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Participatory digital transformation model for MSME financial reporting: integrating PRA and TELOS through SIAPIK in developing economies

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ABSTRACT

The limited adoption of standardized financial reporting among micro, small, and medium enterprises (MSMEs) persists despite the availability of digital accounting tools. Existing studies predominantly focus on technological aspects, while overlooking the gap between system availability and actual user adoption, particularly in micro-scale, craft-based enterprises. This study addresses this gap by examining the role of participatory approaches in facilitating digital financial reporting practices. This research aims to develop and evaluate a participatory digital transformation model by integrating Participatory Rural Appraisal (PRA) and the TELOS feasibility framework in the implementation of the SIAPIK application for MSMEs. A qualitative case study was conducted involving five key stakeholders selected through purposive sampling. Data were collected through in-depth interviews, focus group discussions, and document analysis, and analyzed using thematic coding and triangulation. The findings indicate that MSMEs rely on informal financial practices, including incomplete transaction records and estimation-based decision-making. The application of PRA enhances user engagement and supports the transition from manual to digital bookkeeping. The TELOS analysis shows that while SIAPIK is technically and economically feasible, its effective use depends on continuous mentoring and contextual adaptation. This study contributes by proposing an integrated participatory digital transformation model, highlighting that successful adoption of digital financial systems requires not only technology, but also user-centered facilitation mechanisms.

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1. INTRODUCTION

Kupang City, as the main gateway to East Nusa Tenggara (NTT), serves not only as a tourism hub but also as a center of local economic activities, particularly in the

development of micro, small, and medium enterprises (MSMEs), including the traditional weaving sector. The integration between tourism potential and local creative industries highlights the strategic role of MSMEs in sustaining regional economic growth. In this context, the weaving craft sector in Oebobo sub-district represents a significant economic actor that contributes to both cultural preservation and income generation. However, alongside this growth, MSMEs increasingly face challenges related to business management, particularly in financial recording and reporting practices. In recent years, digital transformation has become more prevalent among MSMEs in Indonesia, emphasizing the importance of reliable accounting practices and information systems as a basis for decision-making. With well-organized financial data, business actors can evaluate performance more accurately, identify efficiency opportunities, and formulate strategic decisions based on reliable information (Gunawan et al., 2024). Conversely, unreliable financial statements may hinder MSME development by limiting profit growth, complicating strategic planning, and restricting access to external financing (Panjaitan et al., 2023).

Despite the recognized importance of MSMEs in supporting regional and national economies, empirical evidence indicates that many MSMEs continue to face structural challenges in financial management, particularly in maintaining standardized financial records. Prior studies consistently show that limited accounting knowledge, low financial literacy, and the perception that formal financial reporting is unnecessary for small-scale businesses contribute to weak bookkeeping practices among MSMEs (Izzaty & Solovida, 2023). Furthermore, MSMEs often struggle to comply with Financial Accounting Standards for Micro, Small, and Medium Entities (SAK-EMKM), resulting in incomplete and unreliable financial information (Febriana et al., 2026; Arham et al., 2024). Existing interventions, including training programs and technical assistance, have attempted to address these issues; however, their effectiveness remains limited, particularly in ensuring sustained adoption of proper financial recording practices (Pah et al., 2023). This indicates that the problem is not solely related to the availability of knowledge or tools, but also to the gap between introduced solutions and actual practices at the MSME level. Nevertheless, current literature predominantly focuses on technical solutions or training-based approaches, with limited attention to participatory mechanisms that actively involve MSME actors in the adoption process. This gap highlights the need for a more context-sensitive approach that integrates user participation with digital financial reporting systems.

Field observations and prior empirical studies indicate that, despite various initiatives to improve MSME capacity, financial recording practices remain largely informal and inconsistent, particularly in micro-scale sectors such as weaving enterprises. Many MSME actors still do not maintain systematic financial records, often due to limited accounting knowledge and the perception that financial reporting is not essential for small-scale operations. This condition results in incomplete financial information, reducing the reliability of business performance evaluation and limiting access to external financing. Previous studies highlight that the primary constraint faced by MSMEs is not only related to market access but also to their low capability in preparing standardized financial reports, particularly in accordance with SAK-EMKM (Izzaty & Solovida, 2023; Febriana et al., 2026; Arham et al., 2024). Moreover, prior interventions such as training and mentoring programs have shown limited effectiveness in ensuring consistent financial recording practices at the operational level (Pah et al., 2023). This suggests that existing approaches have not fully addressed the behavioral and contextual barriers faced by MSME actors. Therefore, a more integrative approach is required, one that not only introduces digital tools but also actively involves users in the process of understanding and adopting financial reporting practices (Guterres et al., 2025).

Although digital financial recording applications such as SIAPIK have been introduced to support MSME financial management, existing studies primarily report their functional benefits without critically examining the conditions under which these systems are effectively adopted. Most prior research emphasizes the technical capability of the application to generate standardized financial reports, yet provides limited evidence regarding sustained usage, user comprehension, and integration into daily business practices (Rinandiyana et al., 2020; Mawuntu et al., 2022). In many cases, digital tools are introduced through short-term training or assistance programs, with insufficient evaluation of whether MSME actors are able to internalize and consistently apply these systems beyond the intervention period. This indicates a critical gap between system implementation and actual behavioral adoption at the user level. Furthermore, previous studies tend to treat digitalization as a purely technological solution, without adequately addressing contextual factors such as user participation, learning processes, and socio-economic constraints that may influence adoption outcomes. As a result, the effectiveness of digital financial applications in improving MSME financial practices remains inconclusive. This gap underscores the need for research that not only evaluates the feasibility of digital tools but also examines how participatory approaches can facilitate meaningful and sustained adoption in real-world MSME contexts.

Building on the identified gap between the availability of digital financial tools and their effective adoption at the MSME level, this study positions digital transformation not merely as a technological intervention but as a socio-technical process that requires active user engagement. While prior studies have emphasized system functionality, limited attention has been given to how participatory mechanisms can facilitate the integration of digital financial reporting into everyday business practices. To address this limitation, this study proposes an analytical framework that combines Participatory Rural Appraisal (PRA) with the TELOS feasibility model to examine both the adoption process and contextual feasibility of the SIAPIK application in MSMEs. The integration of these frameworks enables a more comprehensive understanding of how technical, economic, operational, and social dimensions interact in shaping digital accounting adoption. Accordingly, this research aims to (1) analyze existing financial recording practices among MSMEs, (2) examine the role of participatory approaches in supporting the transition to digital bookkeeping, and (3) evaluate the feasibility of SIAPIK implementation using a multi-dimensional perspective. By doing so, this study contributes to the literature by offering a context-sensitive model of participatory digital transformation, extending existing research that predominantly treats digitalization as a purely technical solution.

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sensitive model of participatory digital transformation, extending existing research that predominantly treats digitalization as a purely technical solution (Mawuntu et al., 2022).

2. RESEARCH METHOD

This study adopts a qualitative participatory case study design, focusing on the implementation of digital financial reporting practices among weaving MSMEs in Oebobo Village. The research is positioned within an interpretive paradigm, aiming to understand how MSME actors experience and adopt digital bookkeeping systems within their specific socio-economic context. Unlike general qualitative approaches, this study operationalizes the Participatory Rural Appraisal (PRA) framework as a structured methodological approach to facilitate data generation and collective analysis. (Khan, 2014). PRA was implemented through four sequential stages: (1) pre-assessment, involving initial field engagement, stakeholder identification, and preparation of research instruments; (2) assessment, where key financial recording problems were identified using participatory tools such as problem mapping; (3) collaborative analysis and triangulation, conducted through focus group discussions (FGDs) to validate findings and compare manual and digital financial records; and (4) planning and action, where MSME actors engaged directly with the SIAPIK application under guided facilitation. Data were collected primarily through in-depth interviews and FGDs, ensuring consistency with the qualitative design, while documentary data (e.g., transaction records and SIAPIK outputs) were used to support triangulation. The researcher acted as a facilitator in the participatory process, guiding discussions, documenting interactions, and ensuring that data collection followed systematic and replicable procedure (Nugraha et al., 2023).

The implementation of the Participatory Rural Appraisal (PRA) framework in this study was conducted through clearly defined and sequential stages. First, the pre-assessment stage involved initial field engagement, including stakeholder mapping, rapport building, and the preparation of research instruments such as interview guides and SIAPIK usage protocols. Second, the assessment stage focused on identifying key issues in MSME financial practices. This was carried out through in-depth interviews and participatory problem mapping, enabling respondents to describe their existing recording practices and challenges. Third, the collaborative analysis and triangulation stage was conducted through focus group discussions (FGDs), where data obtained from interviews were cross-checked across participants and compared with documentary evidence, including manual financial records and SIAPIK-generated reports. Triangulation was applied across data sources (different stakeholders), methods (interviews, FGDs, and document analysis), and time (before and after system introduction) to ensure consistency of findings. Fourth, the planning and action stage involved guided interaction with the SIAPIK application, where participants recorded actual transactions under researcher facilitation. Data validation was conducted by comparing recorded transactions with available supporting documents (e.g., sales notes and expense records) and by confirming consistency of responses across interviews and FGDs. These procedures were applied to enhance data credibility, transparency, and analytical rigor.

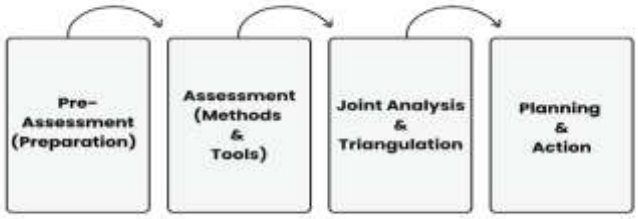

Figure 1. Stage of Participatory Rural Appraisal Method
Source: Chamber (2019)

The lack of financial record-keeping among MSME participants remains a critical issue, particularly in the weaving craft sector in Oebobo Village, where many business actors are unable to produce financial reports in accordance with established standards. This condition reflects limited financial literacy and inadequate adoption of structured accounting practices. Prior studies highlight that strengthening financial reporting capacity is essential for improving MSME sustainability and access to formal financing. In this context, the implementation of the Financial Information Recording Application System (SIAPIK), developed through collaboration between the government, Bank Indonesia, and the Indonesian Institute of Accountants, has been identified as a strategic instrument to support MSMEs in recording transactions and generating financial statements aligned with SAK EMKM (Sofyan & Kumala, 2021).

This study employed purposive sampling to select five key respondents representing diverse stakeholder groups, including the Village Head, MSME actors, community leaders, village operators, and digital volunteers. The selection was based on their direct involvement, knowledge, and relevance to MSME financial practices and digital adoption in Oebobo Village. Although the number of respondents appears limited, it aligns with qualitative research principles that prioritize depth of information over sample size. The chosen participants were considered information-rich cases capable of providing comprehensive insights across policy, technical, economic, and community perspectives, consistent with the Participatory Rural Appraisal approach. Data collection was conducted iteratively, and saturation was achieved when no new themes or significant insights emerged from subsequent interviews. Specifically, MSME actors as primary beneficiaries were selected based on the following criteria: (1) ownership of weaving-based MSMEs, (2) substantial experience in business management, and (3) basic knowledge of financial record-keeping.

Data were collected through a combination of literature review, semi-structured interviews, and focus group discussions (FGDs) with selected informants. A total of five in-depth interviews were conducted, each lasting approximately 45–60 minutes, alongside one FGD involving all key stakeholders, which lasted approximately 90 minutes. The literature review provided a foundational framework, including village administrative records, MSME profiles, and relevant government regulations on village digitalisation, which were used to inform the development of the interview protocol. The semi-structured interview guide was designed based on research objectives and prior literature, allowing flexibility to explore emerging issues related to financial recording and reporting practices among MSMEs. All interviews and discussions were audio-recorded, transcribed verbatim, and analysed using thematic analysis following an iterative coding process, including open coding, category development, and theme identification. This approach ensured systematic interpretation of the data and enhanced the transparency and replicability of the study.

This study applied triangulation to enhance the credibility of the findings, following the framework proposed (Zulherry et al., 2023). hree triangulation approaches were employed, namely source triangulation, method triangulation, and data triangulation. Source triangulation was conducted by comparing information obtained from different informants, including the Village Head, MSME actors, community leaders, village operators, and digital volunteers. Method triangulation involved cross-verifying data collected through semi-structured interviews and a focus group discussion (FGD). Specifically, findings from individual interviews were validated through an FGD involving all respondents, allowing confirmation and clarification of emerging themes. Data triangulation was carried out by comparing primary data from interviews and FGDs with secondary data sources, including village profile documents, MSME records, and relevant literature on application feasibility.

From a technical perspective, all interviews and FGDs were audio-recorded, transcribed verbatim, and systematically coded. Cross-checking procedures were implemented by comparing codes and themes across data sources to identify consistency or discrepancies. In addition, field notes and interview recordings were maintained as an audit trail to ensure data authenticity and traceability. Key informants were purposively selected based on their roles and knowledge to facilitate access to reliable information and to ensure that the findings reflect the actual conditions in Oebobo Village. This triangulation process strengthens the validity, transparency, and robustness of the study's conclusions.

Triangulation was conducted using three cross-verification approaches, namely source, method, and data triangulation. Source triangulation involved comparing information from multiple informants, including the Village Head, community leaders, MSME actors, village operators, and digital volunteers. Method triangulation was implemented by cross-checking findings from semi-structured interviews with results from a Focus Group Discussion (FGD) involving all respondents, which served to validate and refine initial interpretations. Data triangulation was carried out by comparing primary data (interviews and FGD transcripts) with secondary sources such as village profile documents, MSME records, and relevant theoretical references. All data collection processes were audio-recorded, transcribed verbatim, and analysed using an iterative thematic coding approach. Cross-source comparisons and follow-up clarifications were conducted to resolve inconsistencies, while field notes and recordings were maintained as an audit trail to ensure data authenticity, transparency, and replicability.

Interview data were analysed using a thematic analysis approach to ensure systematic and rigorous interpretation. The analysis began with data familiarisation through repeated reading of verbatim transcripts, followed by open coding to identify meaningful units relevant to the research objectives. Codes were then grouped into categories through axial coding, enabling the identification of patterns and relationships across the dataset. Subsequently, selective coding was applied to develop overarching themes that represent key findings of the study. During this process, irrelevant or non-aligned data were excluded based on predefined analytical criteria. The organised data were managed using tabulation matrices to facilitate comparison across informants and data sources. To enhance analytical rigor, themes were continuously reviewed and validated through cross-checking with theoretical frameworks and triangulated data sources. This iterative process ensured that the conclusions drawn were grounded in empirical evidence and aligned with established concepts, thereby strengthening the credibility and transparency of the analysis.

Table 1. List of Key Research Informants

No	Informant	Code	Function in Feasibility Assessment	Specific Feasibility Considerations
1	Head Of Oebobo	R1	Regulatory authorities and local policymakers.	Legality and Policy: Ensuring system adherence to governmental requirements.
2	Owner of a micro, small, and medium enterprise	R2	Final consumer and economic entity.	Operational and Economic: Evaluating usability and financial advantages.
3	Community Leaders of Oebobo Village	R3	Assessor of social impact and cultural viability.	Social & Cultural: Evaluating the degree to which technology can be integrated into local traditions.
4	Rural Administrator	R4	Assessment of data preparedness and technological management.	Technical and Administrative: Evaluating data integration and the flow of digital bureaucracy.
5	Virtual Volunteer	R5	Technical facilitator and implementation advisor.	Sustainability: Evaluating human resource capabilities for enduring system upkeep.

Source: data has been processed by the author (2025)

3. RESULTS AND DISCUSSIONS

3.1 Pre-Assessment / Preparation Phase

The findings indicate that MSME actors in the weaving craft sector in Oebobo sub-district are predominantly experienced female entrepreneurs, with over a decade of business operation and relatively stable monthly revenues ranging from Rp 10,000,000 to Rp 15,000,000, categorising them as small-scale enterprises. Despite this level of business maturity and financial stability, the adoption of digital financial practices remains limited. This suggests that business longevity and income level do not automatically translate into digital readiness or structured financial behaviour. From a behavioural perspective, the reliance on conventional transaction recording reflects a low level of financial formalisation, which may hinder access to broader financial ecosystems. Furthermore, the Participatory Rural Appraisal findings reveal that while basic infrastructure such as mobile phones and internet access is available, its utilisation for financial management and digital applications remains suboptimal. This gap highlights that barriers to technology adoption are not solely infrastructural but also related to capability, literacy, and perceived usefulness, reinforcing the need for targeted digital financial interventions aligned with MSME characteristics.

The findings reveal that most MSME owners in the weaving sector do not separate business and personal financial transactions, indicating a fundamental violation of the business entity assumption and limiting their ability to accurately assess financial performance. This condition emerged as a primary constraint affecting financial transparency and decision-making quality. Following the intervention, MSME participants demonstrated improved awareness of the importance of financial separation, as reflected in their ability to distinguish between personal and business cash flows during guided exercises. However, the level of adoption remained partial, suggesting that behavioural change requires sustained assistance beyond initial facilitation. Furthermore, the availability of simplified guidance for the SIAPIK application contributed to increased user confidence, as participants were able to

perform basic transaction recording with reduced error concerns. Despite this progress, challenges related to financial literacy and habitual practices persisted, indicating that the effectiveness of the intervention is contingent upon continuous mentoring and contextual adaptation. These results confirm that the core barrier is not merely technical, but behavioural and cognitive, affecting the overall readiness of MSMEs to adopt structured financial systems.

3.2 Assessment Phase

The analysis identified several underlying causes of limited digital financial adoption among weaving MSMEs in Oebobo sub-district. First, a structural mismatch was observed between regulatory expectations and operational realities, where local authorities perceived the village as digitally ready, while MSME actors experienced significant practical constraints. Second, behavioural factors emerged as a key barrier, as MSME owners prioritised production activities over financial recording, leading to inconsistent bookkeeping practices despite having basic knowledge. Third, procedural complexity in financial reporting requirements reduced the perceived usefulness of digital applications, particularly in contexts of fluctuating daily cash flows. Fourth, institutional support was found to be insufficiently targeted, with assistance mechanisms failing to address the specific and routine bookkeeping needs of MSMEs. Finally, data limitations at the village level, which only captured basic business profiles, did not align with the operational needs of MSMEs, such as tracking accounts payable and receivable for raw materials. These findings indicate that the core constraints are multidimensional, encompassing structural, behavioural, and system-design gaps that collectively hinder effective adoption of digital financial systems.

The findings indicate that the observed weaving MSME relies on a simple notebook to record basic cash inflows and outflows. However, the records are incomplete, as certain operational expenses—such as electricity costs—are not consistently documented. Although individually small, these expenses are recurrent and materially affect the accuracy of production cost calculations and profit estimation. Interview results suggest that this partial recording practice is perceived by the owner as insufficient for understanding the overall financial condition, particularly due to the absence of supporting documentation such as invoices. In addition, inventory valuation and production cost estimation are primarily based on informal approximations rather than systematic calculation methods. As a result, the financial information produced remains limited to basic profit estimates (revenue minus direct costs), which do not fully reflect the actual financial position of the business. These findings point to structural constraints related to limited access to practical accounting tools, rather than individual capability, which in turn affects the reliability of financial decision-making.

These findings are consistent with prior studies indicating that many MSMEs rely on basic cash-based accounting, where profit is defined as the difference between cash inflows and outflows (Pah & Pane, 2025). This practice is further reinforced by the predominance of cash transactions and manual recording systems. Similar patterns were identified by (Popa et al., 2016), who found that MSMEs often depend on simple cash books and rarely prepare structured financial reports. While cash-based accounting remains relevant and widely applied in small-scale enterprises, its standalone use without adequate supporting records—such as expense classification, inventory tracking, and transaction documentation—limits the completeness and reliability of financial information. This constraint is closely associated with limited access to practical accounting tools and training (Holland & Gutiérrez-leefmans, 2018). As a result, digital financial recording tools such as SIAPIK present a potential

intervention to enhance the quality and usability of financial data, particularly by enabling more structured and consistent transaction recording.

3.3 Collaborative Analysis and Triangulation

The findings from the validation phase demonstrate the importance of participatory validation and co-interpretation in improving the usability of digital financial tools among MSMEs. Through Focus Group Discussions (FGDs), stakeholders collaboratively verified and interpreted financial data, with digital volunteers and subdistrict operators facilitating technical translation, while MSME owners actively engaged in analysing their own financial records. This process revealed that the complexity of financial reporting formats was a significant barrier to adoption, prompting recommendations to adapt application guidelines into more accessible, context-specific language. Furthermore, the comparison between manual records and SIAPIK-generated financial reports enabled participants to identify discrepancies and better understand their monthly profit or loss patterns. This co-interpretation process not only enhanced participants' comprehension of financial information but also increased their confidence in using digital tools. Overall, the findings indicate that aligning technical systems with user understanding through participatory mechanisms is critical for effective digital adoption in MSMEs.

The findings indicate an early stage of digital adoption, where MSME owners begin to utilise SIAPIK-generated financial information to support data-informed decision-making, such as adjusting selling prices or identifying alternative suppliers. This shift reflects an initial transition from intuitive to evidence-based business practices, although it does not yet constitute comprehensive digital transformation. To further assess the potential implementation of SIAPIK, a feasibility analysis was conducted using the TELOS framework, as suggested by (Ibrahim et al., 2021). This analysis evaluates the system across technical, economic, legal, operational, and scheduling dimensions to ensure its suitability within the accounting and financial context of MSMEs. The results of this assessment provide a structured basis for determining whether SIAPIK can effectively support more consistent and reliable financial record-keeping practices.

Table 2. SIAPIK Feasibility Analysis Table (TELOS Method)

Feasibility Aspect	Analysis Results & Explanation	Feasibility Indicator
1. Technical	Practical and simple applications only require a smartphone (Android/iOS) or a laptop, as well as an internet connection. UMKM actors already have supporting devices.	Worthy
2. Economic	The application is provided for free by Bank Indonesia. The costs incurred are only the monthly internet operational expenses, resulting in cost efficiency in the preparation of financial reports.	Worthy
3. Legal	Managed by Bank Indonesia in collaboration with the Indonesian Institute of Accountants (IAI). Data security is guarantyd and reporting standards comply with applicable accounting regulations.	Worthy
4. Operational	Feature adjusts to the business sector (such as trade/manufacturing). Automatic transaction input generates financial reports (Profit and Loss, Financial Position, Cash Flow) in accordance with SAK EMKM Standards.	Worthy

5. Schedule	The adaptation process is carried out over 2 months (Month 1: Training and trial; Month 2: Intensive mentoring). This time is considered sufficient given the still low transaction volume.	Worthy

Source: Hall (1994)

The validation phase revealed measurable changes in how MSME participants engaged with financial data. During the Focus Group Discussion, participants compared their manual records with SIAPIK-generated reports and identified previously unrecorded operational costs, particularly recurring expenses such as utilities and material-related outflows. This comparison enabled participants to recognise discrepancies between estimated and actual profit figures. Following guided use of the system, several participants began entering transactions directly into SIAPIK during the session and were able to interpret basic profit–loss outputs with reduced assistance. Evidence of early adoption was observed through increased frequency of system use during the trial phase and reduced reliance on manual notes for daily transaction tracking. Participants also reported improved clarity in distinguishing revenue, costs, and net income. These findings indicate that structured digital recording not only improves data completeness but also supports more accurate financial interpretation at the user level.

Table 3. List of Triangulation Processes

Type of Triangulation	Source/ Method	**Relation to Research**
Source Triangulation	UMKM owners, SIAPIK application, and finance	Ensuring that the SIAPIK report complies with banking requirements and actual conditions
Methode Triangulation	Interviews, Observations of Craftsmen's Manual Records, SIAPIK Aplication Output and Banking Credit Feasibility Standards	Comparing the input results in SIAPIK with the data in the manual book
Time Triangulation	Analysis at the beginning of the training compared to after two months of mentoring	Observing how consistently craftspeople handle financial data online

Source: data has been processed by the author (2025)

SIAPIK was first introduced to participants during the focus group discussion (FGD) session, which also functioned as an initial onboarding and validation forum. The analysis of FGD data identified several key themes. First, participants emphasised the need to simplify the application interface, particularly in terms of transaction input formats and financial report displays, so that they align with the daily practices of MSMEs. The village official (R1) acknowledged that existing reporting formats were perceived as too complex and agreed that a simplified structure focusing on basic cash inflows and outflows would be more appropriate. Second, the role of the village operator (R4) shifted from primarily entering data to providing technical assistance, particularly in verifying entries and supporting MSMEs during application use. However, participants indicated that this support was effective only when accompanied by direct guidance from digital volunteers (R5), suggesting the importance of continuous mentoring. Third, participants demonstrated increased engagement during the session, as evidenced by their ability to follow transaction input procedures and interpret basic financial outputs with guidance. These findings indicate that the usability of SIAPIK

depends not only on system design but also on the availability of simplified features and sustained user support.

The triangulation and validation process indicates that MSME participants perceived the SIAPIK application as more practical and transparent compared to their previous manual recording practices. During the FGD, participants were able to compare handwritten records with system-generated outputs and identify gaps in their existing documentation, particularly incomplete expense records. Several participants reported that the digital format reduced the effort required to track transactions, especially given the time constraints associated with weaving activities. In addition, participants demonstrated an improved ability to interpret basic financial information, such as distinguishing between revenue, costs, and net income, when supported by the application interface. However, some participants noted that consistent use remains challenging without ongoing assistance. These findings suggest that while SIAPIK improves the clarity and organisation of financial data, its effectiveness depends on usability and sustained user support rather than solely on system availability.

Table 4. Results of the FGD Discussion

No	Issue	Solution
1	The problem of weaving SMEs in Oebobo village is not only a lack of capital but also the absence of valid financial information.	The SIAPIK application signifies a transformation, serving not merely as a recording tool, but as a shift in the thinking of artisans
2	Psychological-technological concern (artisans experience strain due to the new application)	The implementation of the SIAPIK Application through a participatory mentoring method effectively converted problems into opportunities, enhancing work productivity and establishing a crucial basis for the sustainability of the digital financial information system in Oebobo Village.
3	What type of financial recording application can enhance the discipline of MSME operators in generating financial reports in accordance with established standards?	Weavers in Oebobo Village require technology that can transform traditional recording practices into verifiable digital financial data, rather than being compelled to acquire formal accounting.

Source: data has been processed by the author (2025)

3.4 Planning and Execution phase

The implementation phase reflects an early stage of digital adoption, where MSME participants began to use SIAPIK in their daily financial recording activities. During this phase, participants entered transaction data independently using their personal mobile devices while observing the resulting financial outputs. The researcher acted as a facilitator through participant observation, providing step-by-step guidance when users encountered specific technical issues, such as data input errors or navigation difficulties within the application. The planning process involved identifying the types of financial data required for recording, including daily revenues and operational expenses, which were agreed upon collaboratively with participants. In addition, participants indicated a preference for recording transactions after completing their production activities, as this timing was considered more practical within their workflow. These findings suggest that the integration of digital tools into MSME routines is influenced by usability, task alignment, and the availability of guided support rather than solely by system availability.

The implementation phase shows that MSME participants were able to input actual transaction data into the SIAPIK application using their own records. During this process, participants demonstrated an increasing ability to follow data entry procedures, although occasional guidance was still required, particularly in classifying transactions and navigating application features. The interaction between participants and the system also revealed differences in how financial values were interpreted, where

participants initially relied on informal estimations, while the application required more structured input. Through this process, participants gradually developed a better understanding of how their daily transactions were translated into financial reports. These findings indicate that hands-on use of the application plays a critical role in bridging the gap between informal financial practices and structured digital recording systems.

The implementation of the planning and action phases resulted in observable changes in participants' financial recording practices. During the trial sessions, most MSME participants were able to input daily transactions into the SIAPIK application using their own data, although occasional assistance was still required for transaction classification. Compared to prior practices, where records were incomplete and often based on estimation, the use of SIAPIK enabled more structured and consistent recording of cash inflows and outflows during the observation period. Participants also demonstrated an improved ability to review their financial data, particularly in identifying total revenues, expenses, and approximate profit values generated by the system (Hidayah et al., 2025). However, sustained use outside the assisted sessions remained limited, indicating that continued support is necessary to ensure consistent adoption. These findings suggest that while the intervention improves the structure and clarity of financial records, its effectiveness depends on ongoing facilitation and user familiarity rather than initial implementation alone.

The findings indicate that the adoption of the SIAPIK application among MSME participants remains at an early stage and is strongly influenced by external support mechanisms. Participants reported that initial use of the application was feasible during guided sessions; however, continued use depended on the availability of technical assistance and follow-up mentoring. Institutional support, particularly from local government and financial stakeholders, was perceived as important in facilitating adoption, especially in providing training and clarifying the relevance of digital financial recording to business operations. Despite these efforts, participants highlighted that the application would be more useful if continuously adapted to their operational needs, including simpler input features and clearer financial outputs. These results suggest that technology adoption is not solely determined by system availability, but also by the alignment between system design, user capacity, and sustained institutional support.

The findings indicate that, although various capacity-building initiatives for MSMEs have been introduced, the adoption of structured financial reporting remains voluntary and uneven. Participants highlighted the absence of clear regulatory requirements as one factor contributing to inconsistent financial recording practices. In addition, the effectiveness of digital tools such as SIAPIK was found to depend not only on system availability but also on continuous support from government and related institutions (Panjaitan et al., 2023). Several participants noted that training and technical assistance played a more immediate role in encouraging adoption than formal policy expectations. These results suggest that strengthening institutional support mechanisms—such as sustained mentoring, user-oriented system design, and accessible guidance—may be more effective in improving financial reporting practices than regulatory enforcement alone. Future research may further examine the role of policy integration and data governance in supporting long-term digital adoption among MSMEs.

Table 5. Transformation Action Matrix

Implementation Phase	Real Activities in Oebobo Village	Outcome
Input	The proprietor of the MSME inputs the data on weaving production costs	A precise production cost profile is accessible

Processing	SIAPIK converts data into automated journals	The simplification of accounting records for craftspeople
Output	The Profit and Loss Statement and Balance Sheet are accessible on the smartphones of MSME proprietors	The Digital Financial Information Base is accessible

Source: data has been processed by the author (2025)

4. CONCLUSION

The findings indicate that the implementation of SIAPIK through a participatory approach contributed to improvements in financial recording practices among weaving MSMEs in Oebobo Village. Participants demonstrated an increased ability to record transactions more systematically and to distinguish between key financial components such as revenues, operational costs, and basic profit estimates. The use of the application also supported greater visibility of production-related costs, including raw materials and routine expenses that were previously not consistently documented. In addition, participants showed initial signs of behavioural adjustment, particularly in their willingness to engage with structured financial recording during assisted sessions. However, the level of adoption remained partial, and continued use depended on ongoing guidance and user familiarity. These results suggest that while the intervention improves the organisation and clarity of financial data, sustained impact requires continuous support and gradual integration into daily business practices.

The feasibility analysis using the TELOS framework indicates that the SIAPIK application is generally suitable for use within the operational context of weaving MSMEs, particularly in terms of basic technical usability and alignment with simple financial recording needs. Rather than constituting full validation, the results reflect an initial assessment of feasibility based on user interaction and perceived practicality. The use of SIAPIK supports participants in organising transaction data more systematically and in reviewing basic financial information, such as revenues and expenses, which may assist in routine business decisions. However, several limitations were identified, including the need for feature adjustments to better accommodate the specific characteristics of the weaving subsector and the reliance on continued user assistance. Furthermore, while institutional support was perceived as important for sustaining adoption, the findings suggest that practical factors—such as usability, simplicity, and ongoing guidance—play a more immediate role in influencing consistent use. These results highlight the need for further development and contextual adaptation of digital financial tools to ensure their relevance and usability for MSMEs.

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