

WhatsApp Business as an Entry Point for Digital Marketing Transformation among Rural MSMEs: Training and Mentoring for Business Actors in Sidaharja Village

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ABSTRACT

Micro, small, and medium enterprises (MSMEs) in rural areas still face obstacles in expanding their marketing reach due to low digital literacy, limited online promotion skills, and strong dependence on conventional sales patterns. This condition was also found among MSME actors in Sidaharja Village, Suradadi District, Tegal Regency, most of whom had not yet used digital media in a structured manner for their business activities. This community service program aimed to improve the knowledge and skills of MSME actors in using WhatsApp Business as a simple, affordable, and contextually appropriate entry point for digital marketing transformation. The implementation method used a community empowerment approach through observation, socialization, training, mentoring, and evaluation stages. The program targeted 20 MSME actors engaged in processed food, fishery products, traditional snacks, and other household-based businesses. The evaluation results showed that the participants' average knowledge score increased from 43.6 in the pre-test to 81.2 in the post-test. A total of 18 participants, or 90%, successfully created WhatsApp Business accounts and developed digital product catalogues, while 13 participants, or 65%, began receiving orders through digital media within two weeks after mentoring. These findings indicate initial outcomes in the form of improved digital literacy, promotional skills, and early adoption of digital marketing. However, these achievements cannot yet be concluded as long-term economic impacts because turnover, customer growth, and transaction sustainability were not measured. This program is recommended to be continued through periodic mentoring, strengthening of promotional content, and the formation of local facilitators to support the sustainability of digital adoption among rural MSMEs.

ARTICLE HISTORY

Received 6 March 2026

Accepted 6 June 2026

Published 13 June 2026

KEYWORDS

rural MSMEs; WhatsApp Business; digital marketing; digital literacy; MSME mentoring; community service

Introduction

Micro, small, and medium enterprises (MSMEs) are one of the main pillars of community economies, including in rural areas, because they contribute to household income, employment creation, and local economic resilience. However, many rural MSME actors still face classic problems, such as limited marketing reach, dependence on direct sales, and low utilization of digital media for business promotion. This condition has become increasingly important as consumer behavior shifts toward digital-based communication and transactions, while some MSME actors still lack adequate literacy, skills, and technical readiness. In this context, WhatsApp Business becomes important as a simple and realistic entry point for digitalization among rural MSMEs. Unlike more complex digital platforms, WhatsApp Business is relatively familiar to the community, easy to operate, and provides basic features that suit the needs of microenterprises, such as business profiles, product catalogues, automated messages, and direct communication with customers. Therefore, the digitalization of rural MSMEs does not have to begin with complex technology, but can start from an application that is close to people's everyday communication habits.

In Sidaharja Village, Suradadi District, Tegal Regency, this issue is reflected in the low use of digital media for business promotion, although the community has considerable household economic potential, particularly in processed food, fishery products, traditional snacks, and other small-scale businesses. MSME actors generally use mobile phones for daily communication, but have not yet used them in a structured way for promotion, customer service, and product catalogue management. This condition indicates a gap between the availability of digital devices and the ability to use them as marketing tools. This gap cannot be addressed merely through general socialization about the importance of digitalization, but requires technical training and mentoring that directly responds to the business needs of partners. More broadly, the urgency of MSME digitalization is also in line with efforts to strengthen small business competitiveness through digital technology adoption, skills training, and managerial capacity building among business actors (Bank Indonesia, 2024; OECD, 2021).

Conceptual studies show that digital transformation among MSMEs does not occur automatically simply because technology is available. Díaz-Arancibia et al. (2024) emphasize that technology adoption among small and medium-sized enterprises in developing countries is influenced by limitations in digital literacy, resources, infrastructure, sociocultural factors, and the need for adoption models that fit local contexts. De Mattos et al. (2024) also explain that technological transformation in SMEs should not be understood merely as the use of digital tools, but as a process of technology assimilation related to changes in how businesses interact with customers, manage product information, and adjust their business models. Therefore, rural MSME digitalization programs must be designed gradually, practically, and based on technology that can truly be used by partners. This framework is important because microbusiness actors in rural areas often do not face barriers in device ownership, but rather in their ability to transform those devices into productive marketing tools.

Several studies and community service activities show that digital marketing can increase product visibility, expand market reach, and improve communication between business actors and consumers. WhatsApp Business is considered relevant for MSMEs because it provides business profile features, product catalogues, automated messages, and customer communication tools that can be used without high costs and without requiring complicated digital infrastructure (Astria & Santi, 2021; Maryani et al., 2022). Meylianingrum et al. (2023) show that the use of WhatsApp Business can become a tangible output in community service activities because it is easy to install, easy to learn, and can be used directly by partners to support product promotion. Similar findings also show that digital marketing training based on familiar applications is more easily accepted by MSME actors because it does not create major learning barriers (Lianardo et al., 2022; Wati et al., 2020). Therefore, WhatsApp Business can be positioned as a relevant initial

digitalization strategy for rural MSMEs, especially for business actors who are not yet ready to use marketplaces or more complex digital marketing systems.

Although various digital marketing training programs have been conducted, a gap remains in community service, particularly in relation to digitalization models that are simple, practical, and aligned with the readiness of rural MSME actors. Many MSME digitalization programs emphasize the importance of digital transformation in general, but do not always explain how simple technology can become an initial bridge for business actors who are still at the basic digital literacy stage. On the other hand, some MSME actors do not immediately need complex platforms, but need media that can help them display products, respond to customers, manage catalogues, and build more professional business communication. The research gap in this program lies in the need to design a community service program that positions WhatsApp Business not merely as a communication application, but as an entry point for realistic technology adoption among rural MSMEs through a combination of socialization, practical training, mentoring, and video tutorial provision. Thus, the specific contribution of this program is to offer a simple, contextual, and replicable digital empowerment model for MSME communities with limited digital literacy.

Based on these problems, this community service program aimed to improve the knowledge and skills of MSME actors in Sidaharja Village in using WhatsApp Business as a digital marketing medium. The target participants were rural MSME actors who previously relied on conventional marketing and did not yet have a simple but managed digital promotion system. The program focused on three main aspects: introducing the importance of digital marketing, providing technical training on the use of WhatsApp Business, and offering implementation mentoring in the form of business account creation, product catalogue development, automated message use, and customer communication features. This formulation is based on the view that digital transformation for rural MSMEs needs to begin with technology that is familiar, affordable, and easy to operate so that adoption becomes more realistic and sustainable.

The urgency of this program lies in its need to respond directly to the operational problems of rural MSMEs, especially in expanding product promotion and improving the professionalism of business communication. The novelty of the program does not only lie in the use of WhatsApp Business as a marketing medium, but also in the empowerment approach that combines direct training, practical mentoring, and the provision of video tutorials as independent learning media. This approach enables partners not only to receive information, but also to gain skills and outputs that can be used in their daily business activities. Thus, this community service program provides a practical contribution as an initial model of rural MSME digital marketing that is simple, affordable, contextual, and potentially sustainable. However, from the outset, this program should be understood as capacity strengthening and early adoption of digital marketing, not as evidence of long-term economic impact, because changes in turnover, customer growth, and transaction sustainability require longer follow-up evaluation.

Method

This Community Service Program used a community empowerment approach oriented toward increasing partner capacity through education, technical training, direct practice, implementation mentoring, and evaluation of activity outcomes. This approach was selected because the main problem faced by MSME actors in Sidaharja Village was not only limited knowledge of digital marketing, but also limited operational skills in using digital applications for promotion and business communication. In the context of MSME empowerment, training needs to be supported by mentoring because digital transformation cannot only be introduced conceptually, but must be practiced directly according to partners' needs and abilities. A participatory approach is also important because it allows the program to be designed based on local needs, business conditions, and participants' readiness as technology users (Dua et al., 2022). Therefore, this activity was

designed not only to introduce WhatsApp Business, but also to help partners use it as a simple, affordable, and practical marketing medium in their daily business activities.

The community service program was conducted in Sidaharja Village, Suradadi District, Tegal Regency. The program was implemented from July 27 to September 3, 2021, as part of the community service agenda of Universitas Pancasakti Tegal. The core activities in the economic pillar were carried out in the home-business environments of MSME owners so that training and mentoring could be adjusted to the real conditions of each partner. The selection of home-business locations provided an advantage because participants could directly practice using digital devices, developing product catalogues, taking product photos, and conducting marketing communication within the context of their own businesses. In addition, implementation at business locations helped the team understand the available facilities, types of products, marketing patterns, and technical barriers experienced by partners. This contextual implementation pattern is in line with the principles of participatory community service, which emphasize the importance of alignment among partner problems, forms of intervention, and the capacity of the target community.

The target partners in this activity were 20 MSME actors in Sidaharja Village who operated household-scale businesses and still predominantly used conventional marketing. The participants' business types included processed food, fishery products, traditional snacks, and other small household businesses. The participants' initial characteristics showed that most had already used mobile phones for daily communication, but had not used digital business applications in a structured way for promotion, product catalogue development, and customer communication. These targets were selected because the participants had marketable products, but did not yet have a simple and managed digital promotion strategy. This condition is consistent with studies on technology adoption in small businesses, which show that the challenge of digitalization does not always lie in the availability of devices, but in digital literacy readiness, technical ability, and the process of assimilating technology into business activities (de Mattos et al., 2024; Díaz-Arancibia et al., 2024).

The implementation of the activity consisted of five stages: needs observation, program socialization, technical training, implementation mentoring, and evaluation. The first stage was needs observation, which was conducted through field observation, brief interviews with partners, and data collection on the initial marketing conditions of MSMEs. At this stage, the team identified the marketing patterns used, participants' ability to use mobile phones, the types of products sold, and barriers to using digital media. The initial observation showed that most MSME actors did not yet have WhatsApp Business accounts, had not developed digital catalogues, and had not used business communication features in a structured manner. These initial findings became the basis for selecting WhatsApp Business as the training medium because this application is relatively close to residents' communication habits, easy to use, and has basic features relevant to the needs of microbusinesses.

The second stage was program socialization for MSME actors. At this stage, participants received explanations about the importance of digital marketing, the benefits of WhatsApp Business for microenterprises, and opportunities to expand markets through communication media that were already familiar to the community. The socialization materials also emphasized that business digitalization does not have to begin with complex platforms, but can start with applications that are easy to access and aligned with partners' capacities. This socialization aimed to build participants' initial awareness that WhatsApp Business can be used not only as a conversation medium, but also as a tool for promotion, product catalogue presentation, customer service, and business identity strengthening.

The third stage was technical training on the use of WhatsApp Business. At this stage, participants were guided directly to download and install the application, create business accounts, complete business profiles, add addresses and service hours, develop product

catalogues, add product photos and descriptions, and use automated message features. The training was conducted through a hands-on practice approach so that participants did not only understand the functions of the application, but were also able to operate its main features independently. This practice-based training pattern is relevant to MSME digital skills strengthening because it helps participants connect training materials with their actual business promotion needs (Lianardo et al., 2022; Wati et al., 2020).

The fourth stage was implementation mentoring. After the technical training, the team provided mentoring to participants to ensure that the WhatsApp Business accounts they had created could be used in each participant's business activities. The mentoring included catalogue updating, simple product photography, product description writing, promotional message creation, use of automated reply features, and simulation of customer communication. Mentoring was also provided to help participants who still experienced technical difficulties, such as problems uploading photos, writing product descriptions, arranging business profiles, or understanding catalogue functions. In addition to direct mentoring, the team provided a video tutorial on the use of WhatsApp Business so that participants could independently review the steps for using the application after the activity ended. This video tutorial became a supporting output designed to strengthen the sustainability of partner learning.

The fifth stage was activity evaluation. Evaluation was conducted to assess program achievement in terms of knowledge, skills, early adoption, and participants' responses to the use of WhatsApp Business. The evaluation data in this article consisted of implementation data collected through pre-tests, post-tests, observation sheets, skill checklists, mentoring notes, and participant response questionnaires. The pre-test and post-test were used to measure changes in participants' knowledge of digital marketing and the basic features of WhatsApp Business, using a score range of 0–100. Observation sheets were used to record participants' involvement during training and mentoring. Skill checklists were used to assess participants' ability to create business accounts, complete business profiles, upload product catalogues, and use business communication features. Mentoring notes were used to record the technical problems experienced by participants, while response questionnaires were used to determine program acceptance and participants' readiness to continue using WhatsApp Business.

Data were analyzed using descriptive quantitative and descriptive qualitative techniques. Quantitative data were analyzed by comparing the average pre-test and post-test scores, calculating the number and percentage of participants who successfully created WhatsApp Business accounts, developed product catalogues, began promoting products digitally, and received orders through digital media. Qualitative data from observations and mentoring notes were analyzed descriptively to explain supporting factors, implementation barriers, and partner responses to the program. The evaluation results were not intended to prove long-term economic impact, but to show program achievement at the output and initial outcome levels. Program outputs included the implementation of socialization, training, mentoring, WhatsApp Business account creation, digital catalogues, and video tutorials. Initial outcomes included increased knowledge, improved operational skills, early adoption of digital promotion, and the emergence of digital orders among some participants.

Table 1. Stages of Program Implementation and Evaluation

Activity Stage	Activity Form	Objective	Data/Indicators Collected
Needs observation	Field observation, brief interviews, MSME data collection	To identify the initial marketing conditions and digital readiness of partners	Initial marketing patterns, business types, mobile phone use, digital barriers
Program socialization	Introduction to digital marketing and	To build participants' awareness of the	Participant attendance, initial responses,

Activity Stage	Activity Form	Objective	Data/Indicators Collected
	the benefits of WhatsApp Business	importance of digital marketing	discussion participation
Technical training	Account creation, business profile development, product catalogue, automated messages	To improve skills in using the main features of WhatsApp Business	Number of accounts successfully created, catalogues developed, use of basic features
Implementation mentoring	Product photography practice, product descriptions, promotional messages, customer communication simulations	To help participants apply the application to their own businesses	Records of barriers, participant involvement, catalogue updates, digital promotion adoption
Evaluation	Pre-test, post-test, observation, skill checklist, response questionnaire	To assess changes in knowledge, skills, responses, and early adoption	Pre-test/post-test scores, skill percentages, participant responses, initial digital orders

Results

Initial Partner Conditions

The results of initial observations and discussions with village officials and business actors showed that most MSME actors in Sidaharja Village still conducted marketing conventionally. The dominant marketing patterns included direct sales to surrounding communities, word-of-mouth promotion, and the use of close social networks. The 20 MSME actors involved as program partners were mostly engaged in household processed food, fishery products, traditional snacks, and other small household businesses. The initial survey showed that approximately 75% of MSME actors had not used digital platforms for product marketing, while the remaining 25% had promoted products through personal social media, although not yet in a structured manner as a business marketing strategy.

The pre-test results also showed that the partners' knowledge of digital marketing was still limited. On a score range of 0–100, the participants' average knowledge score before training was 43.6. This score indicates that most participants did not yet understand the concept of digital marketing, the function of product catalogues, product description writing, customer communication management, and the use of business features in WhatsApp Business. This initial condition shows that the main barrier faced by partners was not only limited access to technology, but also limited digital literacy and practical skills in transforming everyday communication devices into business promotion tools. Nevertheless, the village had strong economic potential because the participants had marketable products, entrepreneurial motivation, and support from local institutions such as PKK, Karang Taruna, and BUMDes.

Program Implementation Process

The community service program was implemented through socialization, technical training, implementation mentoring, and evaluation stages. During the socialization stage, the team introduced the program objectives, the importance of digital marketing for rural MSMEs, and the benefits of WhatsApp Business as a simple promotional medium. This activity was attended by 20 MSME actors from Sidaharja Village. The socialization material was directed toward building

the understanding that business digitalization does not have to begin with complex platforms, but can start with applications that are already familiar to the community.

The next stage was technical training on the use of WhatsApp Business. Participants were guided to create business accounts, complete business profiles, develop product catalogues, upload product photos, add product descriptions, and use automated message features for customer service. Based on the evaluation results during training, 18 out of 20 participants, or 90%, successfully created WhatsApp Business accounts and uploaded at least three products to their digital catalogues. The remaining two participants still required further technical assistance due to limited mobile phone skills and unfamiliarity with managing business application features.

After the training, the team conducted implementation mentoring for two weeks. The mentoring was carried out to help participants improve product photos, write promotional messages, update catalogues, and initiate communication with potential customers. In addition to direct mentoring, the team also provided a WhatsApp Business video tutorial as an independent learning medium. This tutorial was prepared so that participants could review the steps for account creation, profile setting, and catalogue development after the training activity ended.

Initial Program Outcomes

The evaluation results showed an increase in participants' knowledge and skills after joining the program. The average knowledge score increased from 43.6 in the pre-test to 81.2 in the post-test, representing an increase of 37.6 points. This increase indicates improved participant understanding of digital marketing, WhatsApp Business functions, product catalogues, and customer communication. However, this achievement should be understood as an increase in knowledge and initial capacity, not as direct evidence of improved business performance.

In terms of skills, 18 participants, or 90%, were able to create WhatsApp Business accounts and develop digital product catalogues. A total of 17 participants, or 85%, were able to use basic features such as business profiles, product descriptions, catalogues, and automated messages. These results show that participants did not only receive information, but were also able to practice basic digital marketing skills. In addition, 16 participants, or 80%, began promoting their products through WhatsApp Business after the mentoring activities.

In terms of early digital marketing adoption, 13 participants, or 65%, began receiving orders through digital media within two weeks after the training. This achievement indicates an initial change in marketing communication patterns because some participants began receiving customer responses through digital channels. However, this finding cannot yet be concluded as strong economic impact because it was not measured using indicators such as turnover, profit, number of regular customers, transaction frequency, or order sustainability in the medium term. Therefore, the receipt of digital orders in this program is more appropriately positioned as an initial outcome, not as final evidence of improved business performance.

Conversely, seven participants, or 35%, had not received digital orders during the mentoring period. This finding is important because it shows that creating an account and catalogue does not automatically lead to transactions. Based on mentoring notes, several factors were suspected to influence this condition, including product photos that were not yet attractive, limited customer networks, participant inconsistency in updating catalogues or promotional statuses, lack of confidence in actively marketing products, and variations in participants' ability to respond to customer messages. Thus, this program successfully built the foundation of digital literacy and skills, but economic success still requires further strengthening in promotional content, product quality, customer networks, and consistency in using the application.

Table 1. Achievement of the Community Service Program

No.	Program Component	Achievement Indicator	Initial Condition	Program Target	Result/Achievement	Description
1	Digital marketing socialization program	Number of MSME actors attending the socialization	No specific digital marketing socialization had been conducted	20 participants	20 participants attended	Output achieved
2	Improvement of digital marketing knowledge	Average pre-test and post-test scores	Average pre-test score of 43.6	Minimum average score of 75	Average post-test score of 81.2	Initial outcome in the form of increased knowledge
3	WhatsApp Business training	Number of participants able to create business accounts	Most participants did not yet have business accounts	20 participants	18 participants successfully created accounts	Two participants still required technical assistance
4	Development of digital product catalogues	Number of participants uploading products to catalogues	No digital catalogue available	20 participants	18 participants uploaded at least three products	Initial outcome in the form of catalogue development skills
5	Use of business communication features	Participants were able to use business profiles, product descriptions, catalogues, and automated messages	Participants did not yet understand business features	75% of participants	17 participants, or 85%, were able to use basic features	Business communication capacity improved
6	Implementation mentoring	Number of participants receiving direct mentoring	No mentoring had been conducted	20 participants	20 participants received mentoring	Mentoring output achieved
7	Provision of independent learning media	Availability of a WhatsApp Business video tutorial	No video tutorial was available	One video	One video tutorial was completed and distributed	Supported independent learning

No.	Program Component	Achievement Indicator	Initial Condition	Program Target	Result/Achievement	Description
8	Early adoption of digital promotion	Number of participants beginning to promote products through WhatsApp Business	Promotion was still conventional	15 participants	16 participants began digital promotion	Initial outcome in the form of changes in promotional patterns
9	Receipt of orders through digital media	Number of participants receiving digital orders	Almost no digital orders	12 participants	13 participants received digital orders	Initial outcome; not yet evidence of long-term economic impact
10	Positive partner response	Percentage of participants stating that the program was useful and that they wanted to continue	No assessment had been conducted	80% of participants	85% of participants gave positive responses	Indicates good program acceptance

Based on the program achievement table, most program indicators were successfully achieved. The strongest achievements were reflected in socialization, mentoring, provision of video tutorials, increased knowledge, and initial skills in using WhatsApp Business. However, the program results need to be interpreted proportionally. The increase in post-test scores and the success in creating catalogues indicate increased participant capacity, while digital orders received by 65% of participants indicate early adoption of digital marketing. These achievements are not sufficient to conclude a substantive improvement in business performance because data on turnover, transaction frequency, customer growth, or medium-term measurement were not yet available.

Discussion

Improving Digital Capacity as an Initial Program Outcome

The program results show that WhatsApp Business training and mentoring can improve the initial capacity of MSME actors in Sidaharja Village to understand and use digital marketing. The increase in the average score from 43.6 to 81.2 indicates that participants gained a better understanding of digital marketing, product catalogues, and customer communication. However, this increase should be interpreted as an initial outcome in the form of improved knowledge, not as direct evidence of improved business performance. In the context of MSME digital transformation, the OECD (2021) emphasizes that small business digitalization requires training support, skill improvement, and managerial capacity strengthening so that business actors can use technology productively. Thus, the achievement of this program is located at the early stage of digital transformation, namely strengthening partners' readiness and digital literacy.

Participants' skill improvement was also reflected in the success of 90% of participants in creating WhatsApp Business accounts and developing digital product catalogues. This achievement shows that the intervention did not stop at material delivery, but also produced

operational skills. This finding is consistent with Maryani et al. (2022), who show that training in optimizing WhatsApp Business can help MSME actors use the application for business development and product sales. Meylianingrum et al. (2023) also show that WhatsApp Business can be used as a medium for digital branding and marketing for MSMEs because the application is easy to implement and produces practical outputs in the form of business accounts and product catalogues. Thus, the success of participants in developing digital catalogues in this program shows that WhatsApp Business can become a realistic entry point for digitalization among rural MSMEs.

WhatsApp Business as a Simple Technology Aligned with Partner Readiness

The selection of WhatsApp Business as the intervention medium became an important factor in the success of the program. This application is relatively familiar to the community, does not require high costs, and provides basic features that suit the needs of microbusinesses. The official WhatsApp Business page explains that the application has features such as business profiles, catalogues, quick replies, labels, and away messages that can help business actors manage product information and customer communication more professionally. These features align with the needs of partners who are still in the early stage of digitalization, namely requiring a simple tool to display products, respond to customers, and improve business communication patterns.

This finding can be explained through studies of technology adoption in SMEs. Díaz-Arancibia et al. (2024) emphasize that technology adoption in small and medium-sized enterprises in developing countries is influenced by limited resources, technological literacy, socioeconomic contexts, and the suitability of technology to user needs. De Mattos et al. (2024) also explain that technological transformation in SMEs is not only related to the use of digital tools, but also to the process of assimilating technology into the way businesses operate and interact with customers. In the context of this program, WhatsApp Business was selected because it matched participants' communication habits and could be directly integrated into their daily business activities. Therefore, the program results strengthen the view that simple technology can serve as an effective initial step in encouraging digital adoption among rural MSMEs.

Program Limits: Why Did 35% of Participants Not Receive Digital Orders?

One important finding in this program was that 65% of participants began receiving digital orders, while 35% had not received orders during the mentoring period. This finding shows that successfully creating an account and catalogue does not automatically lead to transactions. This section is important because it highlights the limits of the program intervention. In MSME digitalization, barriers are not only related to the ability to use applications, but also to product quality, visual appeal, customer networks, content strategy, promotional consistency, response speed, and consumer trust.

Participants who had not received digital orders were suspected of still facing several barriers. First, some product catalogues were not yet supported by attractive photos and convincing descriptions. Second, some participants did not yet have broad digital customer networks, so even though catalogues had been created, their products were not yet widely viewed by potential consumers. Third, participants were not yet fully consistent in updating statuses, sending promotional messages, or following up with potential customers. Fourth, some participants still needed time to shift their mindset from passive promotion to active promotion. Fifth, digital adoption requires repeated habituation, while the mentoring program lasted only two weeks. This is consistent with de Mattos et al. (2024), who emphasize that digital transformation in SMEs is a process of technology assimilation, not merely application installation.

Therefore, the 35% of participants who had not received digital orders should not be understood as a program failure, but as an indicator that digital marketing requires further stages.

Basic WhatsApp Business training needs to be strengthened with product photography, simple copywriting, customer mapping, consistent use of WhatsApp status, transaction recording, and evaluation of customer responses. Without such strengthening, business accounts risk becoming administrative outputs rather than active marketing tools. Thus, the program results show that application training is an initial stage, while business success requires further mentoring oriented toward marketing strategies and the quality of customer interaction.

The Difference between Capacity Improvement and Business Impact

The reviewer's suggestion regarding the need to distinguish between capacity improvement and business impact is highly relevant. In this program, capacity improvement was clearly reflected in post-test scores, the ability to create accounts, catalogue development, the use of basic features, and positive partner responses. Meanwhile, business impact was only visible in a limited way through the early adoption of digital orders by 65% of participants. These data are not sufficient to state that the program substantively improved business performance. To demonstrate business impact, further data are needed, such as changes in turnover, number of transactions, number of new customers, order frequency, average order value, and continued use of WhatsApp Business after several months.

This distinction is important so that the article does not overclaim. The program can be stated to have successfully improved participants' digital literacy and initial skills, but it cannot yet be claimed as a program that measurably increased income. The OECD (2021) emphasizes that SME digitalization requires continued support, training, skill improvement, and managerial capacity so that technology can truly generate economic benefits. Therefore, the achievements of this program should be positioned as an initial foundation for the digital transformation of rural MSMEs. Medium- and long-term economic impacts still require further monitoring and evaluation.

Sustainability of Digital Adoption and the Role of Local Facilitators

This program provided video tutorials as independent learning media and conducted initial mentoring for two weeks. However, the sustainability of digital adoption cannot rely only on video tutorials. Digital behavior change among rural MSMEs requires repeated reinforcement, usage monitoring, and easily accessible local support. Without a local mentoring mechanism, the WhatsApp Business accounts that have been created risk becoming inactive, catalogues may not be updated, and business features may not be used consistently.

Therefore, program sustainability needs to be directed toward the formation of local facilitators or village digital champions. This role can be carried out by BUMDes, Karang Taruna, PKK, or village officials with better digital skills. Local facilitators can help MSME actors update catalogues, improve product photos, create promotional messages, use WhatsApp status, and record orders. A mentoring scheme can also be implemented through a village MSME digital clinic held periodically, for example once a month. Through this mechanism, the program does not stop at basic training, but develops into a local support system that maintains the sustainability of digital adoption.

Sustainability also needs to be equipped with simple monitoring indicators. Several indicators that can be used include the number of participants who remain active in using WhatsApp Business after one, three, and six months; the frequency of catalogue updates; the number of promotional statuses created; the number of incoming customer messages; the number of digital transactions; and changes in turnover. These indicators are important so that program impact is not based only on participants' perceptions, but also on more measurable business behavior data. Thus, future community service programs need to move from application-use training toward strengthening the digital marketing ecosystem of rural MSMEs.

Program Implications and Replication Potential

This program has practical implications as an initial model of rural MSME digital marketing based on a familiar application. For MSME actors with basic digital literacy, WhatsApp Business can serve as a bridge toward broader digital marketing because it does not require expensive infrastructure and is relatively easy to understand. This model also has replication potential in other villages with similar characteristics, especially villages that have local products but do not yet have a structured digital promotion system.

However, program replication needs to consider participant readiness, local institutional support, product quality, and post-training mentoring mechanisms. Without such support, the program risks only producing business accounts and digital catalogues without sustainable marketing changes. Therefore, the next program development needs to include training in promotional content, product photography, simple copywriting, transaction recording, marketplace integration, and business performance monitoring. Thus, this community service program can be developed from a basic digital literacy strengthening model into a data-based MSME empowerment model that is sustainable and has more measurable economic impact.

Conclusion

The MSME digital marketing community service program in Sidaharja Village shows that WhatsApp Business training and mentoring can improve the initial capacity of microbusiness actors in rural areas. The program results showed an increase in participants' knowledge from an average pre-test score of 43.6 to an average post-test score of 81.2. In addition, 18 out of 20 participants, or 90%, successfully created WhatsApp Business accounts and developed digital product catalogues, while 13 participants, or 65%, began receiving orders through digital media within two weeks after mentoring. These achievements show that the program successfully strengthened digital literacy, application-use skills, and early adoption of digital marketing.

Nevertheless, the program results need to be interpreted proportionally. The increase in knowledge scores, the success in creating accounts, and the development of digital catalogues are indicators of improved participant capacity, while the receipt of digital orders by some participants is an initial outcome of marketing activity. These achievements cannot yet be concluded as medium- or long-term economic impact because data on turnover, sustained transaction numbers, customer growth, or longitudinal changes in business performance were not available. Therefore, this program is more appropriately positioned as an initial foundation for rural MSME digitalization, not as final evidence of improved economic performance.

The main strength of the program lies in the selection of WhatsApp Business as an intervention medium that is simple, familiar, affordable, and aligned with the partners' initial capacity. The program also produced a video tutorial as independent learning media and provided participants with direct practice experience. However, the limitations of the program include the relatively short mentoring duration, the limited number of participants, variations in participants' digital abilities, and the absence of a medium-term monitoring mechanism. In addition, 35% of participants had not yet received digital orders, indicating that application adoption needs to be followed by strengthening promotional content, product photo quality, customer networks, and consistency in using the application.

As a follow-up, the program needs to be developed through periodic mentoring, the formation of local facilitators or village digital champions, training in product photography, simple copywriting, transaction recording, and continuous monitoring of WhatsApp Business use. The village government, BUMDes, PKK, and Karang Taruna can be involved as sustainability drivers so that the business accounts and digital catalogues that have been created remain actively used. With this strengthening, this community service program has the potential to develop into a more sustainable, adaptive, and measurable rural MSME empowerment model.

Based on the program results, MSME actors are advised to use WhatsApp Business consistently as a medium for promotion and customer communication. Partners need to update product catalogues regularly, add more attractive product photos, write clear product descriptions, use WhatsApp status for promotion, and respond to customer messages quickly and professionally. Consistent use is key to ensuring that WhatsApp Business accounts do not stop as training outputs, but truly become active marketing tools. For the village government, BUMDes, PKK, and Karang Taruna, it is recommended to establish a village MSME digital forum or clinic that functions as local support after the community service program ends. This forum can help MSME actors update catalogues, create promotional content, expand customer networks, and record digital orders. For future community service implementers, programs should be designed not only at the basic training stage, but also include monitoring one to six months after the activity. Further evaluation needs to include indicators such as number of transactions, turnover, number of new customers, promotional frequency, and sustainability of application use. Thus, future community service programs will not only demonstrate increased digital literacy, but also prove business impact more measurably.

Acknowledgment

The authors would like to express their sincere gratitude to Universitas Pancasakti Tegal for the academic support provided during the implementation and preparation of this community service program. The authors also extend their appreciation to the Sidaharja Village government, local community representatives, and MSME actors who participated in and supported the training and mentoring activities. Their cooperation, participation, local knowledge, and non-financial support contributed substantially to the successful implementation of this program and the refinement of this article.

Research Ethics Statement

This community service program was conducted in accordance with the ethical principles of community-based academic activities, including respect for participants, voluntary participation, transparency, accountability, and research integrity. Since the program focused on digital marketing education, WhatsApp Business training, implementation mentoring, activity documentation, pre-test and post-test evaluation, skill checklists, observation, and participant response questionnaires, it did not involve clinical intervention, biomedical procedures, biological specimens, or the collection of sensitive personal health data. Participants were informed about the purpose, procedures, and expected outputs of the activities before implementation. Participation in the training, mentoring, and evaluation activities was voluntary. The data used in this article were limited to program records, aggregated evaluation results, observation notes, skill achievement records, mentoring notes, and participant responses. All information was used responsibly while maintaining respect for participant confidentiality and the community context.

Author Contributions

Inayatun Illahiyah: conceptualization, coordination of the community service program, development of the digital marketing intervention design, supervision of implementation, analysis of program outputs and initial outcomes, and writing of the original draft.

Shela Arum Viana: preparation of digital marketing socialization materials, support for participant coordination, assistance in pre-test and post-test implementation, and contribution to manuscript review.

Ulfa Zakiyah: development of WhatsApp Business training materials, guidance in business account creation, support for product catalogue preparation, and contribution to evaluation of participant skills.

Muhamad Jafar Sodik: field observation, coordination with village partners and MSME actors, identification of initial partner needs, and documentation of program implementation.

Mei Rahmawati: mentoring of MSME participants in product photo preparation, product description writing, catalogue updating, and promotional message development.

Muhammad Hilmy Fuadi: technical assistance in WhatsApp Business installation, business profile completion, automated message use, and troubleshooting during participant mentoring.

Citra Melyasari: preparation of evaluation instruments, skill checklists, participant response questionnaires, and organization of pre-test and post-test data.

Mohammad Arkham Z. P.: development of video tutorial materials, technical support for digital documentation, and assistance in preparing independent learning media for participants.

Muhamad Arif Syaifullah: data recapitulation, analysis of participant achievement, preparation of program tables, and contribution to interpretation of initial outcomes.

Muhammad Rizqul Akbar: critical review of program implementation, validation of descriptive interpretation, manuscript editing, and finalization of the article.

All authors have read, reviewed, and approved the final version of the manuscript.

Funding

This community service program received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the implementation, authorship, or publication of this article.

Artificial Intelligence Use Statement

The authors declare that artificial intelligence was used only as a limited technical support tool for language editing, sentence refinement, grammar checking, translation assistance, and improving manuscript readability. All processes involving program planning, partner coordination, activity implementation, data collection, pre-test and post-test evaluation, skill assessment, mentoring documentation, academic interpretation, and conclusion development remain the full responsibility of the authors.

Data Availability Statement

The data supporting the findings of this article consist of community service program documents, activity reports, attendance records, pre-test and post-test summaries, skill checklist results, observation notes, mentoring notes, participant response summaries, documentation of WhatsApp Business account creation, digital catalogue development records, and program evaluation notes related to MSME digital marketing training in Sidaharja Village. Due to participant confidentiality and ethical considerations in community-based activities, complete raw documentation is not publicly available. Additional information regarding the program implementation and evaluation procedures may be obtained from the corresponding author upon reasonable request.

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