

Digital Accounting System to Improve Financial Transparency in An Employee Cooperative

Author:

*Yunanda Eka Putra, Sri Liniarti, Rizky Surya Andhayani Nasution

Affiliation:

Al Azhar University, Jakarta, Indonesia

***Corresponding author:**

nandonk83@gmail.com

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Abstract

Originality/novelty: This study demonstrates how combining an accessible, low-cost digital tool (Google Sheets) with a member-facing WhatsApp distribution routine can effectively bridge the financial transparency gap and mitigate information asymmetry in small cooperatives.

Objective: To evaluate the implementation of a low-cost digital accounting information system designed to replace manual handwritten records and restore member trust in an employee cooperative's governance. .

Methods/approach: Framed as participatory action research with asset-based elements, the project spanned three phases: needs assessment, system design/implementation, and training/mentoring. Analyzed through the lens of TAM, digital transformation, and cooperative governance theory, data were gathered from four informants, observations, document analysis, and post-training questionnaires, evaluated using thematic analysis and triangulation.

Results: Within four weeks, monthly financial reports became readily available to all board members. Post-training evaluations showed that 92% of respondents understood how to operate the system, while 85% expressed increased confidence in the cooperative's financial transparency, promoting active member participation during meetings.

Implications: The study highlights that small-scale cooperatives can achieve meaningful digital transformation and stronger governance without high financial investment, provided design simplicity, practical capacity building, and regular disclosure routines are prioritized.

Keywords:

Digital Accounting Information System, Cooperative Transparency, Financial Literacy, Participatory Action Research, Community Service (PKM).

INTRODUCTION

Cooperatives are one of the pillars of the Indonesia national economy, playing a strategic role in improving the well-being of their members and the broader community. As collective economic entities, cooperatives are founded on the principle of “by, for, and of the members”, a philosophy that inherently demands transparency in financial management. In practice, however, many cooperatives at the village and sub-district levels still rely on manual record-keeping that is prone to errors, difficult to audit, and unable to give members timely insight into the organization’s financial condition (Warsono & Muanas, 2020). The employee cooperative examined in this article, Koperasi Karyawan Maju Terus, is one such case.

Weak financial reporting is not merely a technical shortcoming. When financial reports are not presented transparently and on time, members’ trust in the management tends to decline, participation weakens, and decisions on the distribution of the surplus and on long-term programs are taken on unclear information. Work in the public-sector setting makes the same point from a different angle: Bahri and Fikri (2024), writing on the reconciliation of regional budget realization reports, show how accurate reconciliation and reporting underpin the accountability of an institution to those it serves. Member-owned organizations face an analogous accountability relationship, except that the “principals” are the members themselves, who sit in the same meeting room as the management.

Accounting information systems (AIS) offer a response to this problem. An AIS is the set of people, procedures, and technology within an organization that collects and processes transaction data to produce financial information (Mulyadi, 2022; Romney & Steinbart, 2021). In the current digital environment an AIS no longer has to be a costly package. Free or inexpensive platforms such as Google Sheets, Microsoft Excel, or web-based accounting applications can serve as a realistic entry point for small organizations; evidence from small businesses indicates that perceived usefulness, perceived ease of use, and the credibility of cloud-based accounting tools shape owners’ attitudes toward adopting them (Pramuka & Pinasti, 2020). Yet adopting a tool is only the visible part of the change. The digital transformation literature stresses that technology produces value only when accompanied by changes in work routines, skills, and organizational arrangements (Hanelt et al., 2021; Verhoef et al., 2021; Vial, 2019).

The Community Service Program (*Pengabdian kepada Masyarakat*, PKM) offered an opportunity to address this issue directly. Through intensive mentoring, the PKM team designed and implemented a digital accounting system tailored to the capacity and needs of the cooperative, in line with the asset-based spirit of community service developed in other MSME and cooperative empowerment programs (Hanafi et al., 2025).

Three gaps motivate this article. First, studies of digital accounting adoption are dominated by survey-based work on owners and managers of small businesses (for example, Pramuka & Pinasti, 2020). Such work says comparatively little about member-owned organizations, where the people who operate the system are often non-accountant volunteers and the audience of the resulting reports is the membership itself. Second, among the community service articles reviewed for this paper, digital interventions in the *Prestise* journal tend to target skills or visibility for

individual MSME actors (Hanafi et al., 2025; Innocencia et al., 2025) or financial literacy for other target groups (Dwijayanti et al., 2024); the cooperative reporting relationship, in which transparency is a governance mechanism rather than a by-product of better bookkeeping, receives little explicit attention. Third, PKM reports commonly describe activities and outputs but seldom explain why an intervention worked or state how effects were measured, which limits their value as evidence. These statements describe the literature reviewed here and are not a claim to have surveyed all PKM work.

The program differs from earlier community service activities in four respects. (1) It treats transparency as two-sided: besides a bookkeeping template for the treasurer, it created a routine for disclosing monthly reports to members through a shared link and a simple infographic distributed in the cooperative's WhatsApp group. (2) It used a dual-audience training design, with one session for administrators focused on operating the system and another for members focused on reading reports and exercising their right to information. (3) It is analyzed with an explicit conceptual framework that combines the Technology Acceptance Model (TAM), digital transformation and organizational change, and cooperative governance, so that the reasons for success or failure can be discussed rather than only reported. (4) It reports how the evaluation figures were produced and acknowledges the biases attached to them.

The article has three aims: (1) to describe the state of financial recording at the cooperative before the intervention; (2) to explain the design and implementation of a digital accounting information system and its accompanying training; and (3) to analyze the program's effect on financial transparency and member well-being, and to explain why the observed effects occurred. The article thus contributes a documented, theory-informed case for practitioners of community service and for institutions that support cooperative development.

LITERATURE REVIEW

Accounting information systems and financial transparency

AIS is a critical component of an organization's financial management. Bodnar and Hopwood (2019) describe it as a set of resources designed to transform financial data into information useful for decision-making, and Romney and Steinbart (2021) add that an effective AIS must provide information that is relevant, accurate, timely, and accessible to stakeholders. Mulyadi (2022) stresses the system's role in recording, classifying, and summarizing transactions so that statements can be prepared consistently. These definitions share one idea: the value of an AIS lies not in storing data but in making information usable by the people who decide.

In a cooperative, the audience for that information is broader than in a conventional firm. Members are simultaneously owners, users, and (often) capital providers, so each has a moral and legal claim to financial information. Law No. 25 of 1992 on Cooperatives, the statute currently in force, makes the member meeting the highest authority of a cooperative and obliges management to account for its performance to the members. (An earlier Law No. 17 of 2012 had attempted to

replace it, but it was annulled by the Constitutional Court in 2014.) A cooperative that cannot produce a periodic balance sheet and income statement therefore struggles to meet even its basic obligation of accountability.

Cooperative governance and information asymmetry

Cooperative governance is characterized by tensions that conventional corporate governance does not face. Cornforth (2004) analyzes these as paradoxes, for instance between member control and managerial expertise, and between representing members and running an efficient business. When managers control the information, member control becomes nominal. Ostrom (1990) offers a complementary view: long-enduring collective institutions rely on monitoring arrangements that are visible and inexpensive for participants, and on rules that participants can understand. Financial reports that every member can open and read are one such monitoring arrangement.

Member participation is the other side of the same coin. Birchall and Simmons (2004) examine what motivates members to take part in cooperative and mutual businesses, and their work supports the reasoning that people participate when they see a link between their involvement and outcomes they value. Transparent reporting makes that link visible: members can see how savings, loans, and surplus relate to decisions. In the Indonesian setting, Warsono and Muanas (2020) describe orderly bookkeeping and periodic reporting as basic managerial requirements for cooperative development. Taken together, this literature implies that the digitization of bookkeeping is best understood as a governance intervention.

Technology Acceptance Model

Davis (1989) proposed that two beliefs, perceived usefulness and perceived ease of use, determine whether people accept an information technology. (Tsarfatih,et.al, 2023) extended the model (TAM2) with social influence and cognitive instrumental processes such as job relevance, output quality, and result demonstrability, and (Almgrashi,et.al, 2025) integrated competing models into the Unified Theory of Acceptance and Use of Technology (UTAUT), which adds effort expectancy, performance expectancy, social influence, and facilitating conditions. In the accounting context, Pramuka and Pinasti (2020) found that perceived usefulness, ease of use, and credibility positively influenced small-business owners' attitudes toward cloud-based AIS and, through attitudes, their adoption intention.

TAM is relevant here for a practical reason. The cooperative's administrators are not trained accountants, so perceived ease of use is the binding constraint, while perceived usefulness depends on whether reports visibly reduce workload and answer members' questions. Social influence (the expectation of the board and members) and facilitating conditions (devices, internet access, a written guide) belong to the UTAUT extension and are included in the discussion below.

Digital transformation and organizational change

Verhoef et al. (2021) distinguish digitization, digitalization, and digital transformation, and argue that the last requires change in business models and strategy rather than the mere use of tools. Vial (2019) defines digital transformation as a process in which digital technologies create disruptions that trigger strategic responses and structural changes, while organizations must manage barriers to change. Hanelt et al. (2021), reviewing 279 articles, interpret digital transformation from the perspective of organizational change and show that it tends to move organizations toward more adaptable designs. For a small cooperative, the implication is that moving from a handwritten cash book to a shared spreadsheet touches roles (who enters data), routines (when reports are produced), and norms (who may see them).

Classical change theory helps to organize these shifts. Lewin (1947) describes change as unfreezing existing habits, moving to a new state, and refreezing the new practice so that it persists. Kotter (1996) emphasizes a sense of urgency, guiding coalitions, short-term wins, and anchoring new approaches in the culture. The monthly report, the first visible “short-term win”, and the written SOP that supports refreezing map directly onto these ideas.

Financial literacy and capacity building

Financial literacy matters for how individuals and organizations interpret and use financial information (Lusardi, 2023). In community service, (Dwijayanti et al. 2024) report a financial-literacy program that builds awareness and saving habits, and the present program shares their orientation toward practice-based, participant-centred delivery. Training effects are conveniently described with the four levels of Kirkpatrick and Kirkpatrick (Nawaz, et.al, 2006): reaction, learning, behavior, and results. This article’s post-training measures reach the first two levels; behavior and results are inferred only tentatively from the four-week observation.

Synthesis of previous studies and conceptual framework

Table 1 summarizes the studies used in this article and what each implies for the program. The synthesis reveals a division of labor in the literature: technology acceptance work explains why users adopt accounting tools, governance work explains why transparency matters in member-owned organizations, and digital transformation work explains why technology must be accompanied by organizational change, but few sources connect the three in a single, documented community-service case.

Table 1. Synthesis of studies informing the program

Source	Context	Focus	Relevance to this program
Pramuka & Pinasti (2020)	Small business owners; cloud-based AIS	TAM-based survey of attitudes and adoption intention	Usefulness, ease of use, and credibility matter; informs design for non-accountants
Hanafi et al. (2025)	MSME actors; PKM	Digital marketing training	Shows digital skills mentoring in PKM; target is individual MSMEs, not organizational reporting
Innocencia et al. (2025)	MSMEs; PKM	Digitalization of location and promotional visuals	Supports visual presentation of information; motivates the infographic report
Dwijayanti et al. (2024)	Children at a TPQ; PKM	Financial literacy and saving habits	Practice-based literacy delivery; different audience
Bahri & Fikri (2024)	Regional government; PKM	Reconciliation of budget realization reports	Reporting accuracy as a basis for accountability; public-sector setting
Vial (2019); Hanelt et al. (2021); Verhoef et al. (2021)	Organizations in general	Digital transformation as organizational change	Technology must be paired with change in roles and routines
Cornforth (2004); Ostrom (1990)	Cooperatives; collective institutions	Governance tensions; monitoring in collective action	Transparency as a monitoring mechanism for members

The conceptual framework used in the rest of the article follows from this synthesis. System design choices (automated formulas, a single entry point, a shared link) are expected to raise perceived ease of use and usefulness (TAM); training and mentoring supply the skills and facilitating conditions needed for sustained use (UTAUT, financial literacy); the reporting routine and the SOP move the organization through unfreezing, moving, and refreezing (organizational change); and the resulting availability of reports to members strengthens monitoring and participation, which is the transparency outcome of interest (cooperative governance).

METHODS

Research Approach

The study is a descriptive qualitative case study of a community service program. The program was framed as participatory action research (PAR), following the cycle of planning, acting and observing, and reflecting described by (Salman et al. 2025). It also borrowed elements of asset-based community development (Garcia, 2020): rather than starting from what the cooperative lacked, the team started from existing assets such as the treasurer's disciplined daily cash book, members' widespread smartphone use, and an active WhatsApp group. The partnership logic of community-based research (Cortez et al., 2021), in which the community co-defines the problem

and shares in the learning, guided the relationship between the PKM team and the board.

The three intervention phases correspond to the PAR cycle. The needs assessment is the initial reflection and planning stage; system design and implementation is the action stage; training, mentoring, and the review of early results form the observe-and-reflect stage. Because the observation window was short, only a single cycle was completed.

Setting and Participants

The program took place at Koperasi Karyawan Maju Terus, located in Tobasari Village, Siantar Sitalasari Subdistrict, Pematangsiantar City. The cooperative was established in 2010 and has about 87 active members, most of whom are employees of government and private institutions in the surrounding area. Before the intervention it used a manual cash book and did not prepare financial reports regularly or systematically.

Two groups of participants were involved. The first comprised four key informants for in-depth interviews: the chairperson, the treasurer, and two active members, selected purposively on the basis of their involvement in cooperative activities. The second comprised participants in the training sessions: 5 administrators (chairperson, secretary, treasurer, and in the first session and 5 members in the second session. Purposive selection of informants favors depth over representativeness, which is a limitation discussed later.

Intervention Procedure

The intervention ran for forty days and had three phases. In the first phase, an initial needs assessment mapped the existing recording system, identified training needs, and explored the expectations of the board and members. In the second phase, the PKM team designed a Google Sheets-based template containing a general journal, ledger, income statement, and balance sheet, and later restructured it into the five components described in the Results. In the third phase, administrators were trained to operate the system independently, including entering transactions, interpreting the reports, and distributing them to members through a shared link; a separate session explained report reading and members' information rights.

Data collection and instruments

Data were collected through four sources. Participant observation took place throughout the forty days, with the team taking part in record-keeping and training and writing field notes. Semi-structured in-depth interviews with the four informants covered the previous recording practice, difficulties experienced, perceptions of the new system, and perceived changes in trust and participation. Documentation consisted of the cooperative's earlier cash book, the spreadsheet outputs, and the monthly reports shared with members. Finally, a post-training questionnaire captured participants' self-assessed understanding and confidence.

The quantitative claims reported in this article (92% and 85%) come from the post-training questionnaire. Table 2 states how they were produced. The questionnaire used a five-point Likert scale (1 = strongly disagree, 5 = strongly agree) and an indicator was counted as achieved when a respondent chose 4 or 5. The instrument was administered on paper at the end of each training session so that response was not tied to later contact with the team.

Data analysis and trustworthiness

Qualitative data were analyzed thematically through data reduction, data display, and conclusion drawing (Monaro et al., 2022), with coding informed by the steps described by (Thoukidides, 2026). Initial codes were grouped into themes aligned with the conceptual framework (ease of use, usefulness, social influence, facilitating conditions, governance and participation, and sustainability concerns), while allowing unexpected themes to emerge. Questionnaire responses were summarized as percentages; given the small number of respondents, no inferential statistics were computed. Trustworthiness was supported by triangulation across sources (interviews, observation, documents) and methods, a prolonged engagement of forty days, and in line with the credibility and dependability criteria of Lincoln and Guba (1985).

Ethical considerations

Participation in interviews, training, and the questionnaire was voluntary, and participants were told the purpose of the activity and that they could decline or withdraw without consequence. Informants are identified only by role, and no individual member's savings or loan data were displayed in the reports shared with the wider membership; only aggregate statements were shared, consistent with the principles of the Personal Data Protection Law (Law No. 27 of 2022). Access to the editing rights of the spreadsheet was limited to the designated administrators, and the PKM team handed over all files and removed its own access at the end of the program. The team acknowledges its dual role as helper and researcher, which may influence participants' responses.

RESULTS AND DISCUSSION

Initial Status of the Cooperative's Financial System

The initial assessment shows that the cooperative did not have a structured accounting information system. Transactions were recorded manually in a daily cash book handwritten by the treasurer. Four fundamental problems were identified: (1) the absence of a clear, easily readable separation between cash inflows and outflows; (2) the absence of periodic balance sheets and income statements; (3) net income that was often estimated without a firm accounting basis; and (4) the lack of any mechanism for members to access financial information, because reports were not published.

This situation creates a significant information asymmetry between management and

members. Romney and Steinbart (2021) argue that an effective AIS should provide information that is relevant, accurate, timely, and accessible to all stakeholders; the initial system failed on all four counts. Read through cooperative governance theory (Cornforth, 2004; Ostrom, 1990), the absence of reports left members without a low-cost way to monitor management, so the formal authority of the member meeting existed without the information needed to exercise it. The problem is therefore not only technical but also one of institutional trust that can hinder member participation over the long term. It is also notable that the treasurer's daily cash book was kept consistently; this existing habit became the foundation on which the digital template was built.

Design and Implementation of a Digital Accounting Information System

On the basis of the assessment, the PKM team designed a simple Google Sheets bookkeeping system with five components: (a) a cash receipt journal; (b) a cash disbursement journal; (c) a simple general ledger; (d) a monthly income statement; and (e) an end-of-period balance sheet. Google Sheets was chosen for pragmatic reasons: it is free, accessible from any internet-connected device, supports real-time collaboration, and requires no specialized software. Table 2 relates each component to its function and to the acceptance and governance constructs it is meant to address.

Table 2. System components and their intended function

Component	Function	Acceptance construct addressed	Governance function
Cash receipt journal	Records all cash inflows in a separate, readable format	Ease of use (familiar cash-book logic)	Traceability of inflows
Cash disbursement journal	Records all cash outflows with purpose	Ease of use	Traceability of outflows
Simple general ledger	Summarizes accounts automatically from the journals	Usefulness (no manual recap)	Consistency and auditability
Monthly income statement	Replaces estimated surplus with calculated figures	Usefulness (decision-relevant output)	Basis for SHU discussion
End-of-period balance sheet	Shows assets, liabilities, and equity	Usefulness	Accountability to the member meeting
Shared link and WhatsApp infographic	Distributes monthly reports to board and members	Social influence; facilitating conditions	Member monitoring and participation

Each component uses automated formulas so that administrators only enter daily transactions, while reports update automatically. This matters because most administrators have

no accounting background. A “self-explanatory”, intuitive design is key to adoption, which is consistent with Bodnar and Hopwood’s (2019) view that an accounting system should be designed around users’ capabilities and not merely around technical accounting standards. In TAM terms, automation lowers the effort needed to produce a report (perceived ease of use) and makes the report immediately available (perceived usefulness).

In addition to Google Sheets, the team introduced WhatsApp as a financial communication channel. Monthly reports were formatted as simple infographics and shared through the cooperative’s WhatsApp group. Visual presentation of digitized information has been identified as a way of increasing the visibility of small enterprises (Innocencia et al., 2025); the present program applies a similar logic to the visibility of the cooperative’s finances for its own members. According to the board, the practice raised members’ awareness of the financial condition.

Financial Literacy Training for Cooperative Officials and Members

Implementing a digital system without building people’s capacity is like building a house without a foundation, so financial literacy training was designed as an integral part of the intervention. It was conducted in two sessions. The first, for executives (chairperson, secretary, treasurer), focused on operating the system; the second, for general members, focused on understanding financial reports and the right to access the cooperative’s financial information.

The materials were adjusted to participants’ varied levels of financial literacy, and the method was hands-on practice (learning by doing): each participant entered transaction data and read the resulting reports. The team observed that this approach built confidence in using the new technology more effectively than lecturing, a pattern that parallels the practice-oriented approach reported by (Dwijayanti et al. 2024). Because no control group was used, this observation should be treated as an impression from the field rather than a measured comparison.

Table 4 reports the post-training evaluation. Ninety-two percent of respondents reported that they understood how to operate the new system, and 85% reported feeling more confident about the cooperative’s financial transparency after reviewing the reports generated by the system. In Kirkpatrick’s terms these are reaction and self-reported learning measures, not evidence of behavior change or organizational results. The percentages should be read together with the respondent counts, because with small groups each respondent shifts the figure by several percentage points.

Impact on Financial Transparency and Member Well-being

Four weeks after implementation, several positive changes were observed. First, monthly financial reports became available at month-end and could be accessed by all board members through a shared Google Sheets link. Second, transaction verification became faster because the automated formulas display balance summaries and recaps instantly. Third, members began to ask about financial conditions in monthly meetings, a participatory behavior that had previously been rare. These are observations by the team and informants, not outcomes measured against a

baseline, and are interpreted accordingly.

From the perspective of member well-being, greater transparency is expected to contribute indirectly to trust, which may in turn encourage members to save and borrow through the cooperative. In the longer term, trust and participation could strengthen the cooperative's economic base and open room for a wider range of welfare programs. This reasoning is consistent with the view that transparent and accountable management is a prerequisite for delivering economic benefits to members of community-based financial institutions (Nugraha & Rifai, 2024). It must be stressed, though, that savings and loan participation was not measured during the four-week window; the link between transparency and well-being is therefore a plausible pathway, not a demonstrated effect.

The cooperative's digital transformation is still at an early stage. Sustainability depends on the board's consistency in updating data and its commitment to improving digital capabilities. For this reason the team prepared operational guidelines (SOPs) for using the system and gave them to the board as a self-guided reference after the program ended.

Why the Intervention Worked: An Analytical Discussion

The observed changes can be explained by the interaction of five design features, each corresponding to a construct in the conceptual framework.

First, the design lowered the effort barrier. In TAM, perceived ease of use is often the first hurdle, and in this cooperative it was decisive because administrators were not accountants (Davis, 1989). Automated formulas, a single point of data entry, and a template that mirrored the familiar cash book reduced the number of new concepts users had to master. Second, the system produced visible usefulness quickly. Perceived usefulness is strengthened when the results of using a system are demonstrable (Venkatesh & Davis, 2000), and the month-end report was a tangible, demonstrable output that answered members' questions. In Kotter's (1996) terms, it was the short-term win that sustained momentum.

Third, facilitating conditions and social influence were in place. A free platform, devices members already owned, a written SOP, and the board's visible endorsement correspond to the facilitating conditions and social influence that UTAUT treats as determinants of use (Venkatesh et al., 2003). Fourth, the program addressed the people and the routine, not only the tool. Consistent with the organizational change reading of digital transformation (Hanelt et al., 2021; Vial, 2019), the training changed who could do the work, and the monthly reporting routine changed when and how information flowed; the SOP served as the refreezing mechanism in Lewin's (1947) sequence.

Fifth, and most specific to a cooperative, the intervention changed the information relationship between management and members. Making the reports visible to members created the low-cost monitoring that Ostrom (1990) identifies as a feature of durable collective institutions, and it began to ease the tension between management control and member oversight discussed by Cornforth (2004). The fact that members started to ask questions in meetings is consistent with

this reading: when information is available, participation has something to attach to (Birchall & Simmons, 2004).

Comparison with Previous Studies

The results are consistent with the technology acceptance evidence from small businesses. Pramuka and Pinasti (2020) found that usefulness, ease of use, and credibility drive attitudes toward cloud-based AIS; in the present case, ease of use and demonstrable usefulness appear to have mattered, and credibility was addressed by letting the board verify figures against the cash book. Unlike that survey-based work, this study cannot estimate the relative strength of each factor; it adds a descriptive account of how such factors were handled in a member-owned organization.

In relation to community service literature, the program shares with Hanafi et al. (2025) and Innocencia et al. (2025) the premise that digital tools can be introduced to small economic actors through mentoring and that visual, accessible presentation of information helps. It differs in the target: those studies address the visibility or marketing of individual MSMEs, whereas here the beneficiary of digitized information is the membership of an organization, and the outcome of interest is transparency rather than sales visibility. Compared with Dwijayanti et al. (2024), the common ground is a participatory, practice-based approach to financial literacy; the difference is the audience (adult members and administrators) and the link to organizational reporting. Relative to Bahri and Fikri (2024), whose subject is public-sector reconciliation, the program applies the same accountability logic in a much smaller, voluntary setting without formal audit requirements.

At a broader level, the findings support the point made by Verhoef et al. (2021) and Hanelt et al. (2021) that digital transformation is as much an organizational change as a technology adoption. They also illustrate a nuance that large-firm studies seldom address: in a small cooperative, the main change agent is a handful of volunteers, so the system's survival depends on whether it can be operated by them without outside help. The study does not, however, contradict or confirm studies on cooperative performance, as it did not measure financial performance.

Implications

For practitioners of community service, the case suggests starting from the habits and assets already present (here, the cash book and WhatsApp group), designing for non-accountants, producing a visible output within the first month, and pairing the technology with a written routine. For cooperative boards, it suggests treating the monthly report as a standing agenda item and the shared spreadsheet as an organizational asset that requires clear ownership. For policymakers and universities, it supports funding mentoring that follows a cooperative beyond the initial training, since the benefits observed here depend on consistent use after the program ends. For theory, it provides a small, documented case for combining TAM, change management, and governance perspectives in the analysis of low-cost digitalization in member-owned organizations.

CONCLUSION

The implementation of a digital accounting information system utilizing Google Sheets, integrated with financial literacy training through the PKM program, successfully transformed the employee cooperative's financial management by replacing manual, error-prone recording practices with a transparent and efficient system. This intervention significantly enhanced institutional trust, verification speed, and member engagement, as evidenced by the regular availability of monthly financial reports and a heightened willingness among members to inquire about organizational finances. The findings demonstrate that small-scale cooperatives do not require expensive or overly complex technology to achieve operational transparency; rather, accessible and cost-effective digital platforms can drive meaningful governance improvements when paired with user-friendly design, continuous hands-on mentoring, and structured disclosure routines. Ultimately, the program underscores that technology adoption must be accompanied by a collective commitment from all stakeholders to embed transparency into the cooperative's organizational culture, paving the way for sustainable capacity building and stronger financial accountability.

Despite these positive outcomes, the study exhibits several methodological and operational limitations, notably its single-case scope, small qualitative informant sample, brief four-week observation window, and reliance on self-reported data that may be subject to social desirability and Hawthorne effects. Furthermore, the system remains vulnerable to spreadsheet-related risks such as formula errors and accidental overwriting as well as potential disruptions caused by internet connectivity issues, device failures, or reliance on a limited number of trained administrators. To mitigate these vulnerabilities and ensure long-term sustainability, it is recommended that the cooperative enforce strict data integrity protocols, perform regular backups, and gradually transition to dedicated accounting software as transaction volumes expand. Additionally, local government agencies and universities should establish continuous mentoring networks and thematic PKM programs, while future research should employ longitudinal multi-cooperative designs, baseline measurements, and objective metrics to independently verify lasting impacts.

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Conflict Of Interest

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

AI Usage Statement

The use of Artificial Intelligence (AI) tools in this work was strictly limited to supportive functions, specifically for language editing, grammar checking, and improving clarity and readability. AI was not used to generate core ideas, conduct substantive analysis, interpret data, or draw scholarly conclusions. The authors retain full responsibility for the originality, accuracy, and academic integrity of the content, and AI tools are not credited as authors or contributors, in accordance with ethical standards in academic publishing.

Author Contributions Statement

YEP, SL, and RSAN conceptualized and designed the study. YEP and SL led the needs assessment and system design using Google Sheets and WhatsApp distribution routines. RSAN and YEP conducted the training, mentoring sessions, and data collection through observations, interviews, and post-training questionnaires. SL and RSAN analyzed the data using thematic analysis and TAM framework evaluation. YEP, SL, and RSAN drafted and revised the manuscript, and all authors approved the final version for publication.

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