

# Digital Financial Application Literacy for MSMEs

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## ARTICLE'S INFORMATION

## ABSTRACT

### Keywords:

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Micro, Small, and Medium Enterprises (MSMEs) contribute substantially to Indonesia's economic growth, yet many continue to struggle with limited financial literacy and low digital readiness, particularly in managing routine bookkeeping. This community service program aims to strengthen MSME financial management skills by integrating financial literacy education with practical training using the BukuWarung digital application. Employing a service-learning approach, the program was conducted through preparation, training, simulation, and evaluation stages involving 15 MSME actors across various sectors. The results indicate significant improvement, with participants' average understanding scores increasing from 42% before training to 81% after training, accompanied by greater accuracy and independence in recording transactions digitally. These findings demonstrate that combining conceptual learning with hands-on digital practice effectively enhances MSME financial capability. The program concludes that sustained mentoring and extended intervention duration are necessary to ensure long-term adoption of digital bookkeeping practices and support MSME business sustainability.

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## I. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in Indonesia's economic structure. They contribute more than 60% to the Gross Domestic Product (GDP) and absorb around 97% of the national workforce (Kementerian Koperasi dan Usaha Kecil dan Menengah Republik Indonesia, 2021). After the Covid-19 pandemic, the growth of MSMEs continued to strengthen national economic performance (Wahdiniwaty et al., 2022), emphasizing their position as the backbone of economic stability. This strong economic contribution reflects the considerable potential of MSMEs in supporting regional development. However, behind this significant role, MSMEs still face persistent internal challenges, particularly in financial and managerial capabilities. Shobari et al. (2025) note that MSME actors generally have weak financial planning capacity and limited ability to identify future business risks.

One of the most common problems is the inability of MSME owners to prepare structured and routine financial reports. Ideally, MSMEs should record sales, purchases, and inventory systematically. However, many business owners either neglect record-keeping or do not recognize its importance. Tambunan (2019) explains that this weakness is influenced by the limited educational background of business owners and their lack of understanding of basic accounting principles. As a result, MSMEs lose essential benefits such as monitoring financial health, making informed decisions, and minimizing risks of business failure (Harahap, 2020). This indicates a fundamental managerial gap between what MSMEs need and what they are currently capable of performing.

A similar condition is found in Kedungkandang District, particularly in Sawojajar and Madyopuro, which are rapidly developing economic areas with increasing numbers of MSMEs across trade, culinary, and service sectors. Despite this growth, many MSME actors still rely on simple and unstructured transaction records, or even perform no recording at all. Field observations confirm that financial practices in the area are hindered by limited knowledge of financial reporting and inadequate skills in utilizing digital technology. Meanwhile, digital-based economic activities continue to expand, and MSMEs must adapt to these developments (Rosa et al., 2022). Yet, many business owners are unfamiliar with digital financial applications that could assist in daily bookkeeping, inventory monitoring, and the preparation of accountable financial reports (Narsa et al., 2012).

The lack of digital literacy further exacerbates these financial management problems. Although several digital bookkeeping applications, such as BukuWarung, have been widely introduced, not all MSME actors have the confidence or skills to operate them. This reliance on manual systems, which are inefficient and prone to errors, increases the risk of data loss and inaccurate information (Ariningtyas & Purnamawati, 2025). These weaknesses ultimately increase the likelihood of business failure due to misinterpreted cash flow conditions, unmonitored expenses, or mismatches between sales and inventory (Fransiska et al., 2021). Therefore, the gap between existing digital financial tools and the actual ability of MSMEs to implement them remains wide.

From the perspective of gap analysis, previous community service activities generally focused either on financial literacy alone or on introducing digital applications without integrating them with structured financial training. Few programs have combined both aspects, financial literacy and hands-on training in digital bookkeeping, in a way that is practical, contextual, and directly applicable to daily business operations. This gap highlights the novelty and urgency of the present program, which aims to bridge MSMEs' financial literacy deficits while simultaneously equipping them with concrete digital skills.

Based on these conditions, the community service program to be implemented in Kedungkandang District is highly relevant. As evidenced by Bidasari et al. (2023), financial and digital literacy significantly support MSME performance. Therefore, training that integrates basic financial knowledge with the practical use of digital financial applications becomes an essential need. This program is expected to enable MSME actors to manage finances more modernly, efficiently, and accurately, thereby reducing risks of business failure and increasing their competitiveness. Strengthening both financial and digital capabilities will also support MSMEs in contributing more effectively to regional and national economic development.

## II. **PROBLEM STATEMENT AND OBJECTIVES**

The problem statement in this community service program stems from the main challenges faced by MSME actors, namely the limited understanding and skills in managing business finances in a proper and structured manner. Many business owners have not yet fully realized the importance of transaction recording and the preparation of accurate financial reports, resulting in financial conditions that are often unclear and difficult to monitor. This situation leads to business decision-making being carried out without adequate information as a foundation. Apart from that, low financial literacy awareness also causes errors in financial planning, which has implications for obstacles to improving the welfare of MSME players (Hasibuan & Pratiwi, 2021). Therefore, the problems identified in this program are not merely related to the technical aspect of record-keeping, but also to raising the awareness and understanding of MSME actors regarding the urgency of financial reports as one of the key instruments in ensuring business sustainability.

In addition, another challenge that emerges is the limited practical skills of MSME actors in utilizing digital technology, particularly the financial applications that are now widely available. According to Firmansyah et al. (2022), all aspects of life, including the economy, have been affected by the Internet of Things (IoT). Although various financial recording and reporting applications have been developed to assist business owners, in practice, not all MSME actors are able to operate and optimize them. Low levels of digital literacy cause most entrepreneurs to continue relying on manual methods, which are inefficient and prone to error. Apart from that, recording finances manually can also increase other risks such as lost or damaged data and errors in inputting information (Ariningtyas & Purnamawati, 2025). Thus, one of the main focuses of this program is to provide practical skills tailored to their needs, so that MSME actors not only recognize the benefits of digital financial technology but are also able to apply it in their daily business operations.

Furthermore, the weakness of financial management systems that are performed manually and irregularly increases the risk of business failure (Fransiska et al., 2021). Without adequate records and reports, MSME actors find it difficult to recognize early signs of financial problems, such as declining cash flow, escalating costs, or imbalances between inventory and sales. These conditions often lead to losses that could actually be prevented if a more structured financial system were in place. Therefore, the problem formulation raised in this program also includes efforts to minimize potential business failures by equipping MSME actors with stronger managerial and financial skills.

Based on this problem statement, the objectives of the community service program are designed comprehensively. First, the program aims to improve the financial literacy of MSME actors so that they develop a deeper understanding of the importance of financial reporting in business management. Second, the program seeks to provide practical training oriented toward the use of digital financial applications, with the

expectation that these skills can be directly applied in daily operations. Third, the program is intended to encourage MSME actors to manage their finances in a more structured, efficient, and accountable manner, thereby reducing the risk of business failure and enhancing their competitiveness in an increasingly tight market. Thus, this community service activity is expected not only to serve as a solution to the current problems faced by MSMEs but also to become a strategic step in strengthening the local economic foundation through the empowerment of small and medium enterprises.

### III. METHODS

The method used in this community service program was the service learning approach, which integrates academic learning with real community needs and enables reflection on the outcomes of activities conducted within the community (Bawole, 2017). This approach was chosen because it provides a reciprocal benefit for both program implementers and participants, while ensuring that the intervention conducted is grounded in empirical needs identified in the field. In accordance with Tarantang et al. (2022), the service learning framework in this program consisted of three interconnected stages: preparation, implementation, and reflection.

To provide a clear methodological structure, the stages of the program are summarized in Table 1, which outlines the sequence of activities, expected outputs, and instruments used:

Table 1. Program Stages and Descriptions

Stage	Activities	Output	Instrument Used
<b>Preparation</b>	Field observations, interviews, identification of MSME financial problems	Needs assessment & training module design	Interview guide, observation checklist
<b>Implementation (Service)</b>	Financial literacy delivery, practice using BukuWarung application, discussion sessions	Increased literacy and digital practice skills	Training module, BukuWarung app, projector, handout
<b>Reflection &amp; Evaluation</b>	Simulation assessment, follow-up interviews, evaluation of learning outcomes	Evaluation of effectiveness & improvement areas	Evaluation rubric, simulation worksheet, interview notes

During the preparation stage, the team conducted field observations and interviews with MSME actors in the Sawojajar and Madyopuro Sub-districts, Kedungkandang District, Malang City. These activities aimed to identify common financial management problems, including weaknesses in routine transaction recording, limited understanding of basic accounting principles, and low digital literacy. Findings from this stage served as the basis for developing training modules, handouts, and presentation materials tailored to the needs of MSME participants. Several instruments were used in this stage, including observation checklists and interview guides, to ensure that data collection was systematic and consistent.

In the implementation stage, the training was conducted offline and involved both theoretical and practical components. Participants first received financial literacy material related to the importance of accurate financial reporting for business sustainability. This was followed by hands-on practice using the BukuWarung digital financial application. As noted by Rahayu (2021), digital financial applications are capable of facilitating transaction recording, inventory monitoring, and the generation of financial reports efficiently. During the training, participants were guided on how to record sales, purchases, and inventory changes using the application. The instruments used in this stage included the financial literacy training module, projectors for material delivery, handouts summarizing key concepts, and smartphones equipped with the BukuWarung application. To reinforce understanding, simulations were conducted so participants could input real or sample business transactions and generate simple financial records independently.



Figure 1. Introduction of BukuWarung Application

The reflection and evaluation stage was carried out through structured assessments to determine the effectiveness of the training program. Evaluation was conducted using both quantitative and qualitative techniques. Quantitatively, participants' ability to operate the BukuWarung application and record financial transactions was assessed using a scoring rubric that measured accuracy, completeness, and navigation ability. Simulation worksheets were used to capture participants' performance in executing tasks such as transaction entry and report generation. Qualitatively, follow-up interviews were conducted to gather insights into participants' understanding of financial literacy concepts, their readiness to apply digital bookkeeping in daily operations, and any challenges encountered during practice. Observation notes taken during the training were also analyzed to identify engagement levels, responsiveness, and problem-solving behaviors. These combined evaluation techniques allowed for a comprehensive analysis of participants' learning outcomes and areas requiring further mentoring.

#### IV. RESULTS AND DISCUSSION

This community service program, which involved 15 MSME actors in Malang City, was carried out in August 2025 through offline training sessions and practical simulations using the BukuWarung application. Participants came from various business sectors such as trade, culinary, and services. The overall objective of this program was to strengthen financial literacy as well as digital bookkeeping skills among local MSME actors, an effort that is aligned with the increasing demand for digital adoption in business management (Rosa et al., 2022).

Before the training began, participants were asked to complete a short assessment to evaluate their initial understanding of basic financial literacy and digital bookkeeping. The pre-training assessment showed an average score of 42%, indicating low prior exposure to structured financial reporting. Following the training and simulation sessions, participants completed a post-assessment, and the average score increased to 81%, showing a 39% improvement in financial literacy and digital recording ability. This quantitative increase confirms that the training successfully enhanced participants' understanding and ability to apply financial concepts and digital tools in practice.

During the initial literacy session, participants demonstrated a high level of engagement when introduced to the concepts of structured financial recording. This was reflected in active discussions and questions regarding cash-flow monitoring, inventory reconciliation, and daily transaction management, issues that have been reported as common challenges in MSMEs (Harahap, 2020). The facilitator highlighted that financial statements function as a "business compass," a metaphor that resonated strongly with participants and stimulated deeper reflection on their business practices.



Figure 2. Documentation of community engagement activities

The practical simulation of the BukuWarung application was a critical component of this program. Participants practiced recording sales, purchases, and inventory-related transactions using their own smartphones. Initially, only 20% of participants were able to navigate the application independently, reflecting findings from previous studies showing that MSMEs often struggle with digital adaptation (Rosa et al., 2022). However, by the end of the simulation session, 93% of participants were able to independently input at least three types of transactions, sales, expenses, and inventory adjustments, and generate simple financial summaries. This aligns with studies such as Rahayu (2021), which emphasize the practicality of digital financial applications in increasing MSME efficiency.

From a comparative perspective, the results of this training provide several important contributions relative to previous community service programs. For example, Fransiska et al. (2021) reported that MSMEs guided in the use of digital tools such as BukuKas were able to improve accuracy in bookkeeping, yet still faced challenges in comprehension of financial statement interpretation. Meanwhile, Bidasari et al. (2023) illustrated that financial literacy plays a significant role in enhancing MSME performance, but their intervention focused more on conceptual understanding rather than practical digital skill-building. Compared to these initiatives, the present program integrates both conceptual literacy and digital simulation, thereby addressing a gap identified in the introduction, namely, the lack of programs that combine theoretical financial literacy with contextualized, hands-on digital application training.

This integration is particularly relevant considering the persistent gap between available digital financial tools and MSME readiness to adopt them. While digital applications for MSMEs have become increasingly accessible, many business actors remain unfamiliar with their use due to low digital literacy (Firmansyah et al., 2022). The strong improvement in participants' post-test scores in this program indicates that pairing literacy with direct practice effectively bridges this gap. Additionally, participants' confidence in recording transactions increased significantly; interviews revealed that 12 out of 15 participants expressed readiness to apply digital recording consistently in their daily business operations.

The results of this program also reinforce recent findings in digital MSME empowerment literature. For instance, digital readiness is recognized as a key determinant of MSME resilience and competitiveness in the post-pandemic era (Wahdiniwaty et al., 2022). Similarly, Ariningtyas & Purnamawati (2025) highlight that manual financial recording is prone to data loss and errors, making digital applications a more reliable alternative. Participants' feedback in this program supports these conclusions; several participants noted that digital tools made daily bookkeeping "faster," "clearer," and "less risky," especially regarding missing records.

Despite clear improvements, some challenges remain. Older participants in particular reported difficulty in adapting to smartphone-based applications, consistent with findings by Rosa et al. (2022), which highlight demographic barriers in digital adoption. Furthermore, without consistent practice and reinforcement, the risk of returning to manual bookkeeping persists. Therefore, follow-up mentoring is essential, as emphasized in Fransiska et al. (2021), who found that short-term interventions often fail to create lasting behavioral change without ongoing support.

From an academic standpoint, this program resulted in several outputs, including a draft journal article, a progress report, and plans for dissemination through an international seminar. These outcomes reflect the broader role of academic institutions in contributing to community empowerment through structured, evidence-based interventions.



Figure 3. Group photo with the audience

Overall, the combination of financial literacy enhancement, practical digital application training, and systematic evaluation provides a comprehensive model for MSME empowerment. This integrated approach demonstrates that financial literacy alone is insufficient unless accompanied by practical digital skills that can be directly implemented in daily business operations. As such, this program offers an improved model compared to previous initiatives by addressing the gap between conceptual understanding and practical application, ultimately supporting MSMEs in achieving greater financial accuracy, efficiency, and competitiveness.

#### IV. CONCLUSIONS

This community service program concludes that the integration of financial literacy training with hands-on digital bookkeeping practice effectively enhances MSME actors' ability to manage their business finances in a structured and efficient manner. The overall findings demonstrate meaningful improvements in participants' understanding, skills, and readiness to adopt digital financial applications within their daily operations. Based on the evaluation results, the main conclusions from this activity are as follows:

##### Main Findings

1. The program significantly improved financial literacy among participants, as reflected in the increase in pre- to post-training assessment scores (from 42% to 81%). This indicates that the material delivered, covering the importance of financial reporting and the fundamentals of transaction recording, was well understood and applicable to participants' real business contexts.
2. Participants demonstrated substantial improvement in digital bookkeeping skills, especially in operating the BukuWarung application. If initially only around 20% could navigate the application independently, by the end of the training 93% were able to perform complete transaction input and generate basic financial summaries.
3. The combination of literacy and simulation-based training proved more effective than traditional lecture-based approaches, addressing the gaps identified in previous community service programs that typically focused only on conceptual financial literacy or digital introduction separately. This integrated method reinforces that practical application is essential to strengthening MSMEs' financial capability.
4. Participants showed increased confidence and willingness to implement digital bookkeeping consistently. Follow-up interviews indicated that most participants felt more prepared to adopt digital tools in their daily operations and recognized their benefits for accountability, cash flow monitoring, and inventory control.
5. The program contributed academic outputs, including a progress report, a draft article for publication, and preparations for dissemination at an international seminar, supporting the academic institution's role in community empowerment.

##### Limitations of the Program

Despite the positive outcomes, this program has several limitations that should be acknowledged:

1. The duration of the training was relatively short, making it difficult to ensure long-term behavioral change without continued mentoring. A more extended intervention period may be needed to strengthen habit formation.
2. The number of participants was limited to 15 MSME actors, which restricted the variability of learning responses and the generalizability of results.
3. Digital readiness varied across participants, especially among older participants who required additional time to adapt to smartphone-based bookkeeping applications.
4. The evaluation relied primarily on short-term assessments, which capture immediate improvements but do not measure the sustainability of digital bookkeeping practices over time.

#### V. RECOMMENDATIONS

Based on the limitations identified in this community service program, several targeted recommendations are proposed to improve future activities. The recommendations are as follows:

1. To address the short duration of the training, future programs should extend the length of the intervention and include scheduled follow-up mentoring. Longer and more continuous engagement will help ensure that

- behavioral changes, especially in digital bookkeeping, become more sustainable and habitual among MSME participants.
2. To overcome the limited number of participants, subsequent programs should expand participant recruitment to include a broader range of MSME sectors and demographics. Increasing the scale of participation will enhance the reach of the program and improve the generalizability of outcomes.
  3. To reduce disparities in digital readiness, especially among older or less tech-savvy participants, specialized small-group clinics or one-on-one digital coaching sessions should be integrated into the program design. Tailored assistance will help ensure that all participants can follow the training at an appropriate pace.
  4. To address the short-term nature of the evaluation, future activities should incorporate long-term monitoring through periodic reassessment at three-month or six-month intervals. This will allow implementers to measure whether the improvements observed during training persist over time and to identify areas that require additional support.

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