

Innovation Footprint and New Value Chain from Pematang Johar Village

Dian Setyorini¹, Isra Rafika Sihombing², Sipnarong Kanchanawongpaisan³, Muhammad Hafiz Abd.Rashid⁴, Phan Bao Giang⁵, Khoirul Amri⁶, Teuku Muhammad Syahrizal⁷, Diego Faustine Karim⁸

^{1,2,8} Sekolah Tinggi Ilmu Ekonomi Eka Prasetya, ³ Shinawatra University Thailand, ⁴ Universiti Teknologi Mara (UiTM) Malaysia, ⁵ Universiy of Economics and Finance, Ho Chi Minh (UEF) Vietnam, ^{6,7} Universitas Syiah Kuala

*Corresponding author

E-mail: dian_setyorini25@eka-prasetya.ac.id (Dian Setyorini)*

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Abstract: Pematang Johar Village is one of the agricultural villages with abundant rice production. However, a portion of the harvest results in low-quality rice such as broken grains, dull color, and leftover rice from daily consumption. This problem leads to economic inefficiency and increased food waste. Through this community service program, a new value chain innovation was introduced by processing rice waste into rice crackers. This innovation was chosen because of easily available raw materials, cultural consumption habits, and its potential to reduce food waste while creating local culinary identity. The production process is simple, low-cost, and offers wide marketing opportunities both online and offline. The program results show an increase in community knowledge and skills, establishment of a small business group, and the birth of a new culinary identity for Pematang Johar Village.

Keywords:

Community Empowerment; Food Waste; Innovation; Rice Cracker; Value Chain

Introduction

Indonesia is an agricultural country that relies on the agricultural sector as the main source of income for its people (Sakinah et al., 2018). However, agricultural production results are often not utilized optimally due to limited innovation and inefficient value chains (Devaux et al., 2018). A similar situation occurred in Pematang Johar Village, where some of the rice harvest resulted in broken and dull-colored rice, resulting in low sales value. Furthermore, the community's habit of leaving rice behind also increases the potential for household food waste (Nasution et al., 2025).

According to the Food Security Agency Shakila (2025), Indonesia produces more than 20 million tons of food waste annually, mostly from rice and rice products. This waste can be recycled into value-added products through innovation in new value chains (Listyoningrum et al., 2023).

Through this service activity, the implementation team introduced innovations in processing leftover rice and broken rice into rice crackers, as a strategy for creating a new value chain based on local resources (Tahun et al., 2025). This product is not only economically valuable, but also has the potential to become a typical culinary identity of Pematang Johar Village that can support the development of the creative and sustainable economy (Cv et al., n.d. 2022). Rice crackers not only have a long shelf life, but also have a fairly stable market demand.

The Community Service Program (PKM) is designed to optimize local potential based on rice agricultural products, improve the skills of villagers in product innovation, create new value chains based on local resources, and open entrepreneurial opportunities for the community.

The title of this activity is "Innovation Footprint and New Value Chain from Pematang Johar Village", which emphasizes the process of transforming waste into economic opportunities.

Method

The method for implementing community service activities uses a participatory and educational approach with the following stages (Muhammadiyah & Rappang, 2019):

a. Initial Observation and Problem Identification

The activity began with a field survey to identify rice farming potential and community consumption habits. Data was collected through interviews with farmers and groups of housewives.



Figure 1. in Pematang Johar Village

b. Presentation and explanation

The team gave a presentation and showed a video on rice cracker-making techniques, from selecting ingredients and mixing the dough, molding, drying, frying, and modern packaging.



Figure 2. During Presentation



Figure 3. Explaining the Manufacturing Process

c. Product Production and Branding Assistance

The community is guided to develop local brands, packaging designs, and sales strategies through social media.



Figure 4. Brand image that the Team Introduces

d. Marketing and Partnerships

Products are marketed through collaborations with stalls, restaurants, caterers, school canteens, and souvenir centers. In addition, digital marketing is carried out through platforms such as WhatsApp, Facebook and Instagram (Setyorini, 2024) (Meta et al., 2024).



Figure 5. Marketing and Partnerships

e. Evaluation and Monitoring

An assessment was carried out on product quality, community enthusiasm, and improvements to the local economy.

Results

The results of the activities show several important achievements:

- a. Community skills improvement: Training participants were able to produce rice crackers with crispy quality, distinctive flavor, and attractive shapes.
- b. Interest in the formation of a new business group: the "Pematang Johar Rice Crackers" Group.
- c. Local culinary identity: This product has become a new culinary icon for Pematang Johar Village and has attracted interest from people from outside the area.

Discussion

This activity demonstrates that applying the value chain concept to agricultural processing can increase the added value of local products. The value chain encompasses all activities that create value, from inputs to the final product with a marketable value. (Fatih et al., 2021). In the context of Pematang Johar Village, a new value chain is formed from collecting leftover rice → processing into dough → drying → packaging → distribution → sales (Setyorini et al., 2023).

In addition, the social innovation approach through training and mentoring has proven effective in changing people's perspectives on food waste. (Fatih et al., 2021). With the support of digital technology, marketing of rice crackers is not only limited to the local market but can also reach wider consumers (Global et al., 2025).

This activity also demonstrates the importance of collaboration between academics, village governments, and communities to create sustainable innovations rooted in local potential (Widhagdha & Anantanyu, 2022).

Conclusion

A community service program in Pematang Johar Village has successfully introduced a new innovation and value chain through the production of rice crackers based on agricultural byproducts. This innovation not only reduces food waste but also boosts the local economy and strengthens the village's culinary identity.

In the future, this activity can be developed by increasing production capacity, expanding the digital market, and supporting the local government to make rice crackers a superior product of Pematang Johar Village.

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