

Enhancing the entrepreneurial skills of rural farmers through digital technology and business innovation

Brillyanes Sanawiri¹, Moh. Fahrial Amrulla²

¹Department of Business Administration, Faculty of Administrative Sciences, Universitas Brawijaya
Jl. MT. Haryono No.163, Malang, East Java, 65145, Indonesia

²Department of Law, Faculty of Law, University of Merdeka Malang
Jl. Terusan Raya Dieng No. 62-64, Malang, East Java, 65146, Indonesia

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ABSTRACT

This community service program aimed to empower farmers in the Taman Madani Farmers' Community, Nongkojajar, by enhancing entrepreneurial skills through digital technology and business innovation. Over 14 weeks, the Agriculture Community Business Creation Program provided training and mentorship to 40 participants on micro-enterprise development, covering business planning, financial management, digital marketing, and product innovation. The program was conducted in four phases: preparation, training, independent business initiation, and development. Participants were introduced to digital tools like Facebook for marketing, along with practical business planning exercises. Despite challenges such as limited internet access, the program significantly improved participants' understanding of business management, marketing, and product development. Many began adopting digital platforms to expand their market reach, increase sales, and improve product competitiveness. The results demonstrated substantial progress in business operations, with participants showing greater confidence in managing their enterprises. Moving forward, recommendations include expanding access to financial support, increasing the frequency of training sessions, and providing continuous mentorship to ensure sustainable business growth and long-term success. By fostering innovation and digital adoption, this program has helped rural farmers build more resilient and competitive businesses in an increasingly digital economy.

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1. INTRODUCTION

Entrepreneurship in the agricultural sector is a strategic necessity for improving the welfare of farmers in rural areas (De Rosa & McElwee, 2015). Developing entrepreneurship, particularly among farmers, can serve as a solution to promote economic independence through micro-enterprises based on local resources. However, rural farmers and entrepreneurs in general often face various challenges, including limited market access, financial capital constraints, and a lack of skills in utilizing digital technology to support their business activities (Astuti et al., 2020; Deichmann et al., 2016). Therefore, community service programs focused on entrepreneurship skills development and digitalization of farming businesses are essential (Bowen & Morris, 2019).

The Agriculture Community Business Creation Program, implemented in Nongkojajar, Malang Regency, aims to empower the *Taman Madani Farmers' Community* in Nongkojajar by equipping them with independent business skills and the ability to leverage digital platforms for entrepreneurship. The Taman Madani Farmers' Community in Nongkojajar consists of small-scale farmers who face several challenges, including limited access to modern agricultural technology, low business literacy, and difficulties in expanding their market reach due to minimal digital adoption. Many farmers still rely on traditional sales methods, which limit their competitiveness in an increasingly digital economy. To address these issues, this program is designed to provide comprehensive training and mentoring, covering crucial aspects of micro-enterprise development in the digital era, such as business planning, financial management, digital marketing, and product innovation. By equipping participants with digital tools and entrepreneurial skills, the program aims to enhance their business resilience and improve their overall market access. Agricultural entrepreneurship plays a vital role in driving the management of micro-businesses in rural areas (Seuneke et al., 2013). In addition to promoting independence, entrepreneurship can help farmers overcome commodity price fluctuations, increase productivity, and expand market access through the use of digital platforms. Several key factors in developing entrepreneurship include motivation, risk-taking, goal orientation, and the ability to seize opportunities (Sanawiri & Iqbal, 2018). When combined with digital technology support, these factors can strengthen the competitiveness of farmers in broader markets (Wilopo et al., 2021).

In the Taman Madani Farmers' Community, most members are engaged in small-scale agricultural businesses, primarily cultivating and processing coffee, organic vegetables, and herbal products such as ginger and turmeric-based drinks. Despite their potential, these farmers lack structured business plans, particularly in cost calculation, market analysis, and digital marketing strategies. Many still rely on traditional sales channels, selling through local intermediaries, which results in low profit margins and unstable incomes. Additionally, limited access to capital and low financial literacy hinder their ability to scale up production and improve product quality.

This program seeks to address these issues by providing targeted entrepreneurship training, focusing on cost-efficient production, business planning, financial management, and digital marketing. Through comprehensive business mentorship, participants learn to calculate production costs accurately, develop effective branding strategies, and utilize online platforms such as Facebook and WhatsApp for marketing. As a result, farmers can expand their market reach, increase product competitiveness, and run more sustainable agribusiness ventures (Yami et al., 2019).

Like many rural farmers, members of Taman Madani face broader economic challenges, including fluctuating coffee prices, rising fertilizer costs, and difficulty accessing premium markets. The lack of entrepreneurial knowledge limits their ability to diversify their businesses, such as by creating value-added products (e.g., packaged herbal drinks, roasted coffee, or organic vegetable boxes) or adopting sustainable farming practices. This program equips farmers with the necessary skills to identify new business opportunities and build resilience in a competitive market. The growing importance of agricultural entrepreneurship has been widely recognized by governments, NGOs, and academic institutions as a key driver of rural economic development (Galvão et al., 2020). Through this training and mentoring initiative, farmers gain practical skills to transform their small farms into more profitable and sustainable agribusinesses. The Agriculture Community Business Creation Program aims to enhance the entrepreneurial capacity of farmers in the Taman Madani Farmers' Community by providing training and mentorship in business planning, financial management, digital marketing, and product innovation. The program seeks to increase farmers' independence in managing their businesses, improve market

access, and promote the adoption of digital tools for business growth. Additionally, it aims to support business diversification, encourage sustainable agricultural practices, and strengthen farmers' resilience against economic fluctuations.

Through this initiative, it is hoped that farmers in the Taman Madani Farmers' Community can increase their competitiveness and build more sustainable agricultural enterprises, both economically and socially. Ultimately, the program is expected to contribute to improving the welfare of farmers and promoting more inclusive rural economic development (Sanawiri & Wilopo, 2017).

2. METHODS

The implementation of the Agriculture Community Business Creation Program in Nongkojajar, Malang Regency, lasted for 14 weeks and was divided into several phases, starting from preparation to evaluation. The aim of this community service program was to equip the *Taman Madani Farmers' Community* with entrepreneurial skills and the ability to utilize digital platforms to support their businesses. The community service activities were carried out by faculty members and students from the Business Administration Department, Faculty of Administrative Sciences, Brawijaya University.

In addition to digital training, the program offers education on the basic concepts of entrepreneurship, including: (1) Introduction to Micro Enterprises: Participants are introduced to the basics of starting and managing micro-enterprises and the importance of understanding their business environment; (2) Capital and Business Plans: Participants are taught the importance of careful business planning, particularly regarding capital and financial management, to ensure business sustainability; (3) Marketing Products Online and Offline: Participants are trained to market their products through both digital (online) channels and traditional (offline) marketing methods; (4) Public Speaking: The ability to speak in public is essential in business, especially when promoting products or communicating with potential customers.

The program employed various methods, including training, mentoring, supervision, and evaluation, with each phase supported by measurable performance indicators (detailed in Table 1). The Agriculture Community Business Creation Program was structured into four main phases, aiming to provide participants with practical entrepreneurial skills and digital platform utilization for business purposes. The program ran from September 5, 2023, to December 12, 2023. Below are detailed descriptions of each phase:

Phase 1: Preparation

In this initial phase, surveys were conducted to identify the profiles, readiness, and needs of the *Taman Madani Farmers' Community*. This allowed facilitators to tailor the training to the specific needs of the participants. After the survey, a program socialization session was held to introduce the objectives, methods, and benefits of the program, ensuring that all participants understood the stages they would go through. Additionally, training was provided for community facilitators, who played a key role as mentors throughout the program (Young et al., 2024). Participants were also given basic digital training, such as using Zoom and Facebook, to help them engage in virtual training and utilize digital platforms for business development.

Phase 2: Training and Mentoring (Weeks 1 to 4)

This phase introduced participants to the basics of entrepreneurship. In Week 1, the focus was on micro-business types, capital acquisition, and business planning. Participants were introduced to

various profitable business types in agriculture, fisheries, livestock, and crafts, aligning with local market opportunities. The goal was for each participant to develop a business plan that included both short-term and long-term goals, as well as capital management strategies (Astuti et al., 2020). During Week 2, participants received personalized mentoring from coaches, where they refined their business ideas and developed more detailed business plans, including capital projections and market analysis. This mentoring ensured that each participant's plan was feasible and aligned with their skills and resources. In Week 3, participants underwent training on 4P marketing strategies (Product, Price, Place, and Promotion) (David & Pitman, 2024). This helped them understand how to position their products in the market, set competitive prices, choose appropriate distribution channels, and create effective promotion strategies—both offline and digital. In Week 4, participants presented their business proposals, which were evaluated based on the feasibility of their ideas, financial projections, and the viability of their marketing strategies.

Table 1. Program objectives and Key Performance Indicators (KPI)

| Phase | Objective | Key Performance Indicator (KPI) |
|--|--|---|
| Phase 1: Preparation | Prepare participants with program understanding and digital skills. | <ul style="list-style-type: none"> - Program socialization - Active participation in socialization - Mastery of basic digital skills (Zoom, Facebook) |
| Phase 2: Training and Mentoring | Provide entrepreneurship knowledge and develop solid business plans. | <ul style="list-style-type: none"> - Completion of business plans - Understanding of 4P marketing strategies - Progress during mentoring sessions |
| Phase 3: Starting Independent Business | Implement business plans, produce goods/services, and launch businesses. | <ul style="list-style-type: none"> - Successful production of goods/services - Active use of digital platforms for marketing (Facebook) - Submission of business proposals |
| Phase 4: Business Development and Evaluation | Develop businesses, track performance, and complete program evaluation. | <ul style="list-style-type: none"> - Sales growth rate - Implementation of financial tracking systems - Completion of evaluation and feedback |

Phase 3: Starting Independent Business (Weeks 5 to 8)

In this phase, participants began implementing their training by starting independent businesses. In Week 5, participants received special training on public speaking and business relations, aimed at improving their ability to promote their products and build networks (Huang-Horowitz, 2015). In Week 6, participants began producing goods or services according to the business plans they had developed. Mentors supervised this process to ensure that production and packaging quality met market standards. This practical implementation phase helped participants apply theoretical knowledge in real-world situations. Supervision began in Week 7, during which community facilitators monitored the production process, assessed packaging standards, and ensured that participants posted their products online through platforms like Facebook. In Week 8, professional mentors evaluated the progress of participants' businesses, including their use of digital marketing platforms, and provided feedback for improvement.

Phase 4: Business Development and Evaluation (Weeks 9 to 13)

In the final phase, participants focused on developing and expanding their businesses. Week 9 provided advanced business strategy training, including managing business growth and increasing sales. Participants also received additional capital to support the next phase of business development. During Week 10, facilitators monitored participants' online and offline sales efforts. Mentors assisted participants in setting up financial tracking systems to monitor sales, income, and expenses digitally.

In Week 11, participants underwent advanced training, focusing on strategies to increase sales and build a loyal customer base. Finally, Weeks 12 and 13 were dedicated to evaluating the overall program. This evaluation included qualitative and quantitative analysis of participants' performance, including business growth, the effectiveness of digital marketing strategies, and the financial sustainability of their businesses (As detailed in Table 2). Participant feedback was gathered to assess the program's success and identify areas for improvement.

Table 2. Program evaluation criteria

| Phase | Evaluation Criteria | Description | Weight (%) |
|--|-------------------------------|---|------------|
| Phase 1: Preparation | Participation and Engagement | Active participation in socialization and digital skills training. | 10 |
| | Business Plan Quality | Evaluation of the completeness, feasibility, and financial accuracy of business plans. | 15 |
| Phase 2: Training and Mentoring | Mastery of 4P Strategy | Understanding and application of proper product, price, promotion, and placement strategies. | 10 |
| | Engagement in Mentoring | Progress and commitment during mentoring sessions. | 5 |
| Phase 3: Starting Independent Business | Production Quality | Quality of goods/services produced, packaging standards, and market compliance. | 15 |
| | Digital Marketing Use | Utilization of digital platforms like Facebook and online stores for product marketing. | 15 |
| Phase 4: Business Development and Evaluation | Sales Performance | Increase in sales and customer base through online and offline channels. | 20 |
| | Financial Management | Ability of participants to track financial performance (expenses, income, and profitability). | 5 |
| | Final Evaluation and Feedback | Participation in final program evaluation and submission of feedback. | 5 |

3. RESULTS AND DISCUSSION

Results

Preparation phase

After conducting surveys in this phase, the profiles, readiness, and needs of the Taman Madani Farmers' Community were identified. The survey results showed that most participants were small-scale farmers producing coffee, organic vegetables, and herbal products. However, 75 percent relied solely on local intermediaries for sales, which resulted in low profit margins and unstable income. Additionally, 80 percent lacked access to business capital, and 60 percent had never used digital platforms for marketing. The majority of participants also lacked structured business plans and had limited financial literacy, highlighting the need for targeted training in business planning, marketing strategies, and financial management.

Training and mentoring phase

Following this phase, participants gained increased knowledge and skills in entrepreneurship. 85 percent of farmers successfully developed structured business plans, outlining their production costs, pricing strategies, and target markets. Training in financial management led to 60 percent of participants implementing basic bookkeeping for the first time. In terms of marketing, 65 percent of participants

created Facebook Business pages or WhatsApp Business accounts, expanding their ability to promote and sell products beyond local markets. This phase significantly improved participants' understanding of market competition and cost efficiency, providing them with tools to increase profitability.

Starting independent businesses phase

After starting their independent businesses, participants began applying their training to real-world business operations. 80 percent of farmers adjusted their pricing strategies, leading to a 15–20 percent increase in profit margins. Additionally, 12 participants (30 percent) successfully transitioned to online sales, reducing dependency on middlemen. Several farmers introduced value-added products, such as packaged herbal drinks and organic vegetable bundles, increasing their market appeal. By the end of this phase, 40 percent of participants reported securing additional income through new business opportunities and diversified agribusiness activities.

Business development and evaluation phase

In this final phase, farmers focused on expanding and sustaining their businesses. By Week 10, 50 percent of participants reported increased sales, with some experiencing growth of up to 30 percent compared to their initial revenue. 40 percent of participants reinvested their profits, allowing them to expand production or improve product packaging. Additionally, 70 percent of participants consistently used digital marketing, leading to wider customer reach and increased product demand. By the end of the program, 20 percent of participants successfully accessed small-scale funding, enabling further business growth and sustainability.

The training also provided new insights into marketing and sales strategies for agricultural products. Participants were taught how to identify potential markets, create effective promotional strategies, and negotiate with buyers. The digital marketing concept played a significant role in enhancing product competitiveness, and despite infrastructure challenges, several participants successfully implemented these strategies. The primary objective of the training was to empower farmers with the knowledge and tools to modernize their marketing and sales approaches, making their products more competitive in an increasingly digital marketplace. This objective was achieved through a multi-dimensional approach.



Figure 1. Program socialization and on-boarding

Figure 1 depicts the Program Socialization and On-boarding session, where facilitators introduce the objectives, structure, and benefits of the Agriculture Community Business Creation Program to farmers in the Taman Madani Farmers' Community. Participants are informed about the four-phase training process, including business planning, financial management, digital marketing, and product innovation.

The session also provides a platform for farmers to share their challenges and expectations, ensuring they understand the program's goals and how it will help them develop independent agribusinesses and expand market reach.

Description of program implementation

The training program was designed as a response to the challenges faced by farmers in marketing their products in the digital age. Prior to the training, most farmers relied on traditional methods to sell their goods, such as local markets or small distributor networks. These methods had limited reach and often failed to capture the attention of increasingly discerning consumers.

The training began with an introductory session that emphasized the importance of modernizing business management practices, including the integration of technology and social media. This session highlighted the benefits of digital marketing, such as broader market reach, relatively low costs compared to traditional methods, and the ability to engage directly with customers. Once participants understood the basic concepts, they underwent an intensive, hands-on training program delivered in several stages: (1) Content Planning. Participants were trained to create structured marketing plans, which included identifying target audiences, defining the types of content to be produced, and scheduling posts on social media platforms; (2) Product Photography and Descriptive Writing. Participants learned basic photography techniques using simple tools, such as smartphones. They were taught how to take high-quality product images with proper lighting, clean backgrounds, and appealing angles. Additionally, they practiced writing product descriptions that were informative, persuasive, and clear; (3) Utilizing Facebook as a Marketing Platform. A core focus of the training was teaching participants how to use Facebook as a marketing tool. They learned how to create professional business pages, upload consistent and engaging content, and leverage features like Facebook Ads to reach a wider audience. The training also included instructions on how to use Messenger to build strong customer relationships through direct communication; (4) Mentoring and Sales Simulation. Following the theoretical and practical sessions, participants received mentoring from digital marketing experts. These mentoring sessions included market simulations where participants practiced handling customer inquiries and resolving complaints. Mentors provided immediate feedback to help participants improve their digital customer engagement skills.

Insights and results from program implementation

The implementation of the training program produced significant results within a short period. The following key outcomes highlight the program's success: (1) Transformation in Marketing Practices. After the training, farmers began actively using Facebook to market their products. They created professional business pages featuring product catalogs with high-quality images, detailed descriptions, and customer testimonials; (2) Expanded Market Reach. Previously, farmers marketed their products only through local markets or small-scale distributors. With Facebook, their products now reached customers beyond their immediate area, including urban markets with higher purchasing power. This expansion opened up new opportunities for farmers to grow their customer base significantly; (3) Sales Growth in a Short Time. Within just 8 days of implementing the digital marketing strategies, sales increased by 10 percent. Several factors contributed to this growth: (a) Effective Promotions: Farmers used paid Facebook advertisements to target specific audiences, such as consumers interested in organic or locally-produced goods; (b) Ease of Access for Customers: By including direct contact information on their social media pages, customers could easily place orders without needing to visit in person; (c) Increased Credibility: The professional appearance of their business pages boosted customer trust in the quality of the products offered.

The next outcomes from this program are: (4) Improved Digital Skills. Beyond the immediate impact on sales, the program significantly enhanced participants' technical skills. They became more confident in using technology to support their businesses. For example, some participants started experimenting with Facebook analytics tools to monitor the performance of their content and optimize their marketing strategies; (5) Long-Term Impact Potential. Although the 10 percent sales increase was achieved in a short time, this improvement underscores the long-term potential of adopting digital marketing strategies. With consistent application of these techniques and continued efforts to expand their customer networks, farmers are expected to sustain and grow their incomes over time.

The success of this program demonstrates that, with proper guidance, farmers can effectively adapt to modern technologies to strengthen their market position in an increasingly competitive environment. These efforts not only increase income but also open new avenues for scaling their businesses.

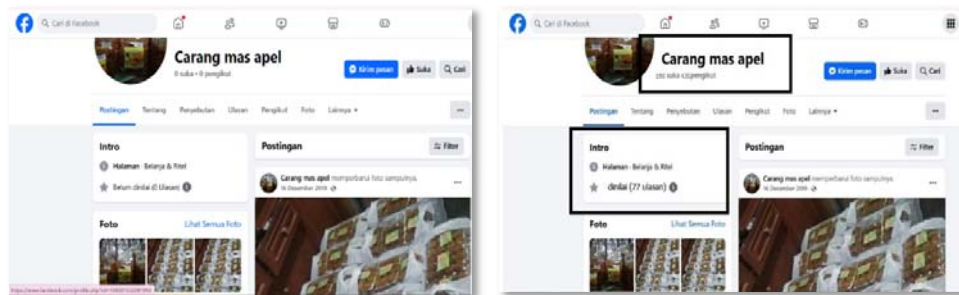


Figure 2. Before and after branding image on Facebook marketplace

Figure 2 illustrates the impact of the Agriculture Community Business Creation Program on farmers' digital presence through Facebook Marketplace. In the "Before" section, the business page had zero followers, likes, and reviews, indicating a lack of online engagement and market reach. In the "After" section, following the program's training on digital marketing and branding, the page grew significantly, reaching 435 followers, 190 likes, and 77 customer reviews. This increase demonstrates the effectiveness of social media utilization in expanding market reach, building customer trust, and enhancing product visibility, empowering farmers to market their products more effectively.

This enabled them to promote their agricultural products more widely, although some participants faced challenges with internet access. Additionally, the program encouraged innovation in developing value-added products from agricultural produce. Some participants started processing their agricultural products into higher-value items, such as fruit preserves, vegetable chips, and fruit-based beverages, which helped increase their competitiveness in both local and online markets.

Packaging and branding innovation was another key aspect, with participants learning that attractive packaging design can serve as an effective marketing tool. Good packaging enhances product appeal and encourages consumer purchases. The program also improved participants' understanding of financial aspects. One of the main focuses of this community service program was to teach participants the importance of systematic bookkeeping. Before the training, most participants did not maintain accurate cash flow records or calculate production costs. Through this training, the farmers' community members began implementing simple bookkeeping systems, enabling them to make better business decisions based on clear data.

Figure 3 compares the bookkeeping methods before and after the Simple Bookkeeping Systems Training. In the "Before" section, farmers relied on manual bookkeeping, using handwritten records in

notebooks, which were prone to errors and difficult to manage. The layout appeared conventional and unstructured, making it challenging to track income, expenses, and profits accurately. In the “After” section, participants adopted digital bookkeeping applications with a modern interface, allowing for automated calculations, organized financial reports, and easier monitoring of business performance. This transformation highlights the program’s success in enhancing financial literacy and efficiency, enabling farmers to manage their agribusiness finances more effectively and sustainably.

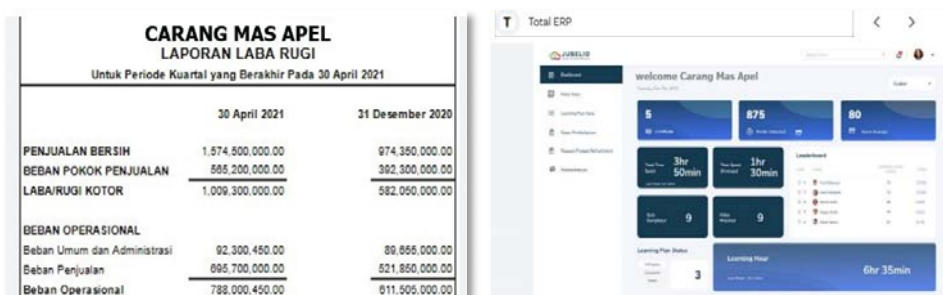


Figure 3. Before and after picture of simple bookkeeping systems training

Discussion

Through the Agriculture Community Business Creation Program, participants receive basic training in using digital communication and marketing tools, such as Zoom Meetings and Facebook (Figure 3). The use of Zoom is crucial as a communication medium for online training, ensuring interactions among group members are maintained. Moreover, the training includes using Facebook as a social interaction platform and an effective marketing tool for agricultural products. Participants are taught how to utilize digital marketing tools, such as creating online stores, allowing them to reach a broader market without relying on traditional intermediaries. The mentoring provided in this program is not only theoretical but also involves hands-on practice. Participants are guided in joining relevant Facebook groups related to their business and creating online stores as a digital marketing channel for their products. This mentoring is crucial to ensure that farmers not only understand the concepts but are also able to apply them in their daily business activities.



Figure 3. Program training & mentoring

At the end of the program, participants received individual scores based on the program’s evaluation criteria (as outlined in Table 2). This assessment will help participants gain a clearer understanding of their performance, identify areas of strength, and recognize aspects that require further improvement. The evaluation serves as a valuable tool for participants to reflect on their progress and apply the insights

gained to enhance their future business practices. Out of 40 community members who participated in the program, the level of enthusiasm and active participation was very high. Participants suggested that the program be further developed (Figure 4), focusing on new business opportunities and improving access to technology and the internet.



Figure 4. Example of product developed during the program

Table 3. Pre-test and post-test result business creation program

| Category | Question | Pre-Test Avg. Score (1-5) | Post-Test Avg. Score (1-5) | Change |
|---|--|---------------------------------|----------------------------------|--------|
| Entrepreneurship Knowledge | I understand the concept of entrepreneurship. | 2.8 | 4.5 | +1.7 |
| | I am familiar with the main components of a business plan. | 2.5 | 4.3 | +1.8 |
| | I have strategies to grow my agricultural business. | 2.7 | 4.4 | +1.7 |
| Digital Marketing Skills | I am comfortable using digital tools (e.g., Facebook) to market my products. | 2.3 | 4.1 | +1.8 |
| | I feel confident in creating and managing an online store for my products. | 1.9 | 4.2 | +2.3 |
| | I regularly track my farming expenses and income. | 2.1 | 4.0 | +1.9 |
| Business Planning and Management | I can accurately determine the price of my products based on production costs. | 2.6 | 4.4 | +1.8 |
| | I have a strategy to expand my market reach. | 2.4 | 4.3 | +1.9 |
| | I am involved in developing value-added products from my crops. | 2.0 | 4.2 | +2.2 |
| Innovation and Product Development | I actively innovate and introduce new ideas into my farming business. | 2.2 | 4.3 | +2.1 |

The Table 3 shows the pre-test and post-test results for 40 participants in the Agriculture Community Business Creation Program. The data reflects changes in participants' knowledge, skills, and business practices before and after the program.

As shown in Table 3, the presented data shows a clear improvement in participants' knowledge, skills, and business practices across all categories: (1) Entrepreneurship Knowledge: The average pre-test scores for understanding entrepreneurship (2.8) and familiarity with business planning (2.5) significantly increased to 4.5 and 4.3, respectively. This indicates that participants gained substantial knowledge in these areas; (2) Digital Marketing Skills: Before the program, participants had low confidence in using digital marketing tools, with an average pre-test score of 2.3. After the program, the post-test score rose to 4.1, reflecting improved comfort with platforms like Facebook for marketing. Confidence in managing online stores showed the greatest improvement, from 1.9 to 4.2 (+2.3); (3) Business Planning

and Management: The ability to track farming expenses and income improved from a pre-test score of 2.1 to a post-test score of 4.0. Similarly, participants' ability to determine pricing based on costs and their market expansion strategies improved significantly (pre-test: 2.6 and 2.4, post-test: 4.4 and 4.3); (4) Innovation and Product Development: The program had a marked impact on participants' involvement in product development, with scores improving from 2.0 to 4.2 for creating value-added products and from 2.2 to 4.3 for business innovation.

The Agriculture Community Business Creation Program in Nongkojajar aimed to empower rural farmers by enhancing their entrepreneurial skills and utilizing digital technology. The results of this program showed significant improvements in participants' understanding and application of business management and digital marketing.

Interpretation of activity results

The program successfully enhanced participants' entrepreneurial skills, particularly in business planning, financial management, and digital marketing. Before the training, most participants relied on traditional business methods without systematic managerial approaches. However, after the program, they developed structured business plans and adopted digital platforms like Facebook to expand their market reach. This progress is reflected in pre-test and post-test results, which showed significant improvements in entrepreneurial knowledge, digital marketing skills, and business management (Putri et al., 2023). These findings align with the results of the study "Optimizing Technology-Based Business Strategies for Empowering Community Partnerships and Improving the Welfare of Women Farmers", which highlights the positive impact of digital technology adoption in community-based businesses. The study demonstrated that integrating digital tools into business strategies effectively increased market access, financial literacy, and business sustainability, similar to how this program empowered rural farmers to become more competitive and adaptive in modern agricultural entrepreneurship.

Relevance of activity results with previous activities

The results of this program align with previous community service studies that emphasize the role of entrepreneurship training and digitalization in improving farmers' welfare. Research by Deichmann et al. (2016) demonstrated that digital technology enhances market access and business efficiency in the agricultural sector, while Bowen and Morris (2019) highlighted that the digital divide can be bridged through targeted training programs (Ridloah et al., 2024). Similarly, the findings of this program are consistent with the study "Empowering Local Economic Potential Post COVID-19 Pandemic", which emphasized the effectiveness of integrating digital tools in business operations to help local entrepreneurs recover from economic downturns. Both studies demonstrate that leveraging digital technology and structured training programs significantly improves market reach, financial literacy, and business sustainability, reinforcing the importance of technology-driven strategies in empowering rural communities and strengthening their economic resilience.

Benefits of the activity and positive impact on partners

This program provided significant benefits to the participants and the Taman Madani community by enhancing business management and digital marketing skills, enabling them to manage their businesses more efficiently and increase product competitiveness. The improvement in marketing strategies led to expanded market access, increased income, and the development of value-added products such as fruit preserves and vegetable chips. Additionally, the program encouraged innovation in packaging and branding, making products more appealing to consumers (Haryanto et al., 2024). These outcomes align with the findings of the study "Utilization of Solar Energy in Hydroponic Systems

for Enhancing Energy Independence in Farming Communities,” which demonstrated how technological adoption enhances business sustainability and economic resilience. Just as the implementation of solar energy in hydroponic farming improved efficiency and productivity, the integration of digital marketing strategies in this program helped farmers broaden their sales reach, increase income, and establish more sustainable business practices. Both studies highlight the importance of technological empowerment in strengthening agricultural communities and ensuring long-term economic stability.

Changes before and after the activity

Data from the partners showed significant changes before and after the activity. Before participating in the program, most participants lacked proper bookkeeping systems and struggled to determine product prices based on production costs. They also relied on traditional marketing methods with limited market reach. After the training, participants began implementing simple bookkeeping systems, enabling them to price their products more accurately. Additionally, there was a notable shift towards digital engagement, with many successfully selling their products through Facebook to a broader customer base (Ridloah et al., 2024). This transformation aligns with the findings of the study “Optimizing Technology-Based Business Strategies for Empowering Community Partnerships and Improving the Welfare of Women Farmers,” which highlighted how integrating technology into business strategies enhances efficiency, market access, and financial management. Just as the implementation of digital business strategies in this program improved farmers’ entrepreneurial skills and market reach, the study demonstrated that leveraging technology-based business approaches helps community-based enterprises improve productivity and economic resilience. Both studies underscore the critical role of technology and structured business management in empowering rural entrepreneurs and fostering long-term business sustainability.

Overall, the program successfully achieved its goal of empowering rural farmers by enhancing their entrepreneurial skills and utilizing digital technology. With continued support and increased access to technology and financing, it is expected that farmers can run more efficient, sustainable, and profitable agricultural enterprises.

4. CONCLUSION AND RECOMMENDATIONS

The implementation of the Agriculture Community Business Creation Program in the *Taman Madani Farmers’ Community* in Nongkojajar successfully achieved its primary goal of enhancing farmers’ entrepreneurial skills, particularly in managing farming businesses through digital technology and business innovation. The program provided practical knowledge on business management, financial planning, and digital marketing strategies relevant to current market needs. Participants showed significant improvement in their managerial abilities, as they were now able to develop structured business plans, manage finances more effectively, and leverage digital platforms like Facebook to expand their market reach. Innovations in developing agricultural products, especially through value-added processing, were among the positive outcomes that enhanced the competitiveness of farmers’ products in local and online markets.

Despite some challenges, such as limited internet access, remained, the participants’ enthusiasm and active participation were very high, demonstrating that. By strengthening ongoing mentorship and expanding access to technology and financing, the program can provide long-term benefits to farmers in the region. In the future, further development is needed, such as increasing the frequency of training

and fostering cross-sector partnerships to provide easier access to technology and capital for farmers. With these steps, farmers are expected to run more efficient, sustainable, and profitable agricultural enterprises.

REFERENCES

- Astuti, E. S., Sanawiri, B., & Iqbal, M. (2020). Attributes of innovation, digital technology and their impact on SME performance in Indonesia. *International Journal of Entrepreneurship*, 24(1), 1-14. <https://doi.org/10.6084/m9.figshare.12228692>
- Bowen, R., & Morris, W. (2019). The digital divide: Implications for agribusiness and entrepreneurship. Lessons from Wales. *Journal of Rural Studies*, 72, 75-84. <https://doi.org/10.1016/j.jrurstud.2019.10.031>
- David, M. C., & Pitman, M. A. (2024). Implementation of a mentoring program for mentee-mentor satisfaction: A longitudinal pilot study. *Medical Science Educator*, 34(2), 405-412. <https://doi.org/10.1007/s40670-024-01994-1>
- De Rosa, M., & McElwee, G. (2015). An empirical investigation of the role of rural development policies in stimulating rural entrepreneurship in the Lazio Region of Italy. *Society and Business Review*, 10(1), 4-22. <https://doi.org/10.1108/SBR-08-2014-0041>
- Deichmann, U., Goyal, A., & Mishra, D. (2016). Will digital technologies transform agriculture in developing countries? *Agricultural Economics*, 47(S1), 21-33. <https://doi.org/10.1111/agec.12300>
- Galvão, A. R., Marques, C. S., Ferreira, J. J., & Braga, V. (2020). Stakeholders' role in entrepreneurship education and training programmes with impacts on regional development. *Journal of Rural Studies*, 74, 169-179. <https://doi.org/10.1016/j.jrurstud.2020.01.013>
- Haryanto, L. I., Hendrawati, T. Y., Darto, D., Yani, F., Listanto, F. A., & Pratama, D. Y. P. (2024). Utilization of solar energy in hydroponic systems for enhancing energy independence in farming communities. *Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang*, 9(4), 853-867. <https://doi.org/10.26905/abdimas.v9i4.14545>
- Huang-Horowitz, N. C. (2015). Public relations in the small business environment: Creating identity and building reputation. *Public Relations Review*, 41(3), 345-353. <https://doi.org/10.1016/j.pubrev.2014.10.018>
- Putri, D. A., Kristiyanti, D. A., & Marginingsih, R. (2023). Optimizing technology-based business strategies for empowering community partnerships and improving the welfare of women farmers. *Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang*, 8(3), 378-388. <https://doi.org/10.26905/abdimas.v8i3.10828>
- Ridloah, S., Ranihusna, D., Putri, V. W., Noekent, V., & Wulansari, N. A. (2024). Empowering local economic potential post COVID-19 pandemic. *Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang*, 9(1), 154-164. <https://doi.org/10.26905/abdimas.v9i1.11601>
- Sanawiri, B., & Iqbal, M. (2018). *Kewirausahaan*. Universitas Brawijaya Press.
- Sanawiri, B., & Wilopo, W. (2017). Regional Innovation System in rural areas and the role of SMEs as countermeasure for poverty: A case in East Java, Indonesia. *Russian Journal of Agricultural and Socio-Economic Sciences*, 66(6), 215-223. <https://doi.org/10.18551/rjoas.2017-06.25>
- Seuneke, P., Lans, T., & Wiskerke, J. S. (2013). Moving beyond entrepreneurial skills: Key factors driving entrepreneurial learning in multifunctional agriculture. *Journal of Rural Studies*, 32, 208-219. <https://doi.org/10.1016/j.jrurstud.2013.06.001>

- Wilopo, W., Heru, S., Mohammad, I., Fahrudi, A. N. L. I., Rizal, A., & Brillyanes, S. (2021). Business innovation: The development of bumdes based on social and business orientation. *Eurasia Economics & Business*, 8(50), 124-130. <https://doi.org/10.18551/econeurasia.2021-08>
- Yami, M., Feleke, S., Abdoulaye, T., Alene, A. D., Bamba, Z., & Manyong, V. (2019). African rural youth engagement in agribusiness: Achievements, limitations, and lessons. *Sustainability*, 11(1), 185. <https://doi.org/10.3390/su11010185>
- Young, K. A., Esquerra, R. M., Muñoz, N., Lacy, S. A., Lehr, J. L., Marayong, P., & Vu, K. P. L. (2024). Advancing inclusive mentoring: an effective mentor training program across comprehensive and R2 public universities. *The Chronicle of Mentoring & Coaching*, 8(1), 58-71. <https://doi.org/10.62935/pn6229>
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