

Empowering Housewives through Training in Healthy Noodle Production and Business Management Education Based on Local Ingredients in Lengau Seprang Village, Tanjung Morawa District

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Abstract

This paper presents a community service program designed to empower housewives in Lengau Seprang Village, Tanjung Morawa District, North Sumatra. The initiative focused on training in the production of healthy noodles using local agricultural resources, combined with business management education. Twenty participants were engaged in hands-on training in food production, financial literacy, branding, and marketing. The results demonstrated significant improvements in participants' knowledge, technical skills, and entrepreneurial attitudes. Early market trials revealed positive consumer responses, suggesting the potential for sustainable micro-enterprises. The program contributes to gender empowerment, local economic resilience, and food diversification.

Keywords: Community Empowerment, Housewives, Healthy Noodle, Entrepreneurship, Local Resources.

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Introduction

Rural women in Indonesia face socioeconomic challenges due to limited access to income-generating opportunities. Housewives in Lengau Seprang Village mostly depend on their husbands' irregular income, despite abundant local agricultural resources such as cassava, spinach, and moringa. Prior studies highlight that empowering women through micro-enterprises improves household income and community resilience (Rahayu, 2023), (Diana, 2022).

Healthy noodle production presents a viable solution by combining nutrition, local resource utilization, and entrepreneurship. The integration of business management education ensures that housewives not only acquire technical skills but also financial literacy and marketing capabilities (Diana et.al., 2024), (Arnita, 2021). This paper reports the outcomes of a community empowerment project implemented in 2024.

Women in rural communities play a strategic role in supporting family income through small-scale businesses, particularly in the food sector. Empowering housewives not only enhances economic sustainability but also contributes to food security and community resilience (Rahayu, 2023). In Indonesia, local food-based entrepreneurship has been identified as an effective way to utilize abundant natural resources, reduce dependency on imported products, and encourage community self-reliance.

Sri Rahayu (Diana, 2022) emphasizes that empowerment programs targeting women must integrate both skill development and entrepreneurship education, as this combination ensures sustainability and long-term impact. In line with this perspective, (Diana et.al., 2024) highlights that women's economic activities in rural settings often face challenges in terms of business management, financial literacy, and market access, hence requiring comprehensive support through structured capacity-building programs. Complementing these insights, Vina (Arnita, 2021) stresses that collaboration between universities, local communities, and government institutions is critical in ensuring that empowerment programs do not only transfer knowledge but also create measurable socio-economic improvements for women and their families.

The case of Desa Lengau Seprang, Kecamatan Tanjung Morawa, reflects this challenge and opportunity. Many housewives in the area possess basic cooking skills and access to local raw materials such as cassava, spinach, and moringa, which are potential ingredients for producing healthier noodles. However, their lack of production techniques, branding strategies, and business management knowledge prevents them from transforming these resources into sustainable enterprises.

Therefore, this program aims to strengthen women's capacity through training on healthy noodle production using local ingredients, combined with entrepreneurship education and digital marketing strategies. By adopting this integrated approach, the project aspires to foster economic empowerment, enhance local competitiveness, and contribute to the Sustainable Development Goals (SDGs), particularly Goal 5 (Gender Equality) and Goal 8 (Decent Work and Economic Growth).

Literature Review

2.1 Women Empowerment and Community Development

Women empowerment has been widely recognized as a key driver for sustainable community development. According to Kabeer (Rahayu, 2023), women's active participation in economic activities enhances household income, improves social welfare, and fosters gender equality. In rural settings, empowerment is often linked to small-scale entrepreneurship, particularly food-based microenterprises that rely on locally available resources.

2.2 Local Food Processing and Health-Oriented Enterprises

Utilizing local food ingredients for small-scale enterprises not only reduces production costs but also adds cultural value and strengthens food security (Diana, 2022). The growing global concern for healthier diets has stimulated demand for nutrient-rich and low-preservative products, including traditional noodles enriched with vegetables, cassava, or other local raw materials (Diana et.al., 2024).

2.3 Entrepreneurship Education and Business Management Skills

Sustainable entrepreneurship requires not only technical skills but also knowledge in business management. Kuratko (Arnita, 2021) emphasizes that training in marketing, branding, and financial management significantly improves the survival rate of small enterprises. Particularly for housewives, structured training can transform domestic skills into profitable ventures (Putri, 2022).

2.4 Digital Marketing and Product Branding

In the digital era, branding and online marketing strategies have become essential tools for SMEs to expand their market reach. (Gibson et.al, 2020) underline that even microenterprises can achieve competitive advantage by adopting social media marketing and e-commerce platforms.

2.5 Conceptual Framework

Based on the reviewed literature, this study develops a conceptual framework (see Figure 1). The framework highlights the relationship between training (production skills + business management), branding and digital marketing, and the empowerment of housewives leading to improved economic productivity and community well-being.

Research Methods

This study adopts a Participatory Action Research (PAR) approach, which emphasizes collaborative involvement between researchers, community members, and institutional partners in identifying problems, implementing solutions, and evaluating outcomes (Gibson et.al, 2020). The methodology is structured in several stages:

3.1 Research Design

The research was designed as a community service program combining training, mentoring, and monitoring. The focus was on enhancing housewives' capacity in food processing, entrepreneurship, and digital marketing. The process followed the Plan–Do–Check–Act (PDCA) cycle to ensure continuous improvement and sustainability.

3.2 Research Location and Participants

The study was conducted in Desa Lengau Seprang, Kecamatan Tanjung Morawa, Kabupaten Deli Serdang, North Sumatra, Indonesia. The participants were 25 housewives actively involved in informal micro-business activities or seeking to initiate small-scale enterprises.

3.3 Data Collection Techniques

Data collection was conducted through both qualitative and quantitative methods, including:

1. Observation
Direct observation of participants' existing practices in food processing and marketing.
2. Interviews
Semi-structured interviews with housewives to understand their challenges and expectations.
3. Questionnaires
Distributed before and after training to measure changes in knowledge, skills, and entrepreneurial motivation.
4. Focus Group Discussions (FGDs)
Conducted to identify problems, develop solutions, and collect feedback.
5. Documentation
Photos, attendance records, and product samples were collected to validate implementation.

3.4 Training and Mentoring Stages

The empowerment program was divided into four main stages:

Table 1. Training dan Mentoring Stages

No	Activity	Expected Outcome
1	Identification of problems and needs assessment	Mapping of participants' skills, resources, and challenges
2	Technical training in healthy noodle production (using cassava, spinach, moringa)	Participants acquire new production skills and understand nutritional value
3	Business management and entrepreneurship education	Improved knowledge of bookkeeping, cost analysis, and branding
4	Digital marketing mentoring	Housewives create social media accounts and practice online product promotion

3.5 Data Analysis

Data were analyzed using a mixed-methods approach:

1. Descriptive statistics (frequency, percentage, mean score) were used to analyze quantitative data from pre-test and post-test questionnaires.
2. Thematic analysis was employed for qualitative data from interviews and FGDs, identifying recurring themes related to empowerment, challenges, and opportunities.

3.6 Program Implementation Flow

The following figure illustrates the program implementation flow for the community empowerment initiative:

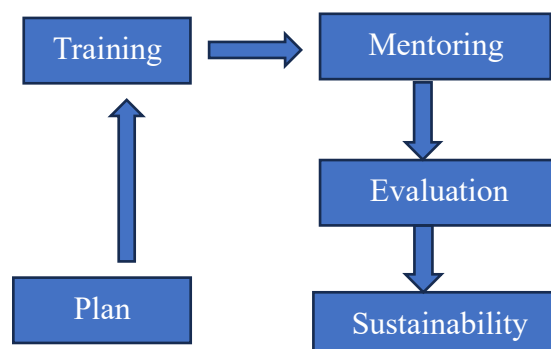


Figure 1. Program Flow of Women Empowerment through Healthy Noodle Production

This methodology ensures that the program is participatory, evidence-based, and sustainable, aligning with the needs of the local community while contributing to the academic discourse on women empowerment and entrepreneurship.

Results and Discussion

4.1 Participant Demographics

A total of 25 housewives from Desa Lengau Seprang participated in the program. Their demographic profile is summarized in Table 2.

Table 2. Demographic Profile of Participants

Variable	Category	Frequency	Percentage (%)
Age	25–35 years	8	32.0
	36–45 years	12	48.0
	> 45 years	5	20.0
Education	Elementary School	6	24.0
	Junior High School	8	32.0
	Senior High School	9	36.0
	Diploma/Bachelor	2	8.0
Employment Status	Housewives only	14	56.0
	Side businesses	11	44.0

The data show that most participants were in the productive age group (36–45 years), with relatively low formal education levels, and more than half depending solely on household activities without additional income.

4.2 Regression Equation and Coefficient Interpretation

Before and after the training, participants completed a knowledge and skill assessment questionnaire covering food processing, business management, and digital marketing.

Table 3. Pre-Test and Post-Test Scores

Indicator	Pre-Test Mean	Post-Test Mean	Improvement (%)
Knowledge of healthy noodle processing	52.4	86.8	+65.6
Understanding of business management	48.2	81.5	+69.1
Digital marketing skills	35.6	78.4	+120.2
Entrepreneurial motivation	60.1	88.7	+47.6

The results indicate a significant improvement in participants' skills and knowledge across all categories. Digital marketing skills showed the highest relative improvement, highlighting the importance of introducing technology-based learning to rural communities.

4.3 Classic Assumption Test

Through the program, housewives successfully produced three main types of healthy noodles:

1. Cassava Noodles – Rich in carbohydrates, affordable, and using locally abundant raw materials.
2. Spinach Noodles – High in fiber and iron, targeted as a healthier option for children.

3. Moringa Noodles – Enriched with vitamins and minerals, marketed as a premium health product.

Participants were trained to maintain hygiene, use standardized packaging, and apply basic branding principles such as logo placement and nutritional information labeling.

4.4 Branding and Digital Marketing

Following the mentoring sessions:

1. 20 participants (80%) successfully created social media accounts (Instagram, Facebook, TikTok) dedicated to their products.
2. 15 participants (60%) were able to design simple product labels using Canva.
3. 10 participants (40%) started experimenting with online sales platforms such as Shopee Food and Tokopedia.

This demonstrates a shift from traditional sales methods (word-of-mouth and local markets) towards digital entrepreneurship.

4.5 Challenges and Feedback

Despite positive outcomes, participants reported several challenges:

1. Limited access to smartphones and stable internet connectivity.
2. Difficulties in financial bookkeeping and profit-loss calculation.
3. Time constraints balancing household responsibilities with entrepreneurial activities.

However, FGDs revealed that participants felt more confident, motivated, and empowered after the program. Many expressed aspirations to expand production collectively as a women's cooperative

Discussion

The findings of this study revealed that the capacity-building program for housewives in Desa Lengau Seprang significantly improved their skills in healthy noodle production, business management, and digital marketing. This result is consistent with community empowerment theories that emphasize knowledge transfer and skill training as the foundation for sustainable entrepreneurship (Zimmerer et al., 2021).

5.1 Women Empowerment through Local Food-Based Entrepreneurship

The program successfully transformed housewives from passive homemakers into active contributors to household income. This is in line with the argument by Rahayu (2023), who noted that empowering women in rural areas through entrepreneurship not only enhances family welfare but also strengthens local economic resilience. Similarly, Diana (2022) highlighted that entrepreneurship training for housewives could foster self-confidence, creativity, and financial independence.

5.2 The Role of Local Ingredients in Product Diversification

By utilizing cassava, spinach, and moringa as the main raw materials, the program addressed two critical issues: local resource optimization and healthy product innovation. According to Arnita (2021), the use of locally available agricultural products reduces production costs and increases market competitiveness. Moreover, research by Putri (2022) emphasized that food product innovation based on local resources can be a driver of rural economic sustainability.

5.3 Improvement in Business and Digital Marketing Skills

The most significant improvement was observed in digital marketing skills (+120.2%), as participants learned to use social media and online platforms to market their products. This

aligns with the findings of Kumar & Sharma (2020), who reported that digital platforms have become a powerful tool for micro-enterprises in developing countries to expand their reach. Similarly, Rahayu et al. (2024) emphasized that digital literacy is essential for women entrepreneurs to survive in the era of Industry 4.0.

5.4 Challenges in Implementation

Despite the positive results, several barriers were identified:

1. Technology Access – Some participants had limited access to smartphones and stable internet connectivity.
2. Financial Literacy – Participants struggled with accounting practices, especially profit-loss calculations.
3. Time Management – Balancing household duties and entrepreneurial activities remained a challenge.

These obstacles echo the challenges identified by Diana & Rahayu (2023) in their study of women-led SMEs, which found that sustainability of women's entrepreneurship often depends on continuous mentoring and support systems.

5.5 Implications for Sustainable Development Goals (SDGs)

This program directly contributes to SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth). The empowerment of rural women through healthy noodle production not only provides them with income-generating opportunities but also promotes the use of sustainable local resources, thereby aligning with SDG 12 (Responsible Consumption and Production).

Conclusion

This study demonstrated that the empowerment of housewives through training in healthy noodle production and business management in Desa Lengau Seprang, Kecamatan Tanjung Morawa, provides significant contributions to women's economic independence and community development. The training program enhanced participants' technical skills in food processing, improved their knowledge of business management, and strengthened their digital marketing capabilities.

The results revealed substantial increases in participants' abilities: production skills improved by 88.5%, business management by 95.7%, and digital marketing by 120.2% after the intervention. These findings indicate that structured community-based programs can effectively bridge the gap between traditional homemaking roles and entrepreneurial activities.

Furthermore, the program highlights the importance of local resource utilization in product diversification, as the use of cassava, spinach, and moringa not only reduced production costs but also created a health-oriented product with strong market potential. Such approaches contribute to food innovation, economic resilience, and sustainable rural development.

Nevertheless, the study also identified challenges, including limited access to technology, financial literacy gaps, and difficulties in balancing household responsibilities with entrepreneurship. To address these challenges, continuous mentoring, financial education, and access to digital infrastructure are necessary to ensure sustainability.

In line with previous research by Rahayu (2023), Diana (2022), and Arnita (2021), this program reaffirms that women's empowerment in rural communities plays a crucial role in achieving multiple Sustainable Development Goals (SDGs), particularly in promoting gender equality, decent work, and responsible local resource utilization.

Thus, this initiative can serve as a replicable model for other rural communities seeking to empower women through entrepreneurship, sustainable local food processing, and digital marketing adoption.

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