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Enhancing Farmers' Group Digital Financial Literacy Through Record-Keeping Application Training

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ABSTRACT

Digital transformation offers farmer groups new ways to strengthen administrative governance, yet financial records are often kept manually and without standardized procedures. This community service program aimed to improve farmer groups' digital financial literacy through training on the Farmers' Budgeting System Application and to examine its initial effects on record-keeping orderliness, transparency, and the efficiency of cash recapitulation. Using a pre-experimental one-group pre-test–post-test design, we conducted a participatory, hands-on training session with 11 participants in a face-to-face setting at Politeknik Jambi. Data were collected via a pre/post knowledge test, an operational skills checklist, and a perception questionnaire. Participants' mean knowledge score increased from 46.55 (pre-test) to 82.45 (post-test), and most participants mastered core functions for entering income and expense transactions and generating summary reports for recapitulation. Early outcomes included faster administration, neater and better-documented records, and more transparent cash reporting. We conclude that application-based training can rapidly raise digital financial literacy and improve basic financial governance in farmer groups. This program contributes a practical, replicable training model and preliminary evidence supporting the use of digital record-keeping tools to strengthen community-based financial management.

ARTICLE INFORMATION

Keywords:
Application Training; Digital Financial Literacy; Farmers' Group; Financial Governance; Financial Record-Keeping

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INTRODUCTION

Digital transformation is increasingly influencing various sectors of life, including agriculture, which has long been associated with field-based activities and experience-driven management (Hizazi et al., 2025). Advances in information technology present new opportunities to improve efficiency, accuracy, and transparency in agricultural activities, not only in production, but also in farm business management and institutional administration. In this context, farmers' groups play a strategic role as community-based farmer organizations that coordinate cultivation activities, facilitate the procurement of production inputs, manage member contributions, regulate the use of group cash, and serve as implementing partners for government programs and collaborations with the private sector (Masdah et al., 2025). To ensure these institutional functions operate optimally, orderly administrative management and an accountable financial system are essential (Manurung & Mesra, 2025).

Financial record-keeping is a critical component of farmers' group governance because it provides a basis for understanding cash flows, tracking income and expenditure, and planning group activities (Firnanda et al., 2025). Proper record-keeping helps both administrators and members clearly understand the group's financial position, avoid spending errors, and strengthen trust among members (Ramadani & Sani, 2025). In addition, well-organized and structured financial records are prerequisites in many capacity-building programs, equipment and input assistance schemes, and funding support initiatives, as supporting institutions typically require adequate reports or administrative evidence (Suryani et al., 2025). Therefore, the ability to manage financial records is not merely an administrative necessity but also a key factor in sustaining farmers' group institutions and enhancing organizational capacity (Porawati et al., 2025).

However, field realities indicate that financial management practices in many farmers' groups remain simple and manual. Income and expenditure transactions are often recorded in notebooks without standardized formats; recording is not routine, and recapitulation is performed only when needed (Candra et al., 2024). Such conditions can lead to various problems, including scattered transaction data, difficulty tracing transaction histories, inconsistencies between records held by administrators and members, and delays in report preparation (Sibuea & Alfarisi, 2025). In some cases, administrators face challenges when preparing accountability reports because data are not properly archived or there is no easily readable summary. This may result in inefficiencies in decision-making, for example, when determining purchasing priorities for production inputs, allocating proceeds from group activities, or planning annual work programs. Moreover, poorly organized record-keeping can reduce transparency and erode members' trust in the group's cash management (Triatna et al., 2025).

On the other hand, smartphone use and internet access among communities, including farmers, continue to increase. Digital devices that were once considered distant from agricultural activities are now used for communication, product marketing, and accessing weather and price information (Handoko et al., 2024). This development creates an opportunity to introduce financial record-keeping applications as a supporting tool for farmers' group administration. Such applications generally offer relatively simple yet useful features, such as daily income and expense recording, transaction categorization, automatic balance calculation, periodic report summaries, and safer data storage compared to manual records. When used consistently, these applications can help administrators complete bookkeeping more quickly, reduce calculation errors, and facilitate the preparation of accountability reports (Zuo et al., 2024).

Nevertheless, implementing financial record-keeping applications does not always run smoothly. Common barriers include limited digital literacy, differences in educational levels and technological experience among members, and minimal assistance during the transition from manual to digital systems. In addition, time is needed for adjustment so that application use can become a habit and continue in practice (Saputra et al., 2025). Other challenges include device limitations, such as phone memory, battery life, or unstable internet access, as well as group working patterns that still rely on face-to-face communication, meaning that digital record-keeping needs to be adapted to organizational routines (Pradnyana et al., 2023).

As a basis for the training, a preliminary needs assessment was conducted using a knowledge pre-test before the activity. The pre-test results (n = 11) showed a low average score of 46.55, indicating limited understanding of basic financial record-keeping concepts and the workflow of digital record-keeping. This initial finding suggests that the main gap lies not only in the absence of standardized procedures, but also in the limited ability to translate record-keeping principles into routine digital bookkeeping practices. Therefore, training is needed to strengthen both conceptual understanding and operational skills in the use of digital tools for group financial management.

Therefore, this community service program aims to improve the digital financial literacy of farmer groups through hands-on training in the use of the Farmers' Budgeting System Application. In this program, digital financial literacy refers not only to the ability to use the application but also to an understanding of cash flow management, maintaining discipline in transaction recording, categorizing transactions according to administrative needs, and interpreting summary reports for evaluation.

METHOD

This community service activity employed a pre-experimental method using a one-group pretest-posttest approach to measure change by comparing outcomes in the same group before and after the intervention, combined with participatory methods and hands-on training (Blaine, 2023). The participatory approach involved participants in agreeing on the group's financial recording needs, identifying the most frequent types of transactions, and determining relevant recording categories before application practice began. This aligns with the principles of participatory action research, which emphasize jointly formulating problems to determine appropriate solutions for a group (Chevalier & Buckles, 2019). The training focused on improving digital financial literacy through an understanding of basic bookkeeping concepts (income, expenses, balances, and transaction categories) and practical skills in using the Farmers' Budgeting System Application. The training was conducted face-to-face in the Seminar Room of Politeknik Jambi, with the main activities consisting of demonstrations and independent practice using each participant's smartphone.

A total of 11 participants took part in this activity, consisting of farmers' group administrators and members involved in administration and group cash management. All participants attended the full series of activities, starting from the initial assessment (pre-test), the core training session, transaction input practice, and concluding with the final evaluation (post-test and feedback). To support sustainability, participants were also encouraged to assign at least one record-keeping role as the primary user of the application in the group's recording practices.

The procedure was carried out in several stages. The first stage was orientation and initial identification, which included a brief discussion of existing financial recording practices, common transaction types, and frequently encountered problems. The second stage was the initial measurement (pre-test) to assess participants' baseline abilities. The third stage was the core training, which began with reinforcement of basic financial recording concepts, followed by a demonstration of installation and an introduction to the menu of the Farmers' Budgeting System Application, then direct practice in setting transaction categories, entering income, entering expenses, adding transaction descriptions, and checking balances. The fourth stage was case-based independent practice, in which participants entered sample transactions adjusted to the group's activities, such as contributions, operational costs, and input purchases, until they were able to display summaries and simple recaps. The fifth stage was the final evaluation, which included the post-test, completion of the perception questionnaire, and a discussion to reach agreement on implementation within the group's administrative routines.

RESULTS AND DISCUSSION

The results are organized into documentation of application use, evaluation of knowledge improvement through pre-test and post-test, assessment of operational skills using a checklist, and participants' feedback on the ease and benefits of the application. To provide context before presenting the evaluation results, the section begins by showing the application's home page, which serves as an overview of the interface and the starting point for the digital record-keeping process practiced during the activity.

The pre-test and post-test aimed to determine the effectiveness of the training and to compare participants' understanding before and after the training. Comparing pre-test and post-test results, observed changes in scores can serve as a benchmark for learning achievement and a basis for evaluating the initial impact of the training on participants' digital financial literacy.

The evaluation results indicated that the Farmer Budgeting System Application training had a positive impact on participants' understanding of the basic concepts of financial recording and digital record-keeping workflow. Based on the pre-test and post-test results (n = 11), the average pre-test score was 46.55, while the average post-test score increased to 82.45. This average score increase represents a significant improvement of approximately 77.15% compared to the baseline, indicating that participants not only gained new knowledge but also improved their understanding of record-keeping concepts through practical use of the application. During the training, participants learned to differentiate between transactions based on their types, namely income and expenses, thereby eliminating mismatched records and enabling more accurate cash balance monitoring. Furthermore, participants became more skilled at categorizing transactions into groups that meet the organization's administrative needs, such as member contributions, production input purchases, operational costs, and business income.

This resulted in better-organized transaction data and easier tracking when recapitulation or accountability reports were required. In other words, these results confirm that the training successfully connected technical application skills with a conceptual understanding of more transparent and accountable financial governance (Deswita & Aznuriyandi, 2025; Santoso et al., 2024). Furthermore, analysis of individual score trends showed that nearly all participants increased their scores. This pattern is important because it indicates that the training's impact was relatively even and not concentrated in just a few participants (Nurmala et al., 2024). Figure 1 shows changes in pre-test and post-test scores by participant, illustrating the trend of individual improvement following the training and hands-on practice sessions.

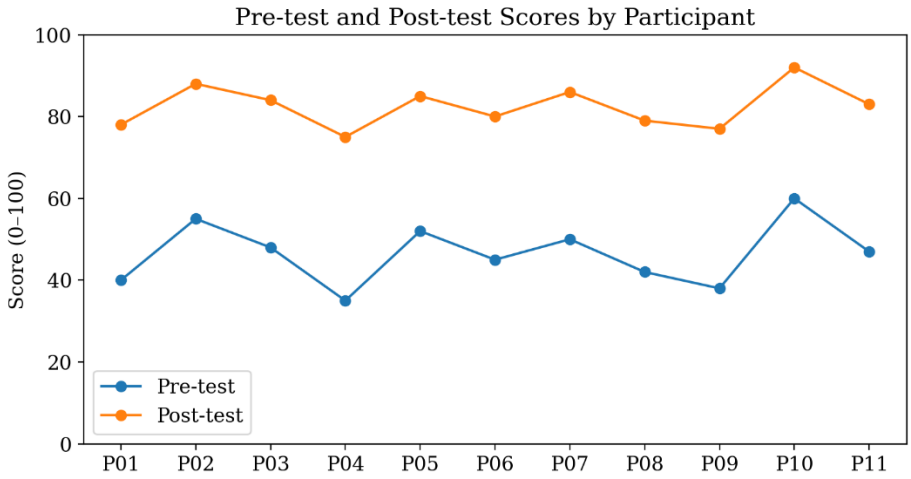

Figure 1. Pre-test and Post-test Scores by Participant

Figure 1 shows an increase in participants' understanding before and after the training. This supports the assumption that the hands-on training method is effective, as participants not only receive theoretical material but also directly practice using the application. Thus, the concept of "organized and accountable record-keeping" becomes a direct experience of the training outcomes.

Increased knowledge is generally influenced by two factors: the appropriateness of the material and the learning method (Umbara et al., 2020; Nilayuniarti & Putra, 2020). The appropriateness of the material is reflected in the use of direct case studies from farmer groups (member contributions,

production input purchases, operational costs), making it easier for participants to connect the material to their daily needs. From a methodological perspective, hands-on practice helps participants build "procedural memory," that is, the ability to carry out the steps of using the application without relying solely on a guide. Furthermore, face-to-face training allows direct interaction between the instructor and participants, providing rapid feedback that reinforces understanding (Shobaruddin, 2020). In addition to increased knowledge, the success of the training is also reflected in the achievement of operational skills, which are assessed using a checklist. The checklist results indicate that participants have mastered basic application skills. Figure 2 shows operational skill achievement as measured by the checklist.

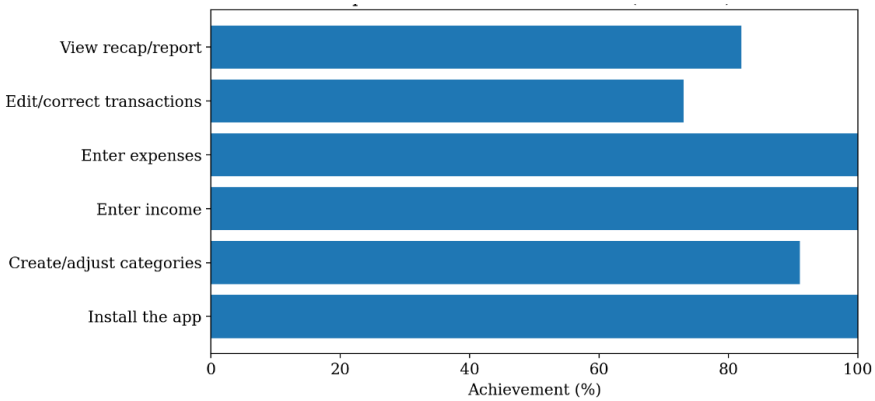

Figure 2. Operational Skill Achievement

Evaluation results indicate that participants relatively quickly mastered the key skills most needed for daily financial record-keeping, particularly entering income and expense transactions. These findings indicate that the Farmer Budgeting System Application interface is relatively easy to understand for basic needs, and the hands-on training method helped participants develop simple work habits. This skill is crucial because the quality of group bookkeeping depends on consistent record-keeping. If the application is difficult or time-consuming to use, participants tend to delay recording, which can result in forgotten or incomplete data or in records being entered only close to reporting deadlines. In other words, participants' success in basic input is a strong indicator that the application can be used as a routine tool for group cash management.

However, transaction correction skills, such as using the edit and delete features, remained low, indicating that some participants still face challenges with steps considered "risky" for data integrity. This situation suggests that training should not stop at the ability to record transactions; it should also ensure that participants can maintain data quality through verification and correction processes.

Therefore, ongoing mentoring and monitoring are necessary after the training is completed (Hermawan et al., 2025). This mentoring and monitoring activity will be carried out directly by the team at the partner location to review the reports prepared by the groups. This activity is scheduled to take place one month after the training, to identify potential errors in the reporting and recording processes within the application and assess the groups' consistency in implementing the digital recording system (Leksono, 2025; Rochana et al., 2025). A perception questionnaire was then conducted to determine participants' overall views of the application. The results of the perception questionnaire indicated that participants viewed the application and training positively. Figure 3 displays participants' perceptions of the application and training, including ease of use, perceived benefits, and intention to continue using the application.

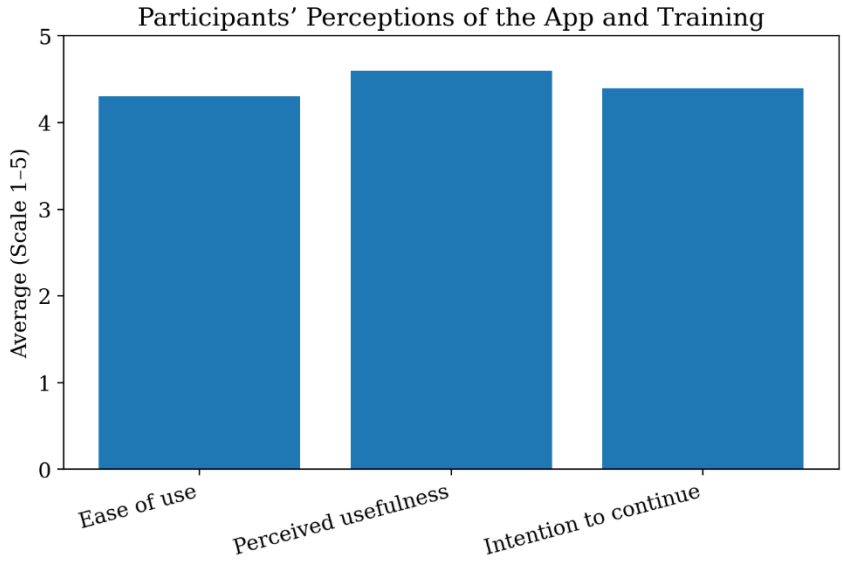

Figure 3. Participants' Perceptions of the App and Training

Positive perceptions generally emerge when participants experience tangible, immediate benefits, such as faster cash recapture, neater records, and easier transaction tracking. These benefits not only improve farmers' work efficiency but also have the potential to strengthen organizational dynamics. Greater transparency, for example by presenting cash reports during meetings, can increase member trust and reduce the potential for internal conflict regarding the use of funds. Furthermore, good financial reporting can improve group readiness when reports are needed for assistance programs, partnerships, or other financing opportunities. To ensure that record-keeping is carried out routinely and consistently by farmers, a regular meeting schedule should be established and a single person responsible for it appointed (Arumsari & Agustim, 2025).

Overall, the Farmer Budgeting System Application training demonstrated a clear initial impact on strengthening group financial governance, as observed changes extended beyond participants' technical ability to enter transactions to include how the group managed administration and interpreted financial reports as part of organizational control. In terms of administrative efficiency, this application helps group members expedite the recapitulation process by automatically summarizing recorded transactions for specific periods, such as daily, weekly, or monthly (Nurhasanah et al., 2025; Kurniawan, 2023). This differs from manual methods, which generally require group members to add up transactions individually and rewrite the records in a summary format. This lightens the workload for group members and shortens the time required to prepare reports. Furthermore, group financial reports are more organized, simplifying the process of evaluating fund usage.

Furthermore, this application also increases transparency and accountability in group financial reports (Susano & Rachmawati, 2024; Dwiyana et al., 2025). The summary reports generated by the application make cash information easier to understand and communicate to members, both during routine meetings and when members need clarification on income and expenses. Increased transparency can strengthen trust among members, particularly in activities involving contributions, collective fund management, or collective purchasing of production inputs, as members can view clearer and more concise information (Sahabuddin et al., 2024).

To ensure that these activities continue sustainably and that the implemented programs are truly utilized by partner groups, regular monitoring and mentoring will be conducted. This assistance includes post-training mentoring for approximately 2-4 weeks through communication groups,

regular checks on the consistency of transaction input, and skills development in correction and reporting features to maintain data accuracy and produce more understandable reports (Rizqi et al., 2022). With this kind of support, the application has strong potential to become an administrative tool fully integrated into group routines and have a more sustainable impact on financial governance (Perdani & Darmawati, 2025).

CONCLUSION

Training on the Farmers' Budgeting System Application improved participants' digital financial literacy and strengthened the capacity of farmer groups in maintaining financial records. The main result showed a significant increase in knowledge, with the mean score rising from 46.55 (pre-test) to 82.45 (post-test) (n = 11), accompanied by strong mastery of core operational skills, particularly in entering income and expense transactions and using summary reports for cash recapitulation and control. Some other functions, such as transaction correction and report utilization, still require further training. However, overall, the results of this training can already serve as an initial foundation for improving documentation and financial record-keeping within farmer groups. The application of these results in group activities is expected to enhance accountability and administrative performance.

DECLARATION OF GENERATIVE AI

The authors declare that no generative AI or AI-assisted technologies were used in the writing process of this manuscript.

CONFLICTING INTEREST STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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