



Community Empowerment through the Production of Cost-Effective Liquid Detergent with Competitive Quality in Ogan Ilir Regency

**Anna Yulianita*, Siti Rohima, Puspa Utami, Wiga Ayu Desmanita,
Lisa Hermawati, Nanda Muthiah Rhani, Meidiana Azzahrah, Haqqie Muflicha
Bissalamy, Doyoba Sie Pratama, Kamil Habibi**

Department of Economic Development, Faculty of Economics,
Universitas Sriwijaya, Indonesia.

*Corresponding Author. Email: annayulia@unsri.ac.id

Abstract: This community service program aims to enhance residents' skills and economic independence through training in the production of cost-effective and environmentally friendly liquid detergent. The program involved 25 participants, comprising housewives and micro-entrepreneurs in Ogan Ilir Regency. A participatory approach was employed, consisting of socialization, technical production training, and continuous mentoring stages. Evaluation was conducted using an assessment sheet divided into two components: evaluation of program implementation and evaluation of its impact on participants' business development. A Likert-scale-based assessment was used to measure participants' levels of understanding, satisfaction, and motivation, while the data were analyzed descriptively using Microsoft Excel. The results indicate that participants acquired a solid understanding of liquid detergent production, including ingredient formulation, mixing techniques, and product packaging. In addition to technical skill development, the training enhanced participants' entrepreneurial awareness, production efficiency, and understanding of the economic potential of household-based products. The evaluation findings demonstrate a significant increase in community knowledge and motivation to develop independent businesses, although further mentoring in technical refinement and marketing strategies remains necessary. This program aligns with the objectives of the Sustainable Development Goals (SDGs), particularly those related to poverty alleviation, decent work, and sustainable consumption and production. With continued support from higher education institutions and local governments, this initiative is expected to serve as a model for sustainable village economic empowerment and contribute to improving community welfare.

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Introduction

National economic development relies not only on the large industrial sector but also on the economic strength of local communities. Sustainable development is inseparable from the role of communities in developing regional potential as a foundation for strengthening the national economy. Universities, through the implementation of the Tri Dharma Perguruan Tinggi (Three Pillars of Higher Education), have a moral and academic responsibility to help communities manage this potential productively and innovatively (Wagner et al., 2021). One



concrete contribution of universities is realized through community service activities focused on strengthening the local economy and improving entrepreneurial skills.

The post-pandemic era emphasizes the importance of economic resilience based on community independence. Research by Belitski and Guenther (2022) shows that villages capable of developing small businesses based on local potential are more resilient to economic shocks than villages dependent on the formal sector. The Indonesian government has also prioritized strengthening Micro, Small, and Medium Enterprises (MSMEs) as a key strategy to support inclusive economic growth (Irawan et al., 2023). Within the framework of the Sustainable Development Goals (SDGs), MSMEs contribute significantly to poverty alleviation, decent job creation, and the development of self-reliant local communities (Endris & Kassegn, 2022).

Previous literature reviews have shown that entrepreneurial activities play a crucial role in socio-economic empowerment of communities by enhancing creativity, innovation, and adaptability to change (Almodóvar-González et al., 2020; Ordeñana et al., 2024). Entrepreneurship training focuses not only on technical skills but also on strengthening soft skills such as teamwork, communication, and discipline (Pardo-garcia & Reilly, 2020). Furthermore, entrepreneurial activities based on local potential have proven effective in increasing village economic independence and strengthening MSMEs through the application of appropriate technology (Herissuparman et al., 2024). However, many rural communities still face limited access to technology, production knowledge, and competitive marketing strategies.

A similar situation was found in Permata Baru Village, North Indralaya District, Ogan Ilir Regency, South Sumatra Province. Most residents in this village rely on agriculture and small-scale home businesses for their livelihoods, but still face limited production skills and market access (Lamazi, 2020). Based on initial field observations, daily household needs, such as detergent, are entirely dependent on products purchased from nearby shops. This dependence results in relatively fixed routine household expenses, while residents lack the knowledge and skills to produce these necessities independently. A lack of understanding of simple production techniques based on household chemicals is one factor hampering efforts to improve economic efficiency at the household level.

Furthermore, the lack of training focused on liquid detergent products is a particular problem for the residents of Permata Baru Village. Although liquid detergent is a routinely used product with stable local demand, the community has not been able to capitalize on this potential as a business opportunity. Limited technical knowledge, a lack of simple production facilities, and a lack of understanding of product packaging and marketing have prevented liquid detergent from developing as a productive household business. As a result, opportunities to reduce household expenses and create additional income sources have not been optimally utilized. This situation indicates a gap between community economic needs and potential and existing skills, necessitating intervention through targeted and applicable training programs (Dewanti et al., 2021; Kiswando et al., 2020; Widyasanti et al., 2018).

Based on these conditions, this community service activity aims to improve the skills of the Permata Baru Village community in producing economical and high-quality liquid detergent, strengthen product innovation and digital-based marketing capabilities, and open new economic opportunities through the development of micro-enterprises based on local potential. Through synergy between universities, government, and the community, this activity is expected to become a model for sustainable village economic empowerment,



which not only increases family income but also builds community economic independence and competitiveness.

Method

The activity and implementation method were carried out through a direct training approach for the community. The target group was residents of Permata Baru Village, North Indralaya District, Ogan Ilir Regency, consisting of approximately 25 housewives. The implementation method for this community service activity was based on an interactive and participatory training approach to ensure active participation of participants in each stage of the activity. The program was implemented in five stages. The first stage involved outreach through village forums, village officials, and posters to introduce the benefits and business opportunities of low-cost liquid detergent.

The second stage involved theoretical and practical training on making liquid detergent under expert guidance, covering ingredient composition, mixing techniques, pH testing and quality standards. When making liquid detergent, surfactants are added to boiling water, the heat of which has been turned off, to ensure optimal dissolution without damage from excessive heat and to prevent excessive foaming. pH testing is performed to ensure the detergent is within a skin-safe range, maintains effective cleaning power, and ensures product quality stability. The third stage involved practical training on making liquid detergent. The fourth stage included mentoring and evaluation to assess product quality and business sustainability. Finally, program sustainability was achieved by providing training modules and videos for community self-reliance. Following this, participant satisfaction questionnaires were used to gauge their responses to the implementation of the program. This evaluation was conducted to assess their ability to produce marketable products and their independence in managing household-based micro-enterprises.

The evaluation of this community service activity was conducted using a structured evaluation sheet designed to measure the success of the program and its impact on participants. The evaluation instrument was divided into two main sections: an evaluation of the activity implementation and an evaluation of the impact on the businesses owned or planned by the participants. The evaluation of the activity implementation covered aspects of material understanding, training implementation, delivery methods, and participants' level of satisfaction with the activities. Meanwhile, the impact evaluation focused on changes in knowledge, production skills, entrepreneurial motivation, and the potential application of the training outcomes in participants' households or micro-enterprises.

The assessment system used a 1–5 Likert scale, with the following assessment categories: 1 = dissatisfied, 2 = less satisfied, 3 = quite satisfied, 4 = satisfied, and 5 = very satisfied. Data obtained from completing the evaluation sheet were then analyzed descriptively and quantitatively using Microsoft Excel. The analysis technique included calculating average scores and percentages for each evaluation indicator, as well as presenting the data in tables and graphs to facilitate interpretation of the results. The results of this analysis were used to assess the effectiveness of the activity implementation and as a basis for improving and developing the mentoring program in the future.

Result and Discussion

This community service program focuses on empowering the people of Permata Baru Village, particularly housewives and home-based micro-entrepreneurs in North Indralaya, Ogan Ilir, through training in liquid detergent production as a business opportunity. The



program ran for eight months, starting with program outreach and team formation, and then evaluating product quality and business skills. Liquid detergent production was chosen because it is easy to learn and has broad market potential, making it a source of additional income for housewives and an innovation in business development for micro-entrepreneurs (Lubis et al., 2024).

Furthermore, this activity aims to improve the knowledge and skills of the Permata Baru Village community, particularly home-based micro-entrepreneurs and housewives, in the production of high-quality, raw material-efficient liquid detergent. This training is expected to empower the community to independently produce liquid detergent with cost-effectiveness and competitive results in the market (Kamaluddin et al., 2025). This activity also aims to encourage the development of micro-enterprises based on liquid detergent production as a promising business opportunity that can increase family incomes in Permata Baru Village.

This activity, which involved 25 community members, was conducted in several stages. The first stage involved outreach on the importance of entrepreneurial skills for the residents of Permata Baru Village, particularly for home-based micro-business owners and housewives. During this stage, participants were introduced to business opportunities that can be developed from everyday needs, such as the production of household cleaning products, such as liquid detergent.

The second stage is a theoretical explanation of the chemical fundamentals and safety principles in the manufacture of liquid detergents. Participants gain knowledge about the ingredients used, such as surfactants, thickeners, fragrances, and solvents, as well as the function and how each ingredient works in producing high-quality liquid detergents. Furthermore, the importance of using safe and environmentally friendly ingredients is explained so that the resulting product is not only effective in cleaning but also safe for users and the surrounding environment (Achaw & Danso-Boateng, 2021).



Figure 1. Explanation of Material by the Resource Person

The third stage is hands-on practice in making liquid detergent. Participants are divided into groups and guided by instructors to follow each step of the production process step by step, from preparing ingredients, mixing, testing viscosity and foam, to the final stage of product packaging. Through this practical activity, participants can directly apply the theory they have learned and understand the production process thoroughly. The results of this practice are expected to serve as a concrete example of how the Permata Baru Village community is able to produce quality products with market value, while also opening up new



business opportunities that support the economic development of families and the village (Purwantini et al., 2023).



Figure 2. Manufacturing and Packaging Process

Making Liquid Detergent

Tools and materials:

- 1) Bucket
- 2) Spatula/mixer
- 3) Stove and gas
- 4) Measuring cups and scales
- 5) Surfactant 800 grams
- 6) 50 ml perfume (you can add more if you want it to smell better)
- 7) Fine salt 1kg
- 8) 200 grams of citric acid
- 9) Soda 300 ml
- 10) 2 liters of hot water
- 11) 20 liters of water

Ways of making

- 1) Boil 2 liters of water, then turn off the heat and add the surfactant slowly and stir until dissolved.
- 2) Prepare a bucket, add texapon, citric acid, salt, and soda, stir until evenly mixed.
- 3) Add water gradually then add the surfactant solution.
- 4) Add water, stir again until half a bucket is filled.
- 5) Put the perfume into the bucket and salt then stir again.
- 6) Add the remaining water until it is enough to make 20 liters and stir again.
- 7) If it feels not thick enough, add 150-300 grams of salt.
- 8) Leave it for up to 6 hours, you can leave it for 1x24 hours first and cover it.
- 9) Detergent ready to use



Figure 3. Liquid Detergent Packaging



After the entire liquid detergent-making process was completed, the participants, consisting of home-based micro-business owners and housewives in Permata Baru Village, were invited to discuss the various challenges they faced during the training. This evaluation activity aimed to assess the extent of the participants' understanding of the liquid detergent-making process, from selecting ingredients and mixing to product packaging. In addition, participants were also given the opportunity to share their experiences, challenges, and ideas for improvements to improve the quality of the resulting product. This evaluation is an important step in ensuring that the community truly understands the production process and is ready to develop these skills independently in their respective homes.

Table 1. 1Evaluation Results

No.	Evaluation Indicators	Average score Scale (1-5)	Percentage of Achievement
1.	Training materials according to needs and easy to understand	4.6	92.7%
2.	The presentation of the material by the resource person is clear and communicative.	4.5	89.1%
3.	The training duration is sufficient to understand the material.	4.5	90.9%
4.	Adequate training facilities and resources	4.7	94.5%
5.	The training helps to increase knowledge about liquid detergent production.	4.7	94.5%
6.	Training helps improve liquid detergent production skills	4.6	92.7%
7.	The training provides an understanding of micro-business management.	4.5	90.9%
8.	The training materials help understand the importance of environmentally friendly production.	4.7	94.5%
9.	I am more confident in producing my own liquid detergent.	4.7	94.5%
10.	My liquid detergent production has become more efficient in terms of raw materials.	4.6	92.7%
11.	The quality of my liquid detergent production improved after the training.	4.8	96.4%
12.	I have started using production marketing techniques better.	4.7	94.5%
13.	This training opens up new business opportunities for me and my family.	4.7	94.5%
14.	I feel understand more about the importance of using environmentally friendly materials and processes.	4.7	94.5%

Based on Table 1, all evaluation indicators achieved average scores above 4.5, with most percentages exceeding 90%, indicating a very positive response from participants. Notably, indicator number 11 regarding the improvement of liquid detergent quality received the highest score (96.4%). This significant improvement can be attributed to the hands-on training approach implemented during Stage 3, where participants directly practiced selecting appropriate ingredients, measuring compositions accurately, and applying proper mixing techniques under continuous guidance. These practical activities enabled participants to better understand the relationship between formulation accuracy, homogeneity, and product performance, which directly influenced the perceived improvement in detergent quality.

Direct observations during the practical sessions further confirmed these findings, as participants demonstrated increased precision in ingredient dosing, improved consistency in stirring methods, and greater awareness of quality indicators such as viscosity, clarity, and



foam stability. In addition, discussions during mentoring sessions revealed that participants were able to compare their previous self-made products with the results obtained after training, reinforcing their perception of quality improvement. These results suggest that the integration of demonstrations, hands-on practice, and mentoring effectively enhanced not only technical production skills but also participants' ability to optimize product quality for potential business development.

Furthermore, the high scores related to production efficiency, confidence, marketing practices, and environmentally friendly awareness indicate that the training successfully strengthened entrepreneurial readiness. These findings are consistent with previous studies by Muniruddin et al., (2024) and Nisa et al., (2025), which emphasize that practical and contextual training plays a crucial role in improving human capital quality through enhanced technical competence, entrepreneurial motivation, and sustainable production behavior. However, to ensure the long-term sustainability of post-training micro-enterprises, improvements in human resource capacity should be supported by adequate production facilities and continued marketing assistance. Therefore, this program also promotes business sustainability by providing functional production tools and marketing support to help participants scale up their household-based enterprises.

Conclusion

A liquid detergent production training activity held in Permata Baru Village successfully engaged home-based micro-business owners and housewives as active participants. This training not only provided practical skills in the process of making a liquid detergent that is efficient in raw materials and environmentally friendly, but also introduced the concept of household-based entrepreneurship as a new business opportunity in the village. Through this activity, the community gained an understanding of the importance of product innovation, production efficiency, and the economic potential of liquid detergent as a daily necessity. Evaluation results showed high enthusiasm from the participants, although some still needed guidance on technical matters, such as determining ingredient proportions, work safety, and product packaging, as well as on aspects of marketing and business management to increase the selling value and competitiveness of the product.

Recommendation

Based on the evaluation results, several follow-up recommendations were proposed to relevant stakeholders. Village governments are encouraged to support the sustainability of this program by allocating village funds, providing production facilities, and facilitating the development of community-based micro-enterprises in the liquid detergent production sector, as well as promoting local products through village-owned enterprises (BUMDes) and local market activities. Training participants, particularly housewives and micro-entrepreneurs, are expected to apply the technical skills acquired through small-scale production, maintain consistent product quality, and actively participate in further entrepreneurship and marketing training, including collaboration within production groups to improve efficiency and competitiveness. Furthermore, relevant government agencies, such as the Department of Industry, Trade, and Cooperatives, are advised to provide ongoing assistance in financial management, product standardization and licensing, and access to broader market networks. Through integrated support from all stakeholders, the liquid detergent micro-enterprise in Permata Baru Village is expected to grow sustainably, strengthen economic independence, and contribute to improving the overall welfare of the community.



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References

- Achaw, O.-W., & Danso-Boateng, E. (2021). *Chemical Industries And Process*.
<https://doi.org/10.1007/978-3-030-79139-1>
- Almodóvar-González, M., Fernández-Portillo, A., & Díaz-Casero, J. (2020). Entrepreneurial Activity And Economic Growth. A Multi-Country Analysis. *European Research On Management And Business Economics*, 26, 9–17.
<https://doi.org/10.1016/j.iedeen.2019.12.004>
- Belitski, M., & Guenther, C. (2022). Economic Effects Of The Covid - 19 Pandemic On Entrepreneurship And Small Businesses. *Small Business Economics*, Cc.
<https://doi.org/10.1007/S11187-021-00544-Y>
- Dewanti, N., Supriyadi, E., Sofyan, S., Sunarsi, D., Andika, B., & Yani, A. (2021). Penyuluhan Dan Pelatihan Keterampilan Sablon Pigment Pasta Manual Di Karang Taruna 03 Desa Cisauk. *Jurnal Pengabdian Dharma Masyarakat*, 1.
<https://doi.org/https://doi.org/10.32493/Jpdm.V1i1.9896>
- Endris, E., & Kassegn, A. (2022). *The Role Of Micro , Small And Medium Enterprises (Msmes) To The Sustainable Development Of Sub - Saharan Africa And Its Challenges : A Systematic Review Of Evidence From Ethiopia*.
<https://doi.org/10.1186/S13731-022-00221-8>
- Herissuparman, E., Ismane, M., & Ashari, H. (2024). Msmes And Rural Prosperity: A Study Of Their Influence In Indonesian Agriculture And Rural Economy. *International Journal Of Innovative Science And Research Technology (Ijsirt)*.
<https://doi.org/10.38124/Ijsirt/Ijsirt24jun1227>
- Irawan, B., Rofiah, C., Asfahani, A., Hs, S., & Hasan, W. (2023). Empowering Micro Small And Medium Enterprises (Msmes) To Improve Global Economic Welfare. *International Assulta Of Research And Engagement (Iare)*.
<https://doi.org/10.70610/Iare.V1i2.66>
- Kamaluddin, I., Syamsuri, Manaanu, Y. Al, Harira, A., Utami, A., Khoiriah, A. S., & Rahayu, A. F. A. R. (2025). Kemandirian Ekonomi Pesantren Dengan Pembuatan Detergen Sabun Cair Imam. *Jurnal Abdimas Indonesia*, 648–658.
- Kiswandono, A. A., Wardani, Y. K., & Siswanto, H. (2020). Pelatihan Ekowirausaha Produk Detergen Dan Edukasi Hukum Dagang Di Desa Air Naningan. *Aptekmas: Jurnal Pengabdian Kepada Masyarakat*, 3, 61–66.
- Lamazi. (2020). Pengaruh Umkm Terhadap Pertumbuhan Ekonomi Di Sumatera Selatan. *Juripol (Jurnal Institusi Politeknik Ganeshha Medan)*, 3, 103–108.
<https://doi.org/10.33395/Juripol.V3i1.10491>
- Lubis, U. H., Ismayati, H., & Arif, M. (2024). Pelatihan Pembuatan Deterjen Cair Melalui Digital E-Commerce Shopee Untuk Mendukung Peningkatan Ekonomi Umkm Masyarakat Desa Paya Perupuk Oleh Kkn 146 Uinsu. *Journal Of Business Finance And Economic (Jbfe)*, 5(December).
- Nisa, K., Siringi Ringo, L., Reza Aulia, M., Alfizar, Inayatillah, & Kurniasih, E. (2025). Peningkatan Pengetahuan Kewirausahaan Siswa Di Dengan Pelatihan Pembuatan Sabun Cuci Piring Cair. 2(1), 190–197.
<https://doi.org/https://doi.org/10.71275/Wisdom.V2i1.68>



- Ordeñana, X., Vera-Gilces, P., Zambrano-Vera, J., & Jimenez, A. (2024). The Effect Of High-Growth And Innovative Entrepreneurship On Economic Growth. *Journal Of Business Research*. <https://doi.org/10.1016/j.jbusres.2023.114243>
- Pardo-Garcia, C., & Reilly, O. (2020). *Promoting Employability In Higher Education : A Case Study On Boosting Entrepreneurship Skills*. 1–23.
- Purwantini, S., Rusdianti, E., & Wardoyo, P. (2023). Menumbuhkan Minat Usaha Untuk Penghematan Keuangan Keluarga Dan Bisnis Bagi Ibu Rumah Tangga Di Lerep Semarang. *Tematik Jurnal Pengabdian Kepada Masyarakat*, 5(1), 90–95.
- Wagner, M., Schaltegger, S., Hansen, E. G., & Fichter, K. (2021). *University-Linked Programmes For Sustainable Entrepreneurship And Regional Development : How And With What Impact ?* 1141–1158.
- Widyasanti, A., Rosalinda, R., & Putri, S. H. (2018). Upaya Pemberdayaan Masyarakat Melalui Pembinaan Usaha Sabun Cair Handmade Di Kelompok Rumah Insan Juara, Desa Cilengkrang, Kecamatan Cibiru, Kota Bandung. *Jurnal Pengabdian Kepada Masyarakat*, 8(2 Se-Artikel Pengabdian), 57–65.