fatty acid content was 0.46%, and the average peroxide value was 0.52 mg eq/kg (Widayanti *et al.*, 2023). The

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partner's Tandusan oil product has been tested in the Chemistry Laboratory of Bali International University and has shown good quality, meeting SNI 2902:2011 and SNI 3741:2013 standards, making it safe for use as a food ingredient.

The second session consists of training activities focused on digital platform-based marketing (Fig. 6). This activity aims to provide partners with knowledge regarding product marketing techniques by utilizing the latest technology. This training is provided by the speakers Ir. Adie Wahyudi Oktavia Gama, S.T., M.T., I.P.M., ASEAN Eng. and Ni Made Widnyani, S.E., M.M., who have backgrounds in Information Technology and Digital Business. The material provided includes the utilization of digital platforms such as e-commerce, specifically Shopee, and social media like Instagram and Facebook Marketplace for marketing palm oil products (Fig. 7). The community service team, assisted by I Gede Wahyu Surya Darma, S.Kom., M.Kom., helps partners create e-commerce profiles and social media for MSMEs from the partners. The service team assists partners in designing products (Fig. 8, and then uploading them to digital platforms for online promotion by the partners. In this activity, a pretest and posttest were also conducted with the partners to determine the success level of the training activities (Periamsyah *et al.*, 2018; Astuti & Ratnawati, 2020; Margaretha, 2023).

**Fig. 6.** Presentation about marketing products based on digital platforms

The results of the pretest and posttest for the digital platform-based product marketing training can be seen in Fig. 9. The partners' knowledge has increased after receiving training, with an average improvement of 83%. This aligns with the research by Ulum *et al.* (2023), which states that providing training is very effective in enhancing the quality of MSME products through digital marketing and product legality in Cerme Village. This is also consistent with the study by Trisujaka *et al.* (2023), which indicates that mentoring MSMEs can provide solutions for the Elong Tuna KWT MSME in Lantan Village, North Batukliang District, Central Lombok, in improving the quality of coffee products through packaging design training. The training activity on marketing strategies, measured by clear standards, can demonstrate an achievement level of 80% (Octavia *et al.*, 2022).

**Fig. 7.** The Practice of utilizing e-commerce and social media for product marketing


**Fig. 8.** Partner product design through Canva

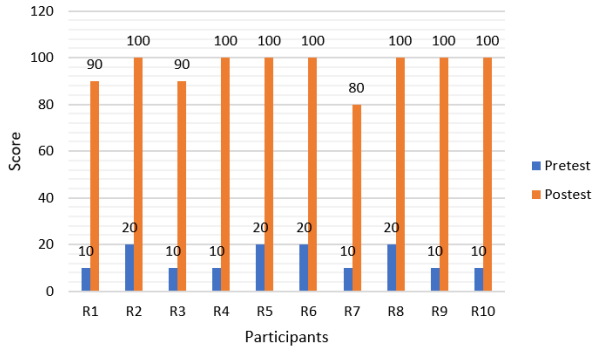


**Fig. 9.** Analysis of partners' knowledge improvement in marketing products based on digital platforms

Improving the packaging of partner products can enhance buyer attraction and create appealing templates for partner products on digital platforms. Marketing through digital platforms has increased the sales of the cooking oil product, thereby boosting the partner's income by 20%. The marketing of partner products is optimized through the Shopee e-commerce platform. As one of the global marketplaces, Shopee has the advantage of

having a good reputation and being a marketplace that is not bound by space and time (Gudiato *et al*., 2022; Widnyani & Astitiani, 2021; Haryanti & Subriadi, 2021).

The limitation of service results in this activity is that laboratory testing on partner products is only conducted during community service activities, so partners are encouraged to collaborate with Bali International University to perform periodic product testing. Another limitation is that the improvement of product packaging is only limited to the logo and written content because the partner has their own choices and philosophy. Further activities that can be undertaken include updating the product design template through Canva on the digital platform periodically to make it more appealing.

## CONCLUSION

The implementation of community service can enhance the knowledge and quality of the partners' products. With this training, partners' knowledge of product quality based on chemical parameters increased by eighty-two percent, while their knowledge regarding marketing products through digital platforms such as e-commerce (Shopee) and social media improved by eighty-three percent (Instagram dan Marketplace Facebook). The limitation of the results of this activity is an increase in partner knowledge and not partner skills. The recommendation for the next activity is to conduct training to improve partners' skills in utilizing digital platforms.

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