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# Community Empowerment Through the Innovation of Tofu into Frozen Food with A Longer Shelf Life

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**ABSTRACT**

**Backgrounds:** Tofu is an Indonesian food made from soybeans and is high in plant-based protein. Bocek Village, Karangploso, Malang Regency, is a main tofu production center. However, local tofu has a short shelf life and generally must be sold the day after production, limiting market value and producer income.

**Objectives:** This community service aims to extend tofu shelf life and increase its market value through frozen tahu walik as a home-based business, particularly for housewives and Family Welfare Movement (PKK) members, while encouraging productive use of local resources and additional household income.

**Methodology:** A community empowerment approach used practical training and guidance in producing and developing a frozen tahu walik business. The product was chosen for its abundant local raw material, simple production process, and low initial investment, making it accessible to small household businesses.

**Findings:** The training introduced frozen tahu walik as a food innovation that turns abundant local tofu into a longer-lasting, higher-value product. It gave participants practical production skills and an alternative household-scale business. Participants practiced production directly, and small-scale marketing through schools and local markets began. The approach offers a simple, replicable model for villages with similar resources.

**Conclusions:** Developing frozen tahu walik through community empowerment can improve the economic participation of housewives and PKK members while adding value to local agricultural products. Its simple production and low entry costs make it a potential model for strengthening household enterprises and community economic development.

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## 1. INTRODUCTION

Indonesia is a country rich in a wide variety of natural resources. It possesses an abundance of biodiversity, both on land and in the water. The potential of Indonesia's rich biodiversity is more than sufficient to serve as a food source for its own population, provided it is managed properly. Indeed, it is no exaggeration to say that it could supply the food needs of other countries around the world (Gardjito et al., 2018). One example of an Indonesian food is tofu. Recognized as one of the staple foods for the Indonesian people, tofu can be considered an essential food that must always be available. As well as being cheap and affordable for all sections of society, tofu has also been shown to have a high nutritional content, one of which is its protein content. Furthermore, another advantage of tofu is that it is not too difficult to prepare, making it suitable for all sections of society (Putro et al., 2021).

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In Indonesia itself, there are many well-known varieties of tofu (Arofani, 2020). There are 10 popular types of tofu in Indonesia, including: tahu pong, tahu sutera, tahu putih, tahu takwa, tahu coklat, tahu air, tahu susu, tahu bandung, and tahu bulat. All these types of tofu have distinctive characteristics in terms of taste, shape and price. As part of the archipelago's culinary heritage, many people have set up tofu-making businesses. Tofu production businesses are generally small to medium in scale and fall into the category of micro, small, and medium enterprises (MSMEs), with a workforce of around 10–20 people. The main characteristic of these businesses is that tofu products easily spoil and decline in quality within a relatively short time. Therefore, producers generally carry out production every day to meet market demand and immediately market the products they produce. This condition means that producers rarely keep stocks of finished products, because long-term storage risks reducing quality and increasing the potential for losses due to products going unsold or spoiled.

Tofu production is widely carried out on a home-based scale, as well as in small-scale tofu factories. The basic process of tofu production involves dissolving the protein contained in soybeans using water as a solvent. Once the protein has dissolved, it is allowed to settle again through the addition of a coagulant until clumps of protein form, which will become the tofu. One method of tofu production involves straining the soybean pulp before cooking, so that the tofu liquid is separated from the pulp. However, the tofu produced by all tofu factories is always monotonous; there are no new innovations to make it more appealing or increase its market value. The production process also sometimes still relies on traditional methods, such as washing the soybeans, which is usually carried out in the nearest river, while the process of crushing the soybeans to extract the soymilk still employs traditional methods, namely by trampling them.

Given that production still relies on such traditional methods, tofu is rarely served to officials at dinner receptions or during important meetings, where high-class cuisine is usually provided. Therefore, as a traditional food, efforts must be made to foster innovation in tofu production, creating products that are appealing and flavorful, thereby increasing their market value and extending their shelf life. One of the regions producing tofu is Bocek Village in the Karangploso sub-district of Malang Regency. One of the owners of this tofu SME is Mr. Ahmad Fauzi, who explained that the business has been operating since 2014. Production has grown from just a few dozen kilograms to 4 quintals per day. At Mr. Ahmad Fauzi's SME, several types of tofu are produced, including Sutra Tofu, White Tofu and Brown Tofu (Fried Tofu). Until now, tofu from Bocek Village has been sold directly without any further processing. Consequently, the tofu here does not keep well; once made, it must be sold immediately.

The limited knowledge of those in the tofu industry makes it difficult for their businesses to grow. They focus solely on the processes of production and sales without giving much thought to product innovation (Sulistiyowati & Putro, 2021). This is what causes many tofu businesses to stagnate. Moreover, changing times have also led to increasingly fierce business competition. The community of Bocek Village relies predominantly on the agricultural sector for their livelihoods. To further empower the community, particularly housewives, they were encouraged to explore business opportunities that could contribute to their family's income. According to Ife, as quoted by Edi, empowerment aims to increase the power of those who are vulnerable or disadvantaged. She also cited Parsons' view that empowerment is a process whereby communities become strong enough to participate in, share control over, and influence the events and institutions that affect their lives. Empowerment emphasizes the community's acquisition of sufficient skills, knowledge and power to influence their own lives and the lives of others they care about.

Meanwhile, innovation arises from a high degree of creativity. It should be noted that creativity is not the same as innovation. In the world of entrepreneurship, creativity refers to the generation of new ideas or concepts, while innovation refers to how those new ideas and concepts are utilized to generate profit (Fadiati & Purwana, 2011). Based on this background, the initiative was taken to produce a processed tofu product, creatively transformed into 'tahu walik', featuring innovative new flavor variations. The production of 'tahu walik' was undertaken because it was recognized that it has significant potential and high market value if developed through home-based production by the residents of Bocek Village. The production of 'tahu walik' utilizes tofu, a raw material that is abundant in Bocek Village, and the production process is relatively straightforward. It is hoped that

this empowerment initiative will increase the income of the Bocek Village community, particularly housewives.

## 2. LITERATURE REVIEW

### 2.1. Tofu Perishability and Shelf-Life Extension

Tofu is a plant-protein-based food product with a high water content, so it is prone to microbial growth, protein degradation, and lipid oxidation during storage and distribution. These conditions give tofu a relatively short shelf life and make it a challenge for producers to maintain product quality (Zhao et al., 2026). Storage at low temperatures and the use of suitable packaging are the main efforts to slow quality deterioration, although temperature changes during storage can accelerate tofu spoilage (Zhao et al., 2026). In Indonesia, tofu is a nutritious food ingredient that is affordable and easy to process (Putro et al., 2021). Therefore, processing tofu into frozen food has the potential to extend shelf life while also reducing producers' dependence on selling the product fresh every day.

### 2.2. Product Innovation in Small Enterprises

Innovation is the application of new ideas and concepts to generate economic value or profit, so it is not limited to the process of creating ideas (Fadiati & Purwana, 2011). In small enterprises, limited knowledge and management capacity often cause business actors to be more oriented toward production and sales activities than toward product development (Sulistiyowati & Putro, 2021). However, innovation can improve the performance of small and medium enterprises, although its impact is influenced by firm age, type of innovation, and cultural context (Rosenbusch et al., 2011). Thus, the development of processed products is one innovation strategy that small enterprises can apply to increase added value, expand market opportunities, and strengthen business sustainability.

### 2.3. Women's Empowerment and Community-Based Food Enterprises

Empowerment aims to improve the skills, knowledge, and capacity of communities so that they are able to make decisions and control the aspects that affect their lives. For women, involvement in economic activities and employment opportunities is one means of promoting empowerment (Kabeer, 2005). Although women contribute substantially to the ownership of micro, small, and medium enterprises (MSMEs) in Indonesia, various barriers still require a more targeted empowerment approach (Awalia et al., 2025). In this context, community groups such as the Family Welfare Movement (PKK) can serve as a platform for developing women's skills and productive economic activities. Empowerment programs through PKK groups can also be directed at developing food businesses, including frozen food production, business management, and digital marketing (Atmaja et al., 2026).

## 3. METHOD

This community service activity was carried out through a community empowerment approach that integrated awareness-raising, training, and mentoring. The approach aimed to optimize the potential of tofu production in Bocek Village through the diversification of processed products that have added value and broader marketing opportunities. The target of the activity was the community of Bocek Village, especially PKK women, who were encouraged to develop food-processing skills as an alternative productive economic activity. The activity consisted of several stages, namely identification of partners' potential and problems, preparation of product innovation, community empowerment awareness-raising, tahu walik production training, packaging and marketing mentoring, and activity evaluation.

The initial stage was carried out through a field survey at several tofu production sites in Bocek Village. The survey aimed to identify the potential of local raw materials, observe the production process, and learn the marketing characteristics and problems faced by tofu producers. Information was collected through direct observation of production activities and brief interviews with tofu producers. The identification results showed that the tofu produced by the community is generally marketed fresh and must be sold immediately after production because it has a relatively limited shelf life. These conditions showed the need for product diversification so that tofu raw material could be

processed into alternative products with added value and broader marketing opportunities. In addition, the availability of tofu raw material in Bocek Village became the basis for selecting tahu walik as a product innovation, as a form of business development based on local resources.

Based on the results of the field identification, the community service team determined tahu walik as the innovation product to be developed in the community empowerment activity. The product was selected based on the availability of tofu raw material in Bocek Village, a relatively simple processing method, and the opportunity to develop the product in ready-to-eat and frozen food forms. Before the training was carried out, the team conducted production trials to determine a suitable formulation by considering ingredient composition, recipe, raw material availability, innovation aspects, and production cost. The product formulation used tofu turned inside out so that the inside was on the outside, then filled with a mixture consisting of chicken meat, tapioca flour, leja-leja flour, cornstarch, eggs, garlic, shallots, ice water, pepper, and flavor enhancer. The product was then fried until cooked to produce ready-to-eat tahu walik. In addition, the product was also introduced in a frozen food form that can be stored in the freezer and fried when it is to be consumed. This preparation was carried out to provide product samples and a formulation that could serve as a reference in conducting the training.

The awareness-raising stage was held on 2 September 2022 and involved PKK women of Bocek Village. This activity aimed to increase the community's understanding of the potential for developing businesses based on local tofu production and of economic empowerment opportunities through food product diversification. The awareness-raising materials covered the potential of tahu walik as a processed product with a higher selling value, marketing opportunities for ready-to-eat and frozen food products, and business development opportunities for the community, especially housewives. In this activity, the community service team explained that processing tofu into an innovative product can be one alternative way of utilizing local potential that was previously marketed mostly as fresh tofu. The awareness-raising was also directed at encouraging community participation in developing entrepreneurial activities that can be carried out using raw materials available in the surrounding environment.

After the awareness-raising, the activity continued with training on processing tofu into tahu walik through hands-on practice by participants with mentoring from the community service team. This training aimed to provide technical knowledge and skills on the tahu walik production process so that the community could apply it independently. The training stages included introduction to raw materials and dough composition, ingredient preparation, the process of turning the tofu inside out, making the filling mixture, filling the tofu, and frying until the product was cooked and ready to eat. Participants were also introduced to processing tahu walik in frozen food form, particularly regarding the alternative of storing the product in a freezer before frying. Through this practice, participants gained direct experience of the stages of processing tofu into a food product different from the fresh tofu that the local community has been producing.

In addition to the production aspect, the community service activity also included packaging and marketing mentoring. On the packaging aspect, the community service team introduced examples of attractive and marketable tahu walik product packaging to provide an understanding of the importance of product appearance in attracting consumer interest. Packaging was also introduced as part of efforts to increase the added value and appeal of the product, particularly for marketing in frozen food form. On the marketing aspect, participants were given guidance on opportunities to sell tahu walik through the surrounding neighborhood, schools, and local markets. This mentoring was directed at introducing alternative marketing channels that the community can reach and at encouraging the development of businesses based on processed tofu products in Bocek Village.

The evaluation was conducted descriptively through observation of the implementation of the awareness-raising and training. The observation focused on participant involvement during the activity, responses to the tahu walik product innovation, and participation in product processing practice. In addition, the evaluation also took into account the follow-up to the activity through the emergence of community initiatives to produce and market tahu walik on a small scale in the surrounding neighborhood, including through sales at schools and local markets. The observation results were used to describe the community's acceptance of the program, the feasibility of skills transfer, and the potential sustainability of the empowerment activity. This evaluation is descriptive

and does not include quantitative measurement of changes in household income, sales turnover, or product shelf life.

## 4. RESULTS AND DISCUSSION

### 4.1. Research Results

Before an awareness-raising session on the empowerment of MSMEs was organized, a survey was conducted in Bocek Village to identify the potential available there. Bocek Village has a great deal of potential; one example is its tofu production center. Until now, the tofu produced has been sold directly to the public and is made the day before. Tofu made today is sold the following day. This tofu does not keep for long, meaning that once production is complete, it must be sold immediately. In response to this problem, the development of an alternative way of processing tofu was initiated to extend its shelf life through community empowerment, especially of housewives, so that they can earn their own income. This was done by encouraging them to set up 'tahu walik' MSMEs.

The initiative began with awareness-raising sessions on community empowerment to foster village self-reliance. During these sessions, the women of Bocek Village were encouraged to produce 'tahu walik', both as ready-to-eat products and as frozen food. On 2 September 2022, an awareness-raising session was held for the women of the PKK (Family Welfare Movement) in Bocek Village. The session focused on enhancing entrepreneurship to boost the village's self-reliance. As Bocek Village is a major producer of tofu, its residents, particularly the women, were encouraged to empower themselves by increasing the market value of their tofu and extending its shelf life through the production of 'tahu walik', both as frozen food and ready-to-eat products. 'tahu walik' was chosen because its raw materials are abundant in Bocek Village and the production process is relatively straightforward.

Frozen 'tahu walik' has a longer shelf life when stored in the freezer. This means that when consumers wish to eat it, it simply needs to be fried in hot oil. Tahu Walik is fried tofu from which the center has been scooped out and then turned inside out so that the inside is on the outside. It is then filled with a mixture consisting of chicken, tapioca flour, leja-leja flour, cornstarch, eggs, garlic and shallots (finely chopped and fried), ice water, pepper and flavor enhancer. The tahu walik is then fried immediately until crispy, ready to eat. If it is to be eaten a few days later, it can be stored in the freezer before frying. It is typically served with a dipping sauce (a mixture of chili sauce and sweet soy sauce). Tahu walik can be enjoyed as a snack or as a side dish, depending on the consumer's preference.



**Figure 1. Promotion of a tofu product innovation at the Bocek Village Hall, Karang Ploso Sub-district**
Source: Author Documentation

Figure 1 shows the awareness-raising and promotion of the tofu product innovation held at the Bocek Village Hall, Karangploso Sub-district. The activity was attended by a number of participants who appeared to be paying attention to the presentation by the implementing team. The interaction between the presenters and participants shows a process of delivering information and introducing the product innovation to the community. This activity was one form of mentoring for the community in introducing the potential for developing food products through innovation, while also increasing participants' understanding of opportunities for developing tofu products. The documentation depicts the direct implementation of the community service activity in the village environment.



**Figure 2. Training on product innovation involving the processing of tofu into 'tahu walik' frozen food for PKK women in Bocek Village**
Source: Author Documentation

Figure 2 shows the implementation of the food product innovation training through the processing of tofu into frozen tahu walik (frozen food), involving the PKK women's group in Bocek Village. The series of documentation shows several stages of the activity, starting from the provision of guidance and discussion with participants, the preparation of raw materials and processing equipment, to direct practice in making the product. Participants were involved in the tofu processing, the preparation of the filling, the shaping of the product, and the arrangement of the processed results into packaging.

At the end, the finished tahu walik, processed and packaged as a frozen food product, can be seen. This activity is a form of knowledge and skills transfer to the PKK group in developing product innovation based on local food ingredients. Through the training, tofu that was previously marketed in conventional form was introduced as a processed product with added value, serving variations, and potential for development as a home-based business product.

After the training and the practice of processing tofu into frozen tahu walik, as shown in Figure 2, the activity continued with the application of innovation to the product packaging aspect. This stage aimed to produce a more attractive product appearance, give it a visual identity, and support the product's readiness for marketing. The results of applying the design and using packaging for tahu walik are shown in Figure 3.




**Figure 3. An example of how tahuwalik is packaged**
Source: Author Documentation

Figure 3 shows the results of the tahu walik product innovation, which has been packaged using several types of transparent plastic packaging containers with a product label design. The packaging is equipped with a visual identity in the form of the product name and design elements that serve as a differentiator and also as a means of introducing the product to consumers. The use of transparent packaging allows consumers to directly see the condition and shape of the product, while the label provides product identity information that supports the marketing aspect. The variety of packaging shapes and sizes also shows an effort to adjust the product presentation to be more practical and attractive. The application of this packaging is part of the innovation in developing tahu walik as a frozen food product, while also supporting the increase in added value and appeal of the product produced by the PKK group of Bocek Village.

Existence of the Tahu Walik MSME in Bocek Village, Karangploso Sub-district, has potential not only to generate economic value for business actors, but also to serve as a means of community empowerment through the development of food-processing skills and the creation of local business opportunities. Tahu walik, which is made from tofu, also offers an alternative for plant-protein-based food diversification. Thus, the development of this MSME has the potential to provide economic benefits while also increasing the community's capacity to process food ingredients into value-added products. The initial results of the community service activity have begun to appear through the response of the Bocek Village community to the tahu walik product innovation. The products resulting from the training have been introduced for marketing on a limited scale, including through school environments and local market activities around Bocek Village.

However, this development cannot yet be used as evidence of business sustainability after the mentoring program ends. Information on the number of participants who consistently continue production, consumer characteristics, sales levels, and income development has not been systematically documented. Therefore, follow-up mentoring is needed, covering the strengthening of production capacity, business management, packaging, marketing, and evaluation of sales development. The potential for developing tahu walik as a souvenir product for the Batu tourist area can also be considered a marketing opportunity in the future, but it needs to be preceded by a market study to determine consumer preferences, demand, and distribution feasibility. Thus, the sustainable development of the Tahu Walik MSME in Bocek Village still requires further mentoring and evaluation so that the economic benefits of the program can develop continuously.

## 4.2. Discussion

The results of the community service activity show that the frozen tahu walik innovation has the potential to be developed as a processed product based on local commodities in Bocek Village. This potential is supported by the abundant availability of raw materials, a relatively simple

production process, and the community's response in beginning to market the product on a small scale through local schools and markets. This finding is in line with Mrosso et al. (2024), who showed that product innovation can improve the performance of women-managed food-processing businesses. The use of freezing technology is also in line with previous community service activities in increasing the added value of local commodities (Rosidah et al., 2024) and in developing processed tofu products (Mutia & Qomaruddin, 2022). From the perspective of Phiri and Barnard (2018), creativity is one of the factors that drive opportunity recognition and innovation. This is reflected in this activity through the development of tofu into frozen tahu walik, which has different characteristics and has begun to be introduced to consumers.

The application of freezing techniques is an alternative for overcoming the limited shelf life of fresh tofu, which spoils easily and therefore generally must be marketed immediately (Sari et al., 2023). However, freezing does not completely eliminate the risk of product quality decline. Temperature changes during storage can accelerate the deterioration of tofu quality (Zhao et al., 2026), while freezing methods and storage temperatures affect liquid loss, texture, and the microstructure of tofu (Poudyal et al., 2019). Therefore, the development of frozen tahu walik requires consistent storage management, especially regarding freezer availability, the stability of the electricity supply, and product handling when marketed. This aspect is important because this activity has not yet conducted shelf-life testing or observation of changes in product quality during storage. Thus, shelf-life testing under household freezer conditions needs to be part of follow-up mentoring to determine the product's ability to maintain its quality over a certain storage period.

Food safety and packaging are also a concern in developing home-based frozen tahu walik production. Desye et al. (2023) revealed that food safety knowledge, attitudes, and practices among food vendors in low- and middle-income countries remain varied, so training and education are needed. This is reinforced by Sihombing et al. (2018), who showed that trained food workers have better food safety knowledge, attitudes, and practices, while Palupi et al. (2024) found that limited training among food handlers relates to low application of hygiene practices. Accordingly, the production skills introduced need to be balanced with cleanliness of raw materials, equipment, the production environment, and post-processing handling. The packaging introduced (Figure 3) also helps improve product readiness for marketing, as Mahira et al. (2024) and Mardhiyyah et al. (2023), found that packaging and label information, especially the expiration date, influence consumers' purchasing decisions regarding MSME products. Thus, follow-up mentoring needs to cover sanitation hygiene and informative packaging labels so that development focuses not only on appearance, but also on food safety and consumer trust.

From the empowerment aspect, involving women's groups through PKK is an approach to developing productive skills while opening up economic activity opportunities based on local potential. This approach is in line with community service programs based on frozen food product development that place production skills as the initial stage of community empowerment (Atmaja et al., 2026). The role of PKK groups as a platform for women's participation in local economic activities and the improvement of family welfare is also explained by Zuhri and Mursyidah (2024). However, mastering production skills is not enough to ensure business sustainability. Awalia et al. (2025) explained that women MSME actors need support in marketing, financial management, and the expansion of business networks. Therefore, the development of frozen tahu walik needs to be directed at mentoring on calculating the cost of goods produced and determining selling prices.

This is important because small business actors tend to take only raw material costs into account when setting product prices (Rosidah et al., 2024), whereas applying the full costing method can help producers account for cost components more comprehensively and set profit margins in a measured way (Bangun et al., 2023). In addition, strengthening branding and digital marketing through social media can be a business development strategy, as shown in studies on Indonesian MSME marketing (Tatik & Setiawan, 2024) and the empowerment of women entrepreneur groups (Santoso & Chamami, 2023). These aspects are the next development needs so that the production skills that have been acquired can develop into more focused business activities.

Overall, this community service activity shows that the frozen tahu walik innovation is not only an alternative for diversifying tofu products, but also opens up opportunities for women's economic empowerment through the utilization of local potential. The experience of food-processing programs in various regions shows that increasing women's capacity in food product processing has

the potential to support improvements in family welfare and savings capacity (Goel et al., 2018). However, increased income and family economic independence cannot yet be concluded as an impact of this activity because changes in income have not been measured. The achievements that can be identified are still limited to the introduction of production skills and the emergence of small-scale marketing initiatives. Therefore, monitoring of production sustainability and sales development is needed to determine whether the frozen tahu walik innovation can develop into a sustainable productive business in Bocek Village.

## 5. CONCLUSION

The village of Bocek in Karangploso Sub-district is one of the main centers for tofu production. The tofu produced here is always sold immediately after production, as it does not keep for long. To create a tofu product with high market value and a longer shelf life, we are encouraging the residents of Bocek village to empower themselves by producing or setting up businesses specializing in 'tahu walik'. This 'tahu walik' can be sold as frozen food or ready-to-eat. Frozen 'tahu walik' has a longer shelf life and commands a higher selling price. By empowering small and medium-sized enterprises (SMEs) to produce 'tahu walik', it is hoped that, in addition to increasing the product's value and shelf life, this initiative will also provide business opportunities particularly for the women of Bocek Village enabling them to become more self-reliant and boost their family's income.

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### Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding the publication of this paper.

### Author Contributions

**E.W.:** Conceptualization, Methodology, Supervision, Project Administration, Writing – Review & Editing.
**A.H.M.:** Investigation, Data Curation, Writing – Original Draft.
**A.A.Y.:** Investigation, Resources, Validation.
**I.A.A.:** Investigation, Visualization, Writing – Original Draft.
**F.D.R.A.R.**: Investigation, Resources, Visualization.

### Funding Statement

No funding was received for this community service activity.

### Informed Consent

Informed consent was obtained from all participants after the purpose of the activity was explained.

### Ethical Approval

This community service activity was carried out with respect for participants' rights, voluntary participation, and confidentiality of personal information. It involved no experiments or sensitive personal data.

## Data Availability

The data that support the findings of this study are available from the corresponding author [E.W.] upon reasonable request.

## Declaration of Generative AI and AI-assisted Technologies

During the preparation of this manuscript, the authors utilized Claude for language editing, proofreading, and drafting support. All outputs generated by the AI tool underwent rigorous critical review and thorough editing by the authors to ensure factual accuracy, enhance clarity of expression, and confirm adherence to established academic standards. The authors assume full responsibility for the integrity and content of this manuscript.

## 6. REFERENCES


Arofani, P. (2020). *10 Jenis Tahu Paling Populer di Indonesia, yang Mana Favoritmu?* IDN Times. https://www.idntimes.com/food/dining-guide/jenis-tahu-paling-populer-di-indonesia-00-mw8d5-p89z9c

Atmaja, D., Nisa, P. C., Dwijayanti, I., Muhmin, A. H., Tamzil, F., Kustiawan, U., Setiyati, R., Arianti, Y., & Hafidz, G. P. (2026). Pemberdayaan Ibu PKK melalui Pengembangan Usaha Frozen Food Berbasis Komunitas untuk Meningkatkan Kapasitas Produksi dan Pemasaran Digital. *KENDURI: Jurnal Pengabdian Dan Pemberdayaan Masyarakat*, *6*(2), 223–233. https://doi.org/10.62159/kenduri.v6i2.2883

Awalia, R., Syarief, R., & Haryati, T. (2025). Strategies for Developing Women's Entrepreneurship in the MSMEs Sector: A Systematic Literature Review. *Indonesian Journal of Business and Entrepreneurship*, *11*(1), 226–237. https://doi.org/10.17358/ijbe.11.1.226

Bangun, N., Natsir, K., & Ngadiman, N. (2023). Pelatihan Penentuan Harga Pokok Produksi pada Kelompok UMKM di Kelapa Dua Tangerang. *Jurnal Bakti Masyarakat Indonesia*, *6*(2), 321–328. https://doi.org/10.24912/jbmi.v6i2.26340

Desye, B., Tesfaye, A. H., Daba, C., & Berihun, G. (2023). Food Safety Knowledge, Attitude, and Practice of Street Food Vendors and Associated Factors in Low- and Middle-Income Countries: A Systematic Review and Meta-Analysis. *PLOS ONE*, *18*(7), e0287996. https://doi.org/10.1371/journal.pone.0287996

Fadiati, A., & Purwana, D. (2011). *Menjadi Wirausaha Sukses*. Remaja Rosdakarya.

Gardjito, M., Djuwardi, A., & Harmayani, E. (2018). *Pangan Nusantara: Karakteristik dan Prospek untuk Percepatan Diversifikasi Pangan*. Prenada Media.

Goel, R., Kaur, G., & Singla, R. (2018). Women Empowerment Through Value Addition for Nutritional and Livelihood Security. *AgricINTERNATIONAL*, *5*(2), 10–13. https://doi.org/10.5958/2454-8634.2018.00012.8

Mahira, T. I., Nurwani, N., & Dharma, B. (2024). The Effect of Product and Packaging Variations on Purchasing Decisions. *Jurnal Ekonomi Dan Bisnis*, *25*(1), 36–48. https://doi.org/10.30659/ekobis.25.1.36-48

Mardhiyyah, Y. S., Wijaya, S. U., Satiti, D., & Sa'diyah, N. L. (2023). The Influence of Jenang Ayas Label and Packaging on Customers Purchase Decisions. *Agrointek : Jurnal Teknologi Industri Pertanian*, *17*(3), 622–631. https://doi.org/10.21107/agrointek.v17i3.15789

Mrosso, R. M., Genda, E. L., & Tutuba, N. B. (2024). Effects of Product Innovation on the Performance of Women-led Micro and Small Enterprises in the Food Processing Industry, Tanzania. *The UONGOZI Journal of Management and Development Dynamics*, *32*(1), 41–63. https://doi.org/10.69522/uongozi.v32i1.86

Mutia, S., & Qomaruddin, S. (2022). Peningkatan Pengetahuan Pemanfaatan Olahan Tahu Guna Peningkatan Ekonomi Masyarakat. *ALMUJTAMAE: Jurnal Pengabdian Masyarakat*, *2*(1), 50–55. https://doi.org/10.30997/almujtamae.v2i1.2954

Palupi, I. R., Budiningsari, R. D., Khoirunnisa, F. A., & Hanifi, A. S. (2024). Food Safety Knowledge, Hygiene Practices Among Food Handlers, and Microbiological Quality of Animal Side Dishes in Contract Catering. *Italian Journal of Food Safety*, *13*(3), 12554. https://doi.org/10.4081/ijfs.2024.12554

Phiri, T., & Barnard, B. (2018). Entrepreneurship and Innovation: The Antecedents of Opportunity. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3132397

Poudyal, R. L., Kobayashi, R., Suzuki, T., & Watanabe, M. (2019). Effect of Different Freezing and Storage Condition on the Physical Properties of Protein Coagulum (Firm Tofu). *International Journal of Refrigeration*, *107*, 11–19. https://doi.org/10.1016/j.ijrefrig.2019.07.022

Putro, P. U. W., Sulistiyowati, L. N., & Asmike, M. (2021). Pendampingan Manajemen Produk UMKM "Tahu Barokah" Madiun. *Abdimasku: Jurnal Pengabdian Masyarakat*, *4*(3), 246–253.

https://doi.org/10.33633/ja.v4i3.202

Rosenbusch, N., Brinckmann, J., & Bausch, A. (2011). Is Innovation Always Beneficial? A Meta-Analysis of the Relationship Between Innovation and Performance in SMEs. *Journal of Business Venturing*, *26*(4), 441–457. https://doi.org/10.1016/j.jbusvent.2009.12.002

Rosidah, E., Desiana, D., & Anggraini, W. A. (2024). Pemberdayaan Masyarakat melalui Pelatihan Kewirausahaan Frozen Food System di Desa Kertayasa, Pangandaran. *Jurnal Pasca Dharma Pengabdian Masyarakat*, *5*(1), 1–20. https://doi.org/10.17509/pdpm.v5i1.63346

Santoso, A., & Chamami, M. R. (2023). Community of Women Enterpreneurs: The Role of Competitive Advantage in Improving Marketing Performance. *Prosperity: Journal of Society and Empowerment*, *3*(2), 89–102. https://doi.org/10.21580/prosperity.v3i2.14676

Sari, N. U., Holinesti, R., Gusnita, W., & Mustika, S. (2023). Efektivitas Penambahan Bawang Putih terhadap Kualitas dan Umur Simpan. *EDUFORTECH*, *8*(2), 120–131. https://doi.org/10.17509/edufortech.v8i2.60473

Sihombing, J., Padmawati, S., & Kristina, S. A. (2018). Knowledge, Attitude, and Practices Regarding Food Safety Among Food Employees in Ambon City, Indonesia. *Malaysian Journal of Nutrition*, *24*(2), 293–299. https://prisma.simaster.ugm.ac.id/karya_files/knowledge--attitude-and-practice-regarding-food-safety-among-food-employees-in-ambon-city--indonesia-23c8d50b2ba899d05f8e762514c738dc

Sulistiyowati, L. N., & Putro, P. U. W. (2021). Pelatihan Pembuatan Kemasan Kain Batik Tulis Murni Ngangkrik di Desa Sidomulyo Kecamatan Sawahan Kabupaten Madiun. *Adi Widya: Jurnal Pengabdian Masyarakat*, *5*(1), 89–94. https://doi.org/10.33061/awpm.v5i1.4547

Tatik, T., & Setiawan, D. (2024). Does Social Media Marketing Important for MSMEs Performance in Indonesia? *Asia Pacific Journal of Marketing and Logistics*, *37*(1), 99–114. https://doi.org/10.1108/apjml-01-2024-0090

Zhao, D., Wu, J., He, C., Cao, Y., Zhong, Q., Chen, H., Huang, Z., Xie, L., & Fan, L. (2026). Effects of Temperature Fluctuations on Quality Deterioration and Flavor Evolution of Pre-Packaged Tofu During Cold-Chain Logistics. *Frontiers in Nutrition*, *13*, 1976213. https://doi.org/10.3389/fnut.2026.1976213

Zuhri, M. S., & Mursyidah, L. (2024). The Role of PKK in Sustainable Community Empowerment. *Indonesian Journal of Cultural and Community Development*, *15*(3). https://doi.org/10.21070/ijccd.v15i3.1092