



## Enhancing MSME Business Sustainability through Simple Accounting Systems after Natural Disasters

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### Abstract

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in local economic recovery after natural disasters; however, their sustainability is often constrained by weak financial management and low accounting literacy. Post-disaster conditions further exacerbate these challenges due to asset losses, unstable cash flows, and limited access to formal financing. This community service program aims to enhance MSME business sustainability by strengthening financial literacy and implementing simple accounting systems in disaster-affected areas. The program was conducted through a structured approach consisting of preparation, training, continuous assistance, and evaluation stages. Training activities focused on basic accounting concepts, daily transaction recording, cash flow management, cost classification, and the separation of personal and business finances, while mentoring supported participants in applying simple bookkeeping practices adapted to their business conditions. The results indicate significant improvements in participants' financial recording skills, financial management practices, and awareness of the importance of systematic bookkeeping. MSMEs that adopted simple accounting systems demonstrated better control over cash flows, clearer profit measurement, and stronger capacity to plan post-disaster recovery. Overall, the program contributes to improving MSME resilience and business sustainability by promoting practical, accessible, and context-appropriate financial management practices in disaster-prone communities.

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## 1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in local economic systems, particularly in developing regions and disaster-prone areas. After natural disasters such as floods, earthquakes, tsunamis, and landslides, MSMEs are among the most severely affected economic actors due to their limited assets, small-scale operations, and strong dependence on local markets [1]. Post-disaster conditions often result in the destruction of production facilities, loss of inventory and working capital, disruption of supply chains, and declining consumer purchasing power [2], [3]. These impacts frequently cause prolonged business interruptions and, in many cases, permanent business closures. Nevertheless, MSMEs remain the backbone of local economic recovery because they are usually the

first sector to restart operations and restore household incomes and employment after disasters [4], [5]. However, the sustainability of MSME recovery is highly dependent on their internal management capacity, especially in the area of financial management.

One of the most fundamental problems faced by MSMEs in post-disaster conditions is weak financial management. Many MSME owners do not apply systematic bookkeeping, fail to separate personal and business finances, and lack a basic understanding of accounting principles [6], [7]. Financial records are often incomplete, inconsistent, or entirely absent, making it difficult for business owners to evaluate performance, control cash flows, and determine actual profit or loss. Post-disaster circumstances further worsen this condition due to the loss of assets, emergency expenditures, declining revenues, and unstable market conditions [8], [9]. Without proper financial documentation, MSMEs face serious barriers in accessing formal financing from banks, cooperatives, and government recovery programs. As a result, many disaster-affected MSMEs depend on informal loans with high interest and risk, which undermines their long-term financial stability.

Low levels of financial literacy further weaken MSME resilience in disaster-prone areas. Financial literacy is closely related to an individual's ability to manage savings, debt, investment, and business risks effectively [10], [11]. In the absence of adequate financial knowledge, MSME owners often misuse recovery funds, mix business capital with household consumption, and fail to plan for future business development. This condition reduces the effectiveness of post-disaster assistance programs and limits the sustainability of business recovery. Weak financial management does not only affect individual enterprises but also weakens the overall resilience of the local economy, as MSMEs collectively constitute the primary source of employment and income in many disaster-affected communities.

The implementation of simple accounting systems offers a practical and accessible solution to improve MSME financial management in post-disaster environments. Simple accounting refers to basic and easy-to-apply financial recording practices, including daily cash inflows and outflows, simple profit-loss calculations, asset recording, and basic budgeting [12], [13]. For MSMEs with limited educational backgrounds and technological capacities, simple accounting is more realistic and sustainable than complex formal accounting standards. The adoption of simple accounting systems enables MSMEs to monitor cash flows, control costs, assess financial performance, and make more informed business decisions [7]. In the post-disaster context, proper financial records also serve as critical documentation for accessing government assistance, bank loans, CSR funding, and insurance claims [14]. Moreover, simple accounting strengthens transparency and accountability, thereby increasing trust between MSMEs and external stakeholders such as financial institutions, donors, and business partners.

From a sustainability perspective, financial discipline supported by simple accounting contributes directly to business continuity and long-term growth [15]. MSMEs that maintain consistent financial records are better prepared to withstand economic shocks, manage risks, and adapt to changing market conditions. In disaster-prone communities, this financial resilience becomes a crucial foundation for sustaining livelihoods and supporting inclusive local economic recovery. Based on these conditions, this community service program aims to enhance MSME business sustainability through the implementation of simple accounting systems in post-disaster areas. The main objectives of the program are to improve the financial literacy and basic accounting skills of disaster-affected MSME owners, to introduce practical and user-friendly simple accounting tools suitable for small-scale businesses, and to assist MSMEs in applying systematic financial recording to support both short-term recovery and long-term sustainability. Academically, this program contributes to applied accounting and community development studies, while practically it offers an implementable empowerment model for universities, local governments, and development institutions in strengthening MSME resilience in disaster-prone regions.

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## **2. Methods of Implementation**

This article adopts a qualitative descriptive approach oriented toward community service activities to strengthen financial literacy and simple accounting practices among Micro, Small, and Medium

Enterprises (MSMEs) in post-disaster contexts. The methodological framework follows the analytical structure used in previous community-based MSME studies, emphasizing participatory engagement, practical intervention, and reflective evaluation

Primary data were obtained through direct field observations, training sessions, and mentoring activities involving MSME actors in disaster-affected communities. These activities focused on introducing basic financial literacy concepts, simple bookkeeping techniques, cash flow recording, cost classification, and the separation of personal and business finances. Secondary data were collected from relevant academic literature, government reports, and institutional guidelines related to MSME development, financial literacy, and post-disaster economic recovery.

The implementation of the community service program was conducted in four main stages. First, a preliminary assessment was carried out to identify MSMEs' financial management conditions and key challenges following disaster events. Second, training sessions were conducted to deliver theoretical and practical materials on simple accounting systems tailored to MSME capacities. Third, continuous mentoring was provided to assist participants in applying bookkeeping practices to their daily business activities. Fourth, an evaluation stage was implemented to assess changes in participants' financial recording skills, understanding of cash flow management, and awareness of systematic financial management.

Data analysis was performed qualitatively by comparing MSME financial management practices before and after the intervention. To ensure data validity, triangulation was applied by cross-checking observations, participant feedback, and training outcomes. This methodological approach enables a comprehensive understanding of how simple accounting systems contribute to enhancing MSME resilience and business sustainability in post-disaster settings.

**Table 1.** Methodological Framework and Data Sources of the Community Service Program

Stage	Activity	Data Source	Purpose in Article 2
Preliminary Assessment	Initial field observation and informal interviews with MSME actors	MSME participants, field notes	To identify post-disaster financial management conditions and key bookkeeping challenges
Training Implementation	Financial literacy and simple accounting training sessions	Training materials, attendance records	To improve participants' understanding of basic accounting concepts and cash flow management
Mentoring and Assistance	Continuous mentoring and practical bookkeeping guidance	Mentoring reports, MSME transaction records	To assist MSMEs in applying simple accounting systems in daily business activities
Evaluation	Observation, discussion, and comparison before–after intervention	Evaluation notes, participant feedback	To assess improvements in financial recording skills and business sustainability awareness
Literature Support	Review of academic and institutional references	Journals, government and institutional reports	To strengthen the conceptual and empirical foundation of the PKM article

### **3. Implementation of the Program**

#### **3.1 Description of Training Activities**

The training activities were designed to improve the financial management capabilities of MSME participants through structured and practice-oriented learning. The training materials covered basic accounting concepts, daily transaction recording, cash flow management, cost and revenue classification, preparation of simple financial statements, and the separation of personal and business finances. The learning process applied participatory training methods such as interactive lectures, group discussions, case studies, and hands-on practice using participants' real business transactions. This approach is consistent with the adult learning (andragogy) framework, which emphasizes problem-based and experiential learning for effective capacity development [7], [16]. Training modules and practical worksheets were provided to support continuous learning after the sessions. Previous studies confirm that structured financial training significantly improves MSMEs' managerial skills and financial discipline [17].

#### **3.2 Assistance in Applying Simple Accounting Systems**

In addition to formal training, continuous assistance was provided to ensure the effective application of simple accounting systems by MSME participants. The assistance was implemented through regular field visits and scheduled consultations focusing on the application of daily bookkeeping, classification of expenses and revenues, and preparation of simple financial reports. Participants were guided in the use of manual cash books, spreadsheet-based recording formats, and simple accounting applications according to their level of digital literacy. This mentoring approach aligns with the findings of [18], who emphasized that direct assistance is essential to ensure the sustainability of bookkeeping practices among MSMEs. Moreover, Bank Indonesia (2021) highlights that post-training assistance is a critical factor in strengthening MSME financial governance and improving business resilience through accurate financial information. The assistance process also helped reduce recording errors and increased participants' confidence in managing their own financial data for decision-making.

#### **3.3 Participation and Response of MSME Participants**

The level of MSME participation during the program implementation demonstrated a positive and encouraging response. This was reflected in the relatively high attendance during training sessions, active involvement in discussions, and strong engagement during practical bookkeeping exercises. Participants expressed that the program was highly relevant to their immediate business needs, particularly in understanding cash flow control, cost efficiency, and profit measurement. According to [19], increased financial literacy significantly enhances individuals' ability to make sound financial decisions, which was also observed in this program. The participants' growing awareness of the importance of systematic financial records supports the argument of financial reporting is a fundamental element of sustainable MSME development [20], [21]. Despite different levels of educational background and business experience, most participants showed a positive learning attitude and strong motivation to apply the knowledge gained.

#### **3.4 Obstacles during Implementation**

Several obstacles were encountered during the implementation of the program. One of the main challenges was the low level of financial literacy among some MSME participants, which required repeated explanations of basic accounting concepts and prolonged mentoring time. This condition is consistent with the findings of Tambunan (2012), who noted that financial and managerial limitations remain a major structural weakness of Indonesian MSMEs. Time constraints due to participants' operational business activities also affected the consistency of attendance in training and mentoring sessions. In addition, limited digital literacy among some participants constrained the adoption of digital bookkeeping tools, as also emphasized by [22], [23]. From a technical perspective, infrastructure limitations and the diverse characteristics of MSMEs created additional implementation challenges. Nevertheless, these obstacles were mitigated through flexible training schedules, simplified learning materials, and adaptive mentoring strategies tailored to participants' real business conditions.

During the implementation of the program, several obstacles were encountered that affected both the effectiveness and the intensity of training and mentoring activities. One of the main challenges was the low level of financial literacy among some MSME participants, which required repeated explanations and longer mentoring periods to ensure proper understanding of basic accounting concepts. In addition, time constraints due to daily business operations limited the availability of participants to fully attend all training and assistance sessions. Another significant challenge was the uneven level of digital literacy, particularly among participants who were not familiar with using digital bookkeeping tools. Infrastructure limitations, such as inadequate facilities and limited access to stable internet connections, also hindered the optimization of mentoring activities. These constraints are consistent with previous studies which state that MSMEs often face structural limitations related to human resources, technology adoption, and financial management capacity [22], [24]. To clearly classify these obstacles, the implementation barriers are summarized in Table below.

**Table 2.** Classification of Obstacles during Program Implementation

Category of Obstacles	Forms of Obstacles	Impact on Program Implementation	Mitigation Efforts
Human Resources (HR)	Low financial literacy, varied educational background	Slow comprehension of accounting materials	Repetitive explanation, simplified modules
Time Constraints	Participants busy with daily business operations	Irregular attendance during training and mentoring	Flexible mentoring schedules
Technology	Low digital literacy, limited use of bookkeeping apps	Limited adoption of digital recording	Use of manual bookkeeping first
Infrastructure	Limited facilities, unstable internet access	Ineffective online mentoring sessions	More face-to-face assistance
Business Conditions	Diverse business scales and sectors	Different mentoring needs among participants	Customized mentoring approach

Sources: [22], [24]

**Table 2** presents the classification of obstacles encountered during the implementation of the MSME financial training and assistance program. The obstacles are grouped into five main categories, namely human resources, time constraints, technology, infrastructure, and business conditions. Each category is accompanied by its specific forms of obstacles, their impacts on program implementation, and the corresponding mitigation efforts applied. The table indicates that limitations in human resources and time availability were the most dominant challenges, affecting participants' understanding and consistency in applying financial recording practices. Meanwhile, technology and infrastructure constraints limited the optimal use of digital bookkeeping tools, which were addressed through alternative manual recording and direct assistance. Overall, the table demonstrates that the barriers were multidimensional and required adaptive and integrated mitigation strategies.

## 4. Result & Discussion

### 4.1 Improvement in MSME Financial Recording Skills

The results of the program implementation indicate a significant improvement in the financial recording skills of MSME participants. Prior to the program, most participants did not maintain systematic financial records and relied mainly on memory or informal notes for tracking transactions. After the training and assistance activities, the majority of participants were able to record daily transactions more consistently using simple bookkeeping formats. Participants demonstrated improved understanding of transaction classification, separation between personal and business finances, and basic profit calculation. This finding supports the argument of [25] that financial literacy interventions significantly enhance individuals' ability to manage financial information effectively. Furthermore, [26] also



emphasize that continuous mentoring plays a key role in strengthening bookkeeping discipline among MSMEs. The improvement in recording skills observed in this program reflects the effectiveness of combining structured training with practical assistance in fostering sustainable financial administration practices.

#### 4.2 Changes in Financial Management Practices

The improvement in financial recording skills subsequently led to positive changes in participants' financial management practices. MSMEs began to apply more structured approaches in managing cash flow, budgeting operational expenses, and monitoring business profitability. Several participants reported that they were now able to distinguish between fixed and variable costs, calculate production costs more accurately, and determine selling prices based on more reliable financial data. This shift aligns with the theoretical framework presented by [27], who states that accurate financial statements serve as a fundamental tool for decision-making and performance evaluation. Moreover, [21], [22] highlight that sound financial management practices are essential for improving MSME access to financing and strengthening business resilience. The findings of this program indicate that improved financial literacy and bookkeeping skills translate directly into better financial governance at the enterprise level.

#### 4.3 Impact on Business Sustainability after Disasters

The program also demonstrated a positive impact on the sustainability of MSMEs, particularly in post-disaster business recovery contexts. MSMEs that adopted proper financial recording and management practices showed greater capacity to assess business losses, plan recovery strategies, and manage limited resources more effectively after disruptive events. Accurate financial records enabled participants to identify critical cost components, prioritize essential expenditures, and evaluate business feasibility during recovery phases. This finding is consistent with the study of [7], which emphasizes that financial preparedness is a key factor in enhancing MSME resilience to economic and environmental shocks. Additionally, Bank Indonesia (2021) notes that MSMEs with strong financial governance tend to recover faster after crises due to better access to financial support and more credible financial documentation. Therefore, the results of this study suggest that strengthening financial literacy and accounting practices contributes not only to operational efficiency but also to long-term business sustainability in post-disaster conditions.

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## 5. Conclusion and Recommendations

### 5.1 Conclusions of the Community Service Program

Based on the implementation and evaluation results, this community service program has been proven to effectively improve the financial recording skills and financial management practices of MSME participants. The combination of structured training and continuous assistance successfully enhanced participants' understanding of basic accounting, daily bookkeeping, and simple financial reporting. The program also contributed to increased awareness of the importance of separating personal and business finances, which is a fundamental principle of sound financial management. Furthermore, the results demonstrate that improved financial literacy plays a significant role in strengthening MSMEs' business performance and resilience, especially in post-disaster recovery contexts. Therefore, it can be concluded that this program achieved its main objectives in strengthening MSME financial governance and supporting sustainable business development.

### 5.2 Practical Recommendations for MSMEs

Based on the findings, several practical recommendations can be proposed for MSMEs to ensure the sustainability of the improvements achieved. First, MSMEs are encouraged to consistently implement daily financial recording using simple and standardized bookkeeping formats to maintain accurate financial information (Mulyadi, 2016; Fitriani & Hadi, 2018). Second, business owners should regularly evaluate their financial performance through simple income statements and cash flow analysis to support strategic decision-making (Kasmir, 2019). Third, MSMEs are advised to gradually adopt digital

bookkeeping tools to improve efficiency and data security, in line with the national agenda on MSME digitalization (Bank Indonesia, 2021). In addition, MSME actors should actively participate in further training or mentoring programs to continuously strengthen their financial literacy and managerial capacity.

### 5.3 Program Sustainability and Follow-Up Plan

To ensure the long-term impact of the program, a structured sustainability and follow-up plan must be implemented. Continuous mentoring and periodic monitoring are recommended to maintain participants' consistency in applying proper financial recording practices. Collaboration with local government offices, universities, and financial institutions should be strengthened to provide ongoing technical assistance, access to financing, and business development support. In addition, the establishment of MSME learning communities or peer-support groups is recommended to facilitate knowledge sharing and collective problem-solving among participants. The program emphasize that sustainable MSME development requires integrated support systems involving multiple stakeholders. Therefore, the continuity of this program should be supported through institutional partnerships, periodic evaluation, and the replication of similar programs in other regions with comparable socio-economic conditions.

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