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Implementing a Digital Financial Management System and Simple Balance-Sheet Recording to Strengthen Financial Literacy among Culinary SMEs in City X

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Abstract

This study examines how an integrated digital financial management system and simplified balance-sheet routine can strengthen financial literacy among culinary small and medium-sized enterprises (SMEs) in City X. Because no primary interviews, observations, or enterprise records were supplied, the study adopts a qualitative documentary design rather than claiming a completed field intervention. The evidence corpus combines Indonesian regulatory and survey documents, accounting standards, international guidance, and recent empirical studies on digital accounting and SME finance. Directed qualitative content analysis was applied to identify mechanisms linking digital transaction capture, business-household fund separation, periodic reconciliation, and balance-sheet interpretation with financial knowledge, skills, attitudes, and behaviour. The analysis identifies five mutually reinforcing mechanisms: transaction visibility, classification discipline, accounting-equation comprehension, evidence-based decision routines, and digital-risk awareness. National data also reveal that financial inclusion continues to exceed financial literacy, indicating that access to digital finance does not automatically generate managerial capability. A staged implementation model is proposed: diagnostic assessment, account separation, digital capture, weekly reconciliation, monthly statement preparation, and reflective review. The study contributes a context-sensitive framework that treats technology and simplified accounting as a combined learning infrastructure rather than isolated tools. Field-based multiple-case research is required before outcome claims can be made for City X.

Keywords: digital financial management; financial literacy; culinary SMEs; simple balance sheet



Introduction

Micro, small, and medium-sized enterprises occupy a central place in Indonesia's urban economic system, while culinary businesses are among the most visible forms of household-based and owner-managed enterprise. Their operational characteristics—high transaction frequency, mixed cash and digital receipts, perishable inventory, daily purchasing, informal labour, and close interaction between household and business expenditure—make financial management both essential and difficult. A culinary SME can appear commercially active because sales occur every day, yet the owner may still be unable to distinguish revenue from cash balance, gross margin from net income, or business assets from personal possessions. Under these conditions, weak records are not merely an administrative deficiency; they restrict the owner's ability to evaluate liquidity, pricing, inventory loss, debt capacity, and business continuity (Yanthi et al., 2026).

Indonesia's expanding digital-payment infrastructure intensifies this issue. Bank Indonesia defines the Quick Response Code Indonesian Standard (QRIS) as a national standard intended to make QR-code transactions faster, convenient, affordable, secure, and reliable; it also positions QRIS as an entry point for MSMEs into the digital ecosystem and financial inclusion. Digital payments generate transaction traces that can potentially improve documentation, but the existence of a trace does not itself produce an accounting record. Funds may be split across cash drawers, bank accounts, electronic wallets, marketplaces, and delivery platforms, while platform fees and settlement delays create differences between recorded sales and cash received. Unless these flows are consolidated and classified, digitalization can increase the number of information channels without improving the quality of financial understanding.

The distinction between financial access and financial capability is visible in national survey data. The 2024 National Survey of Financial Literacy and Inclusion, jointly conducted by the Financial Services Authority (OJK) and Statistics Indonesia (BPS), reported a financial-literacy index of 65.43% and a financial-inclusion index of 75.02%. The 2025 survey reported respective indices of 66.46% and 80.51%, based on the continuity methodology. Thus, while both indicators improved, inclusion increased considerably faster than literacy. The gap is analytically important: an entrepreneur can hold an account, accept QR payments, use mobile banking, or access credit while still lacking the knowledge and behavioural routines required to manage those services productively (Rahman & Rachma, 2025).

Financial literacy is broader than familiarity with financial products. The OECD defines it as a combination of awareness, knowledge, skills, attitudes, and behaviours required to make sound financial decisions and achieve financial well-being. OJK's national measurement similarly covers knowledge, skills, confidence or beliefs, attitudes, and behaviour concerning financial products and services. For SME owners, these dimensions must be translated from personal finance into enterprise practice. Knowledge includes understanding assets, liabilities, equity, revenue, expenses, margins, and cash flow. Skill includes recording, reconciling, classifying, calculating, and interpreting. Attitude concerns discipline, prudence, willingness to delay withdrawals, and openness to evidence. Behaviour appears in repeated practices such

as separating funds, retaining documentation, preparing budgets, checking balances, and reviewing performance.

A simple balance sheet – more formally, a statement of financial position – provides a compact structure for linking these dimensions. The Indonesian SAK EMKM framework states that a statement of financial position presents assets, liabilities, and equity at the end of a reporting period and may include cash and cash equivalents, receivables, inventory, fixed assets, trade payables, bank debt, and equity. The framework also emphasizes the business-entity concept, under which the owner must separate personal wealth from the assets and results of the enterprise. This requirement is especially relevant to culinary SMEs because owner withdrawals, household purchases, business inventory, kitchen equipment, and personal property frequently overlap (Lee, 2025).

However, merely teaching owners the accounting equation is unlikely to transform practice. Conventional training often delivers concepts in a workshop without embedding them in the entrepreneur's daily workflow. Conversely, installing an accounting application without conceptual learning may result in incomplete input, misclassification, abandoned use, or uncritical dependence on software-generated outputs. Recent Indonesian evidence suggests that digital financial literacy, perceived usefulness, and perceived ease of use are positively associated with digital-accounting adoption. Other research reports that technology, organizational conditions, and environmental factors affect digital-accounting use, with digital literacy shaping part of the adoption process.

These studies imply that effective implementation must combine usable technology, relevant accounting categories, guided practice, and organizational habit formation.

The culinary context adds sector-specific demands. Sales can originate from dine-in customers, takeaway orders, catering, marketplace applications, and social-media channels. Costs include ingredients, packaging, cooking fuel, delivery subsidies, platform commissions, spoilage, employee payments, and equipment maintenance. A system designed for a trading or professional-service SME may therefore be unsuitable if it does not accommodate daily sales batches, ingredient purchases, inventory consumption, and multiple settlement channels. Simplicity is necessary, but excessive simplification can erase economically important distinctions. The design problem is to identify the minimum information architecture that owners can sustain and that still supports meaningful decisions (Anggraini et al., 2025).

The phrase “digital financial management system” in this study therefore refers to an integrated routine rather than a particular commercial application. Its components are: standardized transaction capture; classification of receipts, payments, assets, liabilities, and owner transactions; reconciliation of cash and digital channels; secure document retention; periodic reporting; and managerial review. This definition prevents technological determinism. A spreadsheet, mobile bookkeeping application, or cloud platform can support the routine, but no tool substitutes for accurate source data, owner engagement, internal controls, and interpretation.

Likewise, “simple balance-sheet recording” does not mean an isolated table produced once for a financing application. It means a recurring process through which the SME identifies what it controls, what it owes, and the residual claim of the owner at a

specific date. IFRS for SMEs describes financial position as the relationship among assets, liabilities, and equity and explains that the statement of financial position presents these elements at the end of a reporting period. Although many culinary microenterprises do not need the complexity of international reporting, the underlying logic is valuable: every financing decision, equipment purchase, inventory accumulation, debt repayment, and owner withdrawal changes the enterprise's financial position (Fujianti et al., 2025).

The problem addressed by this article is a misalignment among access, records, and learning. First, digital access expands faster than financial capability. Second, transaction records are fragmented across channels. Third, accounting education is frequently separated from the operational moment in which knowledge is used. Fourth, SMEs may judge performance from cash on hand without recognizing unpaid obligations, declining inventory, equipment consumption, or owner withdrawals. Fifth, empirical studies in Indonesia are dominated by cross-sectional quantitative models that estimate relationships among literacy, technology adoption, reporting quality, and perceived performance; they provide useful associations but less detail about the mechanisms through which owners learn from repeated recordkeeping.

A qualitative approach is appropriate because the focal issue concerns process, meaning, routines, and contextual fit rather than the estimation of a population effect. The inquiry asks how a combined digital-and-accounting practice can make financial concepts visible in everyday operations, what barriers may interrupt adoption, and which design principles are defensible for culinary SMEs. Nevertheless, research integrity requires a clear boundary. No interview transcripts, field notes, pre-post assessments, or enterprise ledgers from City X were supplied. City X is therefore retained as an anonymized application context, and the evidence reported here comes from documentary analysis. The article does not claim that named participants experienced improvement or that a completed intervention caused measurable outcomes (Muhammad Mubushar et al., 2025).

The study pursues four objectives. First, it identifies the conceptual and practical mechanisms through which digital transaction management and simple balance-sheet preparation can support financial literacy. Second, it synthesizes Indonesian institutional requirements and recent evidence relevant to SME digital accounting. Third, it develops a staged implementation architecture tailored to the transaction patterns of culinary enterprises. Fourth, it establishes qualitative indicators and data requirements for a later field-based evaluation in City X. These objectives shift the contribution from a generic recommendation to an auditable design proposition.

The study offers three contributions. Conceptually, it links financial literacy to accounting practice by treating literacy as a capability enacted through recurring routines rather than as knowledge measured only through a questionnaire. Methodologically, it demonstrates how regulatory documents, standards, national survey results, and empirical studies can be integrated through directed qualitative content analysis without fabricating local evidence. Practically, it proposes a minimum viable financial-management cycle that local government agencies, SME associations, universities, and financial-service providers can adapt for culinary businesses. The resulting framework remains provisional until tested through observations,

interviews, and enterprise records, but it provides a rigorous foundation for such testing (Sulhan, 2025).

Method

Research Design

The study adopts an interpretive qualitative approach, drawing on principles of meta-synthesis and thematic analysis to organize diverse qualitative and mixed-method findings into coherent themes. Meta-synthesis is appropriate when multiple small-scale studies exist on a phenomenon but have not yet been integrated into a conceptual framework, allowing the researcher to reinterpret and extend primary findings. In this case, the phenomenon of interest is technology-based learning mentoring aimed at enhancing motivation among elementary students in disadvantaged Indonesian regions (Creswell, 2021).

Data Sources and Sampling

Data sources consisted of peer-reviewed journal articles, conference papers, and policy documents accessible through major indexing services and national repositories focusing on Indonesian education and technology. Specific inclusion criteria were: (1) studies conducted in Indonesian elementary schools; (2) use of technology-based learning media (e.g., videos, interactive applications, educational games, AR, ICT platforms); (3) examination of student motivation, engagement, or related learning outcomes; and (4) relevance to disadvantaged or resource-constrained contexts, including explicit references to 3T or rural schools.

Representative studies meeting these criteria included qualitative observations of video-based learning in a rural elementary school, descriptive analyses of interactive media use to enhance motivation, case studies of digital-based learning media innovation in science and social science subjects, developmental research on AR-based educational media, systematic literature reviews of technology-based learning media, and policy-oriented discussions of ICT utilization models in 3T regions. Additional conceptual and empirical literature on SDT and student motivation was incorporated to provide theoretical grounding and interpretive lenses.

Data Collection Procedures

Data collection involved identifying relevant studies and documents using keyword combinations such as “technology-based learning media,” “student motivation,” “elementary school,” “Indonesia,” and “3T regions.” Searches were conducted in major educational databases, open-access repositories, and institutional websites. After screening titles and abstracts against inclusion criteria, full-text documents were obtained where available. Key sections—such as study context, intervention characteristics, reported outcomes related to motivation, and methodological details—were extracted into analytic memos.

For SDT-related literature, seminal theoretical and meta-analytic works were retrieved to clarify concepts of autonomy, competence, relatedness, and the motivation continuum, as well as to understand how these constructs have been operationalized in educational contexts. These texts provided a conceptual scaffold for coding and interpreting findings from the Indonesian technology-based learning studies.

Data Analysis

Data analysis followed an iterative thematic approach. First, descriptive coding was applied to each study to capture basic information about technology type, pedagogical practices, context (urban vs. rural; disadvantaged vs. resource-rich), and reported motivational or learning outcomes. Second, analytic coding focused on how technology use related to SDT needs: codes such as “autonomy support,” “competence building,” “relatedness enhancement,” “controlled motivation,” and “amotivation risks” were used to categorize passages describing student experiences and teacher practices.

Third, cross-study comparisons were conducted to identify recurring patterns and contextual variations. For instance, studies in rural or resource-constrained settings were compared to those in more advantaged schools to see whether similar motivational benefits occurred and what adaptations were required. Themes emerging from this process were grouped into higher-order categories representing key dimensions of technology-based learning mentoring in disadvantaged elementary contexts, such as “technology-mediated autonomy scaffolding,” “competence-focused digital practice,” “relationship-centered mentoring through technology,” and “infrastructure and capacity constraints.”

Throughout analysis, attention was paid to maintaining fidelity to primary authors’ interpretations while also re-contextualizing their findings in light of SDT and the specific focus on disadvantaged regions. The meta-synthesis thus generated a conceptual model rather than statistical generalizations, consistent with the qualitative orientation of the study.

To enhance trustworthiness, several strategies were employed. Triangulation was achieved by drawing on multiple types of sources—empirical case studies, developmental projects, systematic reviews, and policy documents—representing different perspectives on technology use in elementary education. Theoretical triangulation was provided by combining SDT with context-specific understandings of Indonesian educational policy and 3T initiatives.

Analytic rigor was supported by explicit documentation of coding categories and analytic decisions, ensuring that the move from descriptive codes to thematic interpretations could be traced. Reflexivity was maintained by recognizing that the present analysis does not involve direct fieldwork and is therefore limited by the scope and quality of available published studies. Rather than claiming exhaustive coverage, the article positions its findings as a grounded yet provisional model to be tested and refined in future empirical research.

Research design
The study employed a qualitative documentary design with directed content analysis. This design was selected because the research problem concerns institutional rules, implementation mechanisms, and patterns across existing evidence, while no primary dataset from City X was available. Directed analysis begins with sensitizing concepts derived from established frameworks—in this case financial knowledge, skills, attitudes, and behaviour; digital adoption; the business-entity concept; and the elements of financial position—and then allows additional themes to emerge from the documents. The design is interpretive rather than causal. It seeks a defensible

explanation of how and under what conditions an intervention may work, not an estimate of its average effect.

City X functions as an anonymized application setting. The article assumes an urban Indonesian context in which culinary SMEs receive cash and digital payments, but it does not attribute demographic, economic, or behavioural characteristics to an unidentified municipality. This boundary preserves transferability without inventing local facts. Before journal submission as a completed field study, the author must replace the documentary design with verified site information or retain the present subtitle and explicitly present the work as documentary research.

Corpus construction

The corpus was constructed purposively rather than statistically. Documents were included when they met at least one of five criteria: they defined financial literacy; reported recent Indonesian literacy or inclusion data; specified accounting requirements for SMEs; described the national digital-payment infrastructure; or presented recent empirical evidence on digital accounting, financial literacy, reporting quality, or SME performance in Indonesia. Priority was given to primary institutional sources from OJK, BPS, Bank Indonesia, the Indonesian Institute of Accountants, the OECD, and the IFRS Foundation. Peer-reviewed or formally published Indonesian studies were then used to compare empirical patterns and identify implementation factors.

The core institutional documents comprised the OJK–BPS SNLIK releases for 2024 and 2025, Bank Indonesia’s QRIS guidance, IAI’s SAK EMKM materials, the OECD financial-literacy framework, and IFRS for SMEs guidance. The empirical layer included studies from Medan, South Sulawesi, North Sumatra, Bali, Sleman, Surakarta, Bandung, and conceptual work focused on Jakarta. The geographic diversity was useful for analytic transfer, but it does not establish representativeness for City X. Documents published or available through 2026 were considered, with emphasis on recent evidence while retaining authoritative standards.

Analytical procedure

Analysis proceeded in six stages. First, each document was read for its purpose, unit of analysis, definitions, method, and key conclusions. Second, relevant passages were extracted into an evidence matrix. Third, passages were coded against the initial categories: financial-literacy dimension; digital function; accounting function; adoption condition; decision outcome; risk; and institutional support. Fourth, open coding was used to capture recurrent ideas not fully represented in the initial framework, including fragmented transaction channels, owner–business fund mixing, reconciliation, habit formation, and minimum sufficient complexity. Fifth, codes were compared across institutional and empirical sources to identify convergence, qualification, and contradiction. Sixth, themes were translated into an implementation sequence and proposed field indicators.

Coding treated the document, not an individual entrepreneur, as the unit of evidence. References to “owners” in the results describe mechanisms reported or implied by the corpus, not statements made by City X participants. Theme counts, where shown, indicate how many selected evidence groups supported a theme. They are descriptive

aids and must not be interpreted as effect sizes, prevalence estimates, or statistical significance.

The primary interpretive question was: How can a digital financial-management routine, combined with simple balance-sheet recording, create repeated learning opportunities that strengthen the financial capability of culinary SME owners? Three subsidiary questions guided analysis: (1) Which information and behavioural gaps should the system address? (2) What implementation conditions enable or constrain sustained use? (3) Which observable indicators should be collected in a later field study to assess change without overstating causality?

Quality and trustworthiness

Credibility was strengthened through source triangulation. Definitions and requirements were anchored in institutional sources, while implementation propositions were compared against multiple empirical studies. For example, the proposition that ease of use matters was not accepted solely from a conceptual model; it was checked against adoption research

. The proposition that digitalization does not automatically produce sustainability was retained because empirical findings indicate that reporting quality can mediate outcomes and that some digital variables lack a direct significant relationship with sustainability. Negative or qualifying evidence was therefore treated as analytically valuable.

Dependability was supported by an explicit code structure and staged procedure. Confirmability was pursued by separating sourced findings from analytical propositions. National percentages and accounting requirements are directly traceable to official documents, whereas the six-stage implementation model is an interpretation generated through synthesis. Transferability is addressed through a detailed description of the proposed routine and the culinary operating context, allowing researchers to judge whether it is relevant to another municipality or subsector.

A formal field study should add at least two coders for part of the transcript corpus, maintain a coding audit trail, document code revisions, and conduct case-based member reflection with participants. Mechanical inter-coder agreement should not replace interpretive dialogue, but disagreement logs can reveal ambiguous categories. Researchers should also compare interview claims against transaction records and observation because self-reported literacy and actual practice may diverge.

Ethics and integrity

No human participants were recruited, no private enterprise records were accessed, and no personal data were processed for this documentary study. Consequently, the article contains no invented quotations, participant profiles, enterprise names, pre-post scores, or local balance-sheet values. This is an important integrity condition. Fabricated qualitative quotations or simulated company data would falsely imply fieldwork and are unsuitable for journal submission.

A later intervention in City X would require informed consent, secure handling of commercially sensitive records, controlled access to digital credentials, and an ethics determination from the responsible institution. Participants should never be asked to disclose passwords, personal identification numbers, one-time passwords, or complete account credentials. Reports should anonymize enterprises, aggregate

commercially sensitive figures where necessary, and define a retention and deletion schedule. If trainers assist with application setup, role boundaries and data-access permissions must be documented.

Proposed field extension

The documentary model is designed to support a future qualitative multiple-case study. A defensible sample would use maximum-variation purposive selection across enterprise scale, years of operation, payment-channel mix, owner gender, prior bookkeeping experience, and degree of marketplace dependence. Sampling should continue until additional cases no longer materially extend the explanatory themes, rather than stopping at a predetermined number solely for convenience.

Data collection should combine owner interviews, employee interviews where relevant, non-participant observation of closing and reconciliation routines, screenshots or exports with sensitive details redacted, document review, and monthly reflective meetings. A minimum intervention window of three monthly closing cycles would allow researchers to observe initial adoption, breakdown, correction, and emerging habit. Outcome language should remain cautious: qualitative evidence can support claims about perceived learning, changed routines, and plausible mechanisms, but not population-wide causal effects.

Analytical boundaries

The method has four limitations. First, it cannot verify the actual financial literacy, digital readiness, or reporting practice of culinary SMEs in City X. Second, publication bias may favour studies reporting positive technology relationships. Third, studies use different constructs and outcome measures, reducing direct comparability. Fourth, documentary analysis can specify a plausible implementation theory but cannot establish usability under local infrastructure, language, cost, or time constraints. These boundaries are carried into the interpretation of results.

Result and Discussion

National capability gap

The documentary analysis first identified a persistent gap between access to financial services and the capability to use them. Table 1 presents the latest directly comparable SNLIK figures used in this study. Financial literacy rose from 65.43% in 2024 to 66.46% in 2025, an increase of 1.03 percentage points, while financial inclusion rose from 75.02% to 80.51%, an increase of 5.49 percentage points. The literacy-inclusion gap therefore widened from 9.59 to 14.05 percentage points. These national indices are not measurements of City X or culinary SMEs, but they establish the policy relevance of interventions that connect access with capability.

Table 1. Indonesian financial-literacy and financial-inclusion indices

Survey year	Financial literacy	Financial inclusion	Inclusion minus literacy
2024	65.43%	75.02%	9.59 percentage points
2025	66.46%	80.51%	14.05 percentage points

Evidence structure

The second result was a consistent distinction between infrastructure, adoption, reporting, and outcome. Bank Indonesia's QRIS infrastructure standardizes payment acceptance, but it does not prepare accounting statements. Adoption studies show that usefulness, ease of use, literacy, organizational conditions, and environmental support shape whether SMEs use digital accounting. Reporting studies indicate that higher-quality information can mediate the relationship between digital tools and sustainability. The evidence therefore forms a sequence rather than a single direct pathway: infrastructure enables data capture; adoption determines use; accounting routines transform transactions into information; interpretation supports decisions; and decisions may contribute to resilience.

Table 2. Documentary Evidence Matrix

Evidence source	Design or authority	Core finding used in this study	Analytical implication
OJK-BPS SNLIK 2024	National survey, 10,800 respondents	Literacy 65.43%; inclusion 75.02%	Access exceeds capability
OJK-BPS SNLIK 2025	National survey, 10,800 respondents	Literacy 66.46%; inclusion 80.51%	The access- capability gap remains material
Bank Indonesia QRIS	Payment-system authority	QRIS standardizes interoperable QR payments and supports MSME inclusion	Payment data can become an accounting input
IAI SAK EMKM	Indonesian accounting standard	Position statement includes assets, liabilities, and equity; entity separation is fundamental	Literacy training should connect categories with fund separation
South Sulawesi adoption study	Survey of 155 MSMEs	Literacy, usefulness, and ease of use positively influence digital-accounting adoption	Begin with simple, visibly useful tasks
Medan digital- accounting study	Survey of 95 MSMEs	Technology, organization, and environment influence use	Adoption requires organizational and ecosystem support

Evidence source	Design or authority	Core finding used in this study	Analytical implication
North Sumatra study	Cross-sectional survey of 200 owners/managers	Digital-accounting use relates positively to reporting quality, literacy, and perceived performance	Reporting quality is a key intermediate capability
Bali reporting study	Survey of 100 MSME actors	Reporting quality links literacy and digital systems with sustainability; not all direct digital effects are significant	Avoid technological determinism
Surakarta cake-industry study	Quantitative survey	Literacy was positively related to performance; digital payments alone were not significant	Payment acceptance without managerial capability may be insufficient

Table 2 shows that the evidence is convergent but not uniform. Most studies support a positive role for literacy or digital accounting, yet the Bali and Surakarta findings qualify direct-effect claims. These qualifications strengthened the emerging interpretation that the combined routine – not payment technology in isolation – is the relevant intervention unit.

Five learning mechanisms

Five mechanisms emerged from the directed and open coding. The first was transaction visibility. Digital receipts and structured entries make transactions retrievable, date-stamped, and classifiable. Visibility reduces dependence on memory and creates a basis for checking discrepancies. For culinary businesses, visibility must extend across cash, QRIS, bank transfer, marketplace settlement, and e-wallet channels. A system that records only QRIS receipts remains incomplete because cash sales, platform deductions, and supplier payments can materially alter the daily position.

The second mechanism was classification discipline. Recording requires the owner to assign each event to a category. This act converts abstract financial concepts into repeated decisions: a refrigerator is an asset rather than an ingredient expense; owner cash introduced into the business is capital rather than sales; a withdrawal for household consumption is an owner drawing rather than operating cost; supplier credit creates inventory and a payable. Misclassification can initially expose knowledge gaps, which then become teachable moments.

The third mechanism was accounting-equation comprehension. A simple balance sheet makes visible that acquiring an asset does not always reduce equity: a debt-financed equipment purchase increases both assets and liabilities. Repaying loan principal reduces cash and liabilities but is not the same as an operating expense. Profit can increase equity even when cash is tied up in receivables or inventory. These relationships help owners move beyond “cash remaining” as the sole indicator of performance.

The fourth mechanism was evidence-based decision routine. Reports produce value only when reviewed. Weekly reconciliation supports operational control, while monthly balance-sheet and income-statement review supports pricing, purchasing, debt, withdrawal, and investment decisions. The review should ask a small set of stable questions: Is cash consistent with records? Which channel generated the strongest net contribution after fees? Is inventory increasing faster than sales? Which obligations fall due before expected receipts? Can the business afford an owner withdrawal without weakening working capital?

The fifth mechanism was digital-risk awareness. Digital financial literacy includes safe and effective use, not only transaction speed. A management system introduces risks relating to password sharing, phishing, unauthorized access, device loss, data backup, and privacy. Security instructions must therefore be integrated into bookkeeping training. A technically accurate ledger built on unsafe credential practices would not represent improved financial capability.

Table 3. Thematic synthesis and observable indicators

Theme	Mechanism	Evidence base	Proposed field indicator
Transaction visibility	Consolidates fragmented payment evidence	QRIS infrastructure and digital-accounting	Share of sales channels reconciled weekly
Classification discipline	Converts concepts into repeated categorization	SAK EMKM and reporting-quality evidence	Correct classification of sampled transactions
Entity separation	Distinguishes owner and enterprise resources	IAI business-entity requirement	Separate account/cash box and identifiable drawings
Accounting-equation comprehension	Links events to assets, liabilities, and equity	IAI and IFRS guidance	Owner can explain the effect of common transactions

Theme	Mechanism	Evidence base	Proposed field indicator
Decision routine	Converts reports into managerial action	Literacy-behaviour framework and SME evidence	Documented monthly decisions based on reports
Digital-risk awareness	Protects data, funds, and continuity	Digital-financial-literacy literature	Use of access controls, backup, and credential rules

Table 3 converts themes into indicators suitable for later qualitative fieldwork. The indicators are behavioural and documentary rather than solely perceptual. For example, an owner's claim that funds are separated should be compared with account structure and transaction samples. Similarly, conceptual understanding should be examined through scenario questions rather than self-rating alone.

Minimum balance-sheet architecture

The analysis produced a minimum balance-sheet architecture aligned with SAK EMKM. IAI identifies cash and cash equivalents, receivables, inventory, fixed assets, trade payables, bank debt, and equity as relevant line items

. For culinary SMEs, the categories should be translated into familiar operational language without changing their accounting meaning. Digital-wallet and marketplace-settlement balances can be grouped with cash equivalents only when they are readily available; unsettled or restricted amounts may require separate tracking for operational clarity.

Table 4. Proposed simple statement of financial position for a culinary SME

Section	Minimum line item	Culinary-business interpretation	Supporting record
Current assets	Cash on hand	Till and petty cash counted at closing	Cash-count sheet
Current assets	Bank and e-wallet balances	Business accounts used for receipts and payments	Statements or exports
Current assets	Settlement receivables	Amounts due from marketplaces or delivery platforms	Platform settlement report
Current assets	Trade receivables	Unpaid catering or customer invoices	Receivables list

Section	Minimum line item	Culinary-business interpretation	Supporting record
Current assets	Inventory	Ingredients, beverages, and packaging on hand	Count sheet and purchase evidence
Non-current assets	Equipment and furniture	Stoves, refrigerators, display units, tables, and delivery equipment	Asset register
Current liabilities	Trade payables	Unpaid supplier invoices	Payables list
Current liabilities	Accrued obligations	Wages, utilities, rent, or taxes incurred but unpaid	Obligation schedule
Financing liabilities	Bank or other business debt	Outstanding principal for enterprise financing	Loan statement
Equity	Owner capital and accumulated results	Owner contributions plus retained results less drawings	Capital and drawings record

Table 4 is a schema, not a fabricated enterprise statement. No monetary values are presented because no City X ledger was provided. In a field intervention, each figure must be traceable to a supporting record, count, statement, or defensible estimate. The balance sheet should reconcile to the accounting equation, while a separate income statement captures revenue and expense for the period.

Staged implementation model

The fifth result was a six-stage implementation sequence. Stage 1, diagnostic mapping, identifies payment channels, recordkeeping practices, account ownership, recurring obligations, user skills, device access, and the owner's decisions. The output is a one-page process map, not a literacy score alone. This stage prevents trainers from installing tools that do not match actual workflows.

Stage 2, entity and account separation, establishes a designated business cash box and, where feasible, a business bank or e-wallet arrangement. Opening assets, liabilities, and owner capital are identified. Personal transactions that pass through the business system are coded transparently as drawings or contributions rather than hidden in operating categories. This stage operationalizes IAI's business-entity principle

Stage 3, minimum viable digital capture, introduces a limited chart of accounts and daily sales batches by channel. Receipts and payments are entered or imported, evidence is photographed or stored, and consistent naming rules are applied. The application should be selected based on usability, exportability, offline resilience

where relevant, cost, access control, and compatibility with existing devices—not brand popularity.

Stage 4, weekly reconciliation, compares recorded sales and expenses against cash counts, bank movements, QRIS settlements, platform reports, and outstanding receivables or payables. Differences are investigated and logged. Reconciliation is the control point that distinguishes bookkeeping from mere data entry. It also reveals settlement delays, duplicate entries, omitted cash sales, unrecorded fees, and personal withdrawals.

Stage 5, monthly statement preparation, closes the period, counts inventory, updates receivables and payables, reviews equipment changes, prepares a simple income statement and statement of financial position, and checks that assets equal liabilities plus equity. The first months should prioritize completeness and interpretability rather than sophisticated accrual adjustments. Complexity can be added after the routine stabilizes.

Stage 6, reflective decision review, converts reports into action. The owner and facilitator document at least one operational and one financial decision, the evidence used, expected consequence, and date for review. Examples include renegotiating a supplier term, revising menu price, limiting drawings, reducing slow-moving stock, changing payment-channel promotion, or postponing equipment finance. This stage closes the learning loop between data and behaviour.

Table 5. Six-stage implementation and evidence trail

Stage	Core activity	Immediate output	Literacy dimension
1. Diagnostic mapping	Map channels, records, obligations, and decisions	Baseline process map	Knowledge and confidence
2. Entity separation	Separate funds; establish opening position	Opening balance sheet and owner-transaction rule	Attitude and behaviour
3. Digital capture	Record transactions with evidence	Searchable daily ledger	Skill
4. Reconciliation	Match ledger to cash and digital statements	Difference log and corrections	Skill and behaviour
5. Monthly closing	Prepare income and position statements	Monthly report package	Knowledge and skill
6. Reflective review	Link reports to documented decisions	Decision log	Attitude and behaviour

The sequence is intentionally cumulative. An enterprise should not be judged by dashboard use before its payment channels and opening balances are understood. Nor should the intervention begin with ratio analysis while owner and business funds remain inseparable. The model treats discipline as a prerequisite for interpretation.

Adoption conditions and failure modes

Four enabling conditions were identified. First, the tool must be easy enough for daily use and visibly relevant to owner decisions, consistent with Indonesian adoption evidence. Second, a responsible person and a backup person should be named, even in a family enterprise. Third, the system must allow data export and evidence retrieval so that records do not become trapped in an application. Fourth, periodic mentoring should shift from trainer-led correction to owner-led explanation, supporting self-efficacy and habit formation

The analysis also identified recurrent failure modes. Data-entry abandonment occurs when the chart of accounts is too detailed or the owner cannot see immediate benefit. Digital fragmentation occurs when the bookkeeping application records some channels but ignores cash or marketplaces. False accuracy occurs when a polished report is generated from incomplete or misclassified entries. Household leakage occurs when personal spending remains hidden within business expense. Report non-use occurs when monthly statements are produced but no decisions are recorded. Security exposure occurs when convenience leads to shared credentials or uncontrolled device access.

These failure modes indicate that adoption should not be measured only by login frequency or application installation. Sustained capability is better represented by completeness, reconciliation, classification accuracy, owner explanation, decision use, and security practice. The result is a process-based conception of financial literacy: the owner demonstrates literacy through what the enterprise repeatedly does with financial information.

Discussion

From access to capability

The primary interpretation is that digital financial infrastructure creates a necessary but insufficient condition for SME financial capability. QRIS and other channels improve transaction convenience and can generate electronic traces

, yet the national data show that financial inclusion remains substantially higher than literacy. The intervention proposed here addresses the gap by placing an interpretive layer between transaction access and managerial action. Digital data become educationally valuable only after they are consolidated, classified, reconciled, and discussed (Yanthi et al., 2026).

This interpretation helps explain mixed empirical findings. If digital payments are measured as an independent capability, their relationship with performance may appear weak or inconsistent, as reported in the Surakarta cake-industry study. Payment services can increase convenience or sales opportunity, but they can also introduce fees, delayed settlements, refunds, and fragmented accounts. When the owner lacks a reconciliation process, more digital transactions may create more records without producing better information. The relevant mechanism is therefore

not “digital payment leads to performance” but “digital payment data, when integrated with accounting and decision routines, can strengthen information quality and managerial control.”

The Bali evidence provides a complementary insight: reporting quality can mediate relationships involving digital banking and accounting systems, while some direct paths to sustainability are not significant. This supports the sequence identified in the results. Technology influences outcomes through intermediate organizational capabilities. A training programme that measures only application adoption may therefore declare success too early. The stronger question is whether adoption produces timely, complete, understandable, and decision-relevant information (Idrus & Rastina, 2025).

Accounting as experiential learning

The second interpretation is that bookkeeping can function as experiential financial education. Financial literacy frameworks commonly distinguish knowledge, behaviour, and attitudes, but implementation programmes often teach these dimensions separately. The proposed model integrates them in a single cycle. Classification uses knowledge; entry and reconciliation require skill; fund separation and regular closing express attitude; and repeated review establishes behaviour. Learning is embedded in operational work rather than appended as a classroom exercise.

The balance sheet is particularly useful because it challenges cash-based intuition. Culinary SME owners may see a strong bank balance and infer profitability even when supplier obligations are unpaid. They may interpret an equipment purchase as an immediate operating loss or treat loan proceeds as income. Preparing a statement of financial position makes obligations, resources, and residual ownership visible at the same date. When paired with an income statement, it clarifies why profit, cash, and equity move differently (Putri & Piatrini, 2026).

The educational benefit does not depend on technical terminology alone. Indeed, excessive jargon may undermine confidence. What matters is conceptual accuracy expressed in operational language. “Money owed by catering customers” can introduce receivables; “supplier invoices not yet paid” can introduce payables; “owner money taken for household use” can introduce drawings. Over time, formal terminology can be layered onto these meanings. This progression is consistent with minimum sufficient complexity: simplification should reduce cognitive burden without distorting the transaction.

Entity separation as mechanism

The business-entity concept emerged as the central behavioural mechanism. IAI explicitly requires separation of personal and enterprise wealth for entities applying SAK EMKM. In practice, separation improves more than formal compliance. It makes revenue measurable, preserves working capital, clarifies drawings, improves debt assessment, and allows the owner to compare periods. Without it, even accurate transaction entry cannot reliably distinguish enterprise performance from household consumption (Azka Syifaul Maula et al., 2026).

Separation should not be presented as a binary condition that only formally incorporated businesses can achieve. A microenterprise can begin with a designated

cash box, a dedicated sub-account where permitted, a rule for owner withdrawals, and a weekly transfer policy. The crucial feature is traceability. If a personal account must temporarily receive business funds, transactions should still be marked as business receipts and personal movements should be coded transparently. The intervention should recognize constraints while moving progressively toward cleaner boundaries. This mechanism also has implications for owner identity. In many culinary businesses, the owner views business cash as immediately available household income. Reclassification of withdrawals may initially feel restrictive or artificial. Trainers should therefore explain that separation does not deny ownership; it enables the owner to see whether withdrawals are supported by earnings and liquidity. The behavioural objective is not accounting purity but informed control.

Technology selection

The findings reject a software-first approach. Adoption evidence emphasizes perceived usefulness, ease of use, digital literacy, organizational conditions, and environmental support. A suitable platform for City X should therefore be selected after workflow diagnosis. Evaluation criteria should include: ability to record cash and digital channels; customizable but limited categories; Indonesian-language usability; export to common formats; attachment of evidence; user permissions; backup; affordability; and the ability to prepare or support a simple income statement and balance sheet (Ulfah et al., 2026).

Vendor lock-in is a material concern for small firms with limited bargaining power. If transaction histories cannot be exported, migration becomes costly and the enterprise may lose access when subscriptions lapse. Data portability is therefore part of financial capability. A basic spreadsheet may be preferable to a sophisticated platform when transaction volume is low and the owner can maintain controls. Conversely, a spreadsheet may become unsafe or error-prone when multiple users, high transaction volumes, and marketplace integrations are involved. Tool choice should follow complexity, not aspiration.

Security must also be treated as a management process. Digital-financial-literacy definitions emphasize safe and effective use. Practical controls include separate user accounts, strong device locks, restricted permissions, regular backup, verification of settlement accounts, and a prohibition on sharing one-time passwords. Training evaluations should test whether participants can recognize social-engineering risks and recover records after device loss, not merely whether they can enter a sale (Listiani & Alliyah, 2026).

Sector-specific design

Culinary SMEs require a design that reflects perishable inventory and multichannel sales. Weekly or monthly inventory counts provide an approximation of ingredients and packaging on hand, but owners also need simple waste categories for spoilage, production error, employee meals, and promotional samples. If all ingredient purchases are treated as immediate expense without any closing inventory adjustment, monthly margins may be distorted when stock levels change materially. The sophistication of inventory measurement can increase gradually, but the system should at least make stock movement discussable.

Marketplace and delivery-platform settlements deserve separate reconciliation. Gross customer order value may differ from the amount deposited because of commissions, promotional contributions, delivery adjustments, refunds, and withholding. Recording only the net deposit understates sales and conceals channel cost. For managerial purposes, the owner should see gross channel revenue, platform-related deductions, and net settlement. This information supports pricing and channel decisions even when the statutory reporting format is simple (Rono et al., 2026).

High-frequency low-value transactions also justify batch recording. Requiring every cash sale to be entered manually may produce fatigue and abandonment. A daily sales summary supported by point-of-sale totals, order sheets, or numbered receipts can be appropriate, while large catering invoices and credit transactions should remain individually identifiable. The principle is proportional evidence: sufficient detail for control and decision-making without imposing an unsustainable burden.

Interpretation of improvement

The title refers to strengthening financial literacy, but improvement should not be reduced to a single post-training score. A comprehensive evaluation should examine at least four domains. Cognitive change concerns whether the owner can explain key concepts and transaction effects. Procedural change concerns whether records are complete, timely, and reconciled. Behavioural change concerns separation, regular closing, planning, and security. Decision change concerns whether reports inform documented choices.

Qualitative evidence can establish plausible contribution when changes align temporally with the intervention, participants explain the mechanism, records corroborate new routines, and alternative explanations are considered. For example, if an owner begins weekly reconciliation after training, identifies previously unnoticed platform deductions, and changes menu prices based on the documented cost, the chain provides credible process evidence. It still does not prove that the intervention alone caused improved profitability. Market demand, input prices, seasonality, and other support programmes may also contribute (Mardiyani et al., 2026).

A later study could strengthen inference with an embedded mixed-method design. Standardized literacy items could be administered before and after the programme, while ledger completeness, reconciliation differences, report timeliness, and decision logs provide behavioural evidence. Comparison cases or staggered implementation could improve attribution. However, such additions must not displace qualitative analysis of why owners adopt, adapt, or abandon the routine.

Institutional implications

Local government agencies should move beyond one-off seminars and subsidized application access. The six-stage model suggests a mentoring architecture organized around closing cycles. A facilitator's role is to help the enterprise map flows, establish separation, correct classifications, reconcile channels, prepare statements, and interpret results. Completion should be defined by demonstrated routines and an evidence trail rather than attendance.

Universities can contribute through supervised accounting clinics. Students, under professional and ethical oversight, can assist with opening-balance reconstruction, transaction coding, and monthly review while documenting implementation barriers.

Such programmes must protect confidentiality and avoid using unverified SME figures in publications. Standardized templates and anonymized process data can support learning without exposing commercially sensitive information.

Financial-service providers and bookkeeping vendors should design interoperable outputs. Because QRIS is intended as an inclusion gateway, merchant interfaces could make settlement data easier to export and classify. Providers should disclose fees and settlement timing clearly. Bookkeeping systems should support import of standardized transaction files, but automatic classification should remain reviewable; opaque automation may reproduce errors at scale.

SME associations can support peer learning. Owners may be more willing to maintain routines when examples are sector-specific and when peers discuss concrete decisions rather than abstract accounting rules. Peer sessions can compare methods for daily sales batches, inventory counts, marketplace reconciliation, and drawings policies without requiring disclosure of full financial statements. This arrangement supports habit formation and normalizes financial discipline.

Theoretical contribution

The study proposes an access-record-interpret-act model. Access refers to participation in financial and payment systems. Record refers to the structured capture and classification of transactions. Interpret refers to reconciliation, statement preparation, and explanation of relationships among cash, profit, assets, liabilities, and equity. Act refers to decisions and repeated behaviours. Financial literacy is strengthened not at a single point but through movement across the entire cycle.

This model extends technology-acceptance reasoning by specifying what happens after adoption. Perceived usefulness and ease of use help explain initial use, but sustained value depends on data quality, controls, and interpretation. It also extends conventional literacy frameworks by identifying accounting artefacts—the ledger, reconciliation sheet, balance sheet, income statement, and decision log—as mediating learning devices. These artefacts make knowledge actionable and behaviour observable.

The model further explains why direct relationships between digitalization and sustainability may be inconsistent. If any link in the chain is weak, access may not become action. A business can accept digital payments but fail to record fees; it can maintain a ledger but never reconcile; it can produce reports but not understand them; or it can understand reports but continue uncontrolled withdrawals. The intervention must therefore diagnose the weakest link rather than assume a uniform literacy deficit.

Limitations and agenda

The documentary design cannot establish that the proposed model improves literacy among actual culinary SMEs in City X. The framework should be treated as a theoretically and institutionally grounded proposition. Local language, digital connectivity, owner education, enterprise scale, gendered control of finances, and platform dependence may change implementation. Field research must be open to mechanisms not identified here.

The evidence base also contains many quantitative cross-sectional studies and relatively limited longitudinal qualitative work. Positive associations may reflect self-selection: more capable enterprises may be more likely to adopt digital accounting.

Perceived performance can differ from verified financial outcomes. Future research should combine transaction records with interviews and observation, examine abandonment as well as adoption, and follow enterprises across multiple closing periods.

Finally, a “simple” balance sheet can become misleading if simplification omits material obligations or invents asset values. Opening balances should be reconstructed cautiously, with uncertainty documented. Equipment values should follow the applicable reporting basis; receivables should be reviewed for collectability; and inventory counts should be supported by a consistent method. Facilitators must resist the pressure to produce polished statements when source records are weak

Conclusion

This qualitative documentary study explains how digital financial management and simplified balance-sheet recording can operate as an integrated learning infrastructure for culinary SMEs. The proposed mechanism is sequential: digital channels create transaction evidence; structured recording improves visibility; classification and fund separation develop accounting discipline; reconciliation tests reliability; financial statements organize meaning; and reflective review connects information with behaviour and decisions. Indonesian national data show that financial inclusion continues to exceed financial literacy, reinforcing the need to complement access with capability-building. The analysis proposes six implementation stages: diagnostic mapping, entity separation, minimum viable digital capture, weekly reconciliation, monthly statement preparation, and reflective decision review. A system should be evaluated through completeness, classification accuracy, reconciliation, owner explanation, decision use, and digital-security practice—not installation alone. The simple balance sheet must remain connected to an income statement and supporting records, consistent with SAK EMKM principles.

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