

Design of a SAK EMKM-Based Accounting Information System for Laundry MSME to Improve the Quality of Financial Information

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ABSTRACT

The laundry sector faces financial management challenges due to manual transaction recording, weak internal controls, and limited compliance with SAK EMKM. The study aims to design an integrated SAK EMKM-based Accounting Information System (AIS) to enhance financial information quality at Laundry X MSME. Using Research and Development (R&D) methodology with a qualitative descriptive approach, data were collected through observation, interviews, and documentation to identify user needs and system weaknesses. The resulting blueprint includes flowcharts, Data Flow Diagrams (DFD), Entity Relationship Diagrams (ERD), database structure, interface design, Chart of Accounts (COA), and financial statement formats aligned with SAK EMKM. The system integrates customer intake, transaction recording, cash management, and financial reporting through a single data entry concept (where each transaction is entered only once and then automatically processed to generate integrated financial information), enabling automatic generation of journals, ledgers, and financial statements. Conceptual evaluation confirms that all user functional requirements are accommodated, and the design implements COSO internal control components via access rights settings, transaction validation, integrated information provision, and monitoring mechanisms. This blueprint provides a foundation for developing an AIS application that can improve operational efficiency, financial information quality, and decision-making for laundry service MSMEs. Practically, the blueprint gives Laundry X a concrete reference for improving its financial recording and reporting, and can be adapted by similar laundry MSMEs for digitalizing their record-keeping.

Keywords: Accounting Information System, Internal Control, Laundry MSME, Quality of Financial Information, SAK EMKM

1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) have a strategic role in the Indonesian economy, contributing more than 60% of the national Gross Domestic Product (GDP) and absorbing around 97% of the workforce (Ministry of Finance of the Republic of Indonesia, 2023). However, amid the development of Industrial Revolution 4.0 and Society 5.0, most MSMEs still face obstacles in utilizing information technology, particularly in the digitalization of financial management. In fact, a digital-based accounting information system (AIS) has been proven able to produce financial information that is more accurate, relevant, and timely, thereby supporting business decision making. Various studies show that the application of AIS has a positive effect on improving the performance and success of MSME businesses (Nababan et al., 2025; Suhendi et al., 2022).

Among the various MSME sub-sectors that could benefit from AIS adoption, the laundry service business is a relevant context to examine, given its rapid growth alongside its continued reliance on manual administrative processes. One MSME sector that has experienced rapid growth is the laundry service business. Changes in people's lifestyles that increasingly prioritize efficiency have made laundry services no longer seen as a premium service, but have become a daily necessity for various groups. Although business opportunities are getting bigger, many laundry businesses still face problems in operational and financial management. The administrative process is generally still carried out manually, making it prone to recording errors, loss of

transaction data, cost calculation errors, and weak internal control. This condition makes it difficult for business owners to monitor cash flow, know the business's profit accurately, and prepare financial statements as a basis for decision making.

The implementation of an Accounting Information System is one solution to overcome these problems. In addition to functioning as a medium for recording transactions, AIS also supports internal control, improves the quality of financial information, and speeds up the process of preparing financial statements. Previous research shows that a web-based accounting information system is able to improve the effectiveness of transaction recording and financial statement preparation (Maulidiawati et al., 2025), while system design in laundry businesses can improve recording accuracy and operational efficiency (Ramadana & Vellin, 2024). Other research results also prove that the development of a SAK EMKM-based AIS produces more reliable financial information and supports the sustainability of MSME businesses (Aprilia et al., 2025; Karimah, 2022; Osesoga et al., 2024; Permatasari et al., 2025; Winata & Suwandi, 2025).

However, previous research is still dominated by the implementation of applications or system development for only certain parts of the business process. Research that specifically designs a SAK EMKM-based Accounting Information System for laundry service MSMEs with a structured system design approach that integrates the full cycle from transaction recording through financial reporting is still relatively limited. This gap points to the need for a system design that connects the customer intake process, transaction recording, cash management, up to the preparation of financial statements in one integrated system.

The results of preliminary observations at Laundry X show that all administrative and financial activities are still carried out manually using notebooks and simple receipts. Transaction recording is not yet integrated, the division of tasks between employees is not yet clear so that there is duplication of functions, and financial statements have not been prepared in accordance with the Financial Accounting Standards for Micro, Small, and Medium Entities (SAK EMKM). As a result, the customer service process becomes less efficient, the risk of recording errors and misuse of cash increases, and the business owner has difficulty obtaining accurate financial information as a basis for decision making. This condition is not yet in line with the concept of an Accounting Information System that emphasizes the importance of business process integration, information quality, and internal control (COSO, 2013; Hall, 2019; Romney & Steinbart, 2020).

Based on these conditions, this research aims to develop a SAK EMKM-based Accounting Information System design for Laundry X MSME using a structured system design approach through Flowcharts, Data Flow Diagrams (DFD), and Entity Relationship Diagrams (ERD). The novelty of this research lies in the preparation of a system blueprint that integrates the entire operational process, starting from customer intake, transaction recording, cash management, up to the preparation of financial statements based on SAK EMKM. Therefore, the research uses the Research and Development (R&D) method to produce a system design that suits the operational needs of laundry MSMEs and can become the basis for application development in improving the quality of financial information and the effectiveness of business management.

2. LITERATURE REVIEW

2.1. Accounting Information System

A system is a collection of components that interact with each other to achieve a goal, while information is data that has been processed into a basis for decision making (Hall, 2019; Romney & Steinbart, 2020). In an organization, an Accounting Information System (AIS) functions to collect, record, process, store, and present transaction data into financial information that is relevant, accurate, reliable, and timely. According to Romney et al. (2021), AIS consists of human resource components, procedures, data, software, information technology infrastructure, and internal control that work in an integrated manner. In MSMEs, the application of a SAK EMKM-based AIS is able to improve the quality of financial information, operational efficiency, and support the preparation of financial statements in accordance with applicable standards (Indonesian Institute of Accountants, 2018; Grande et al. (2011).

2.2. Micro, Small, and Medium Enterprises (MSMEs)

MSMEs are businesses regulated in Law Number 20 of 2008 and updated through Law Number 11 of 2020 concerning Job Creation, with classification based on business scale and level of risk. In general, MSMEs have characteristics in the form of a simple organizational structure, decision making centered on the owner, limited resources, and financial recording that is still simple or manual. These characteristics cause MSMEs to need an accounting information system that is easy to implement, efficient, and able to support better financial management.

2.3. Accounting in MSMEs and SAK EMKM

Accounting is an information system used to identify, measure, record, and present financial information as a basis for decision making (Kieso et al., 2021). To improve the quality of MSME financial reporting, the Indonesian Institute of Accountants issued SAK EMKM as a guideline for preparing financial statements that are simple, reliable, and suited to the characteristics of MSMEs (Indonesian Institute of Accountants, 2018). This standard uses an accrual basis and produces a Statement of Financial Position, an Income Statement, and Notes to the Financial Statements. Integrating SAK EMKM into an Accounting Information System allows the process from recording to the preparation of financial statements to be carried out automatically, efficiently, and with reduced recording errors (Hall, 2019; Romney & Steinbart, 2020).

2.4. Internal Control

Internal control is a process designed to provide reasonable assurance in achieving operational effectiveness, reporting reliability, and compliance with regulations (COSO, 2013). According to COSO, internal control consists of five components, namely the control environment, risk assessment, control activities, information and communication, and monitoring. In an Accounting Information System, internal control functions to protect assets, reduce the risk of errors and fraud, and improve the quality of financial information through mechanisms such as segregation of duties, transaction authorization, documentation, and periodic evaluation (Hall, 2019; Romney & Steinbart, 2020).

2.5. System Design

System design is the process of translating user needs into a system design that will be implemented to support the organization's business processes (Kendall & Kendall, 2019; Satzinger et al., 2015). In the development of an MSME Accounting Information System, design is carried out based on an analysis of user needs by considering ease of use, efficiency, flexibility, and the ability to produce accurate information (Pressman & Maxim, 2019). This research uses Flowcharts, Data Flow Diagrams (DFD), and Entity Relationship Diagrams (ERD) as the basis for preparing an integrated SAK EMKM-based Accounting Information System design in accordance with the operational needs of laundry MSMEs.

3. RESEARCH METHODS

3.1. Type of Research

This research uses the Research and Development (R&D) method with a qualitative descriptive approach. The R&D method was chosen because it not only aims to describe a phenomenon, but also to produce a product in the form of an Accounting Information System design that suits user needs through the stages of needs analysis, design, development, validation, and evaluation. According to Waruwu (2024), research and development is a scientific approach that produces a product or model through a systematic process of needs analysis, design, development, implementation, and evaluation (Waruwu, 2024). A qualitative descriptive approach was used to obtain a picture of the operational conditions of the laundry MSME, the transaction recording process, financial management, and user needs through observation, interviews, and documentation as a basis for system design.

3.2. Research Object

The research object is a laundry service MSME disguised under the name "Laundry X" as a form of protecting the participant's identity in accordance with the ethics of qualitative research (Creswell, 2014). This anonymization was applied deliberately as an ethical safeguard, to protect the confidentiality of the business owner and employees who participated in the observation, interviews, and documentation process, and to

allow them to disclose operational and financial conditions openly without concern over the identifiability of their business. Laundry X is a small-scale business that provides washing, ironing, and express service with a simple organizational structure consisting of the owner and several employees, as is characteristic of MSMEs in general (Sugiyono, 2019). The business process includes order intake, customer recording, washing, ironing, up to the handover of results to the customer. Most of the transaction recording process is still carried out manually, which has the potential to cause recording errors and operational inefficiency.

3.3. Types and Sources of Data

The research uses primary and secondary data to obtain comprehensive information. Primary data was obtained directly through observation, in-depth interviews, and interaction with informants. Observation was carried out on the laundry's operational activities to identify business processes, the flow of transaction recording, and the various problems that arise due to the manual recording system and the presence of work that is still done twice over (Denzin & Lincoln, 2017). Interviews were conducted with the owner and employees of Laundry X to obtain information regarding the service flow, business processes, operational obstacles, and the expected accounting information system needs (Creswell, 2014). The primary data obtained is descriptive in nature and forms the basis for the analysis of system needs. Secondary data was obtained from anonymized transaction documents, business financial records, and various relevant literature. This data is used to support analysis, carry out triangulation, and strengthen the theoretical foundation of the research. Research by Pratama et al. (2023) shows that the use of business documents and scientific literature plays an important role in identifying information system gaps in MSMEs. Thus, the combination of primary and secondary data provides a more complete picture of the operational conditions of Laundry X.

3.4. Data Collection Techniques

Data collection techniques were carried out through observation, interviews, and documentation. Observation was used to identify business processes, the transaction recording system, the preparation of financial statements, and the application of SAK EMKM to the actual conditions of the business (Denzin & Lincoln, 2017). Semi-structured interviews were conducted with the owner and employees to explore user needs, recording obstacles, and expectations regarding the information system to be designed (Creswell, 2014). Documentation was carried out on transaction evidence, cash books, financial statements, organizational structure, and other supporting documents as material for verifying the results of observation and interviews (Sugiyono, 2019). Data collection was carried out in stages, starting from needs analysis, continuing with system design, then a conceptual evaluation together with the owner of Laundry X to obtain input on the blueprint that was prepared. This research is limited to the system blueprint preparation stage, so it does not yet cover application implementation or testing of practicality and effectiveness.

3.5. Data Analysis Techniques

Data analysis was carried out qualitatively in accordance with the characteristics of R&D research to identify user needs and produce a suitable accounting information system design. According to Sugiyono (2022), data analysis aims to process, organize, and interpret data so that it is able to answer the research objectives. The analysis stages include analysis of the running system, identification of system weaknesses, analysis of user needs, and design of the new system. The analysis was carried out based on the results of observation, interviews, and documentation, then poured into the form of a flowchart, Data Flow Diagram (DFD), Entity Relationship Diagram (ERD), as well as a database design and system output. The design model functions as a visualization medium as well as a communication tool between the researcher and the user (Romney & Steinbart, 2020). To guarantee the validity of the data, the research applies source and technique triangulation, member checking, and audit trails so that the results of the analysis have better credibility (Denzin & Lincoln, 2017; Miles et al., 2014).

3.6. Research Procedure

The research procedure consists of several stages, namely: (1) identification of problems and needs analysis through observation, interviews, and documentation; (2) analysis of the currently running system to identify weaknesses in the business process; (3) design of a SAK EMKM-based Accounting Information System; (4) preparation of a system model using flowcharts, DFD, and ERD; (5) preparation of a Chart of Accounts (COA) suited to the characteristics of the laundry business; (6) design of system output in the form of a statement of financial position, income statement, notes to the financial statements, and supporting

reports; and (7) evaluation of the blueprint together with the owner of Laundry X to ensure the suitability of the design with operational needs. The final result of the research is a blueprint of an Accounting Information System that can become the basis for application development in future research.

4. RESULTS AND DISCUSSION

4.1. Research Results

4.1.1. Form and Specifications of the Developed Product

The product produced from this research is named “SI-LEMKM: SAK EMKM-Based Laundry Accounting Information System”, which is a blueprint design for an accounting information system that integrates the entire operational cycle of a laundry MSME into one complete system model. This product is not in the form of a fully coded application, but rather a comprehensive system model design covering process flows, data flows, database structure, interface design, and ready-to-implement financial statement output formats, in accordance with the research’s problem limitation which is focused on the structured design stage. The product specifications are described in detail in the following components.

A. Menu Structure and Product Navigation

The menu structure is designed hierarchically so that it is easy to understand by users with limited digital literacy, in line with the principle of system suitability to user ability emphasized by Kendall and Kendall (2019).

Table 1. Product Menu Structure

Main Menu	Sub-Menu	Function
Dashboard	Daily Performance Summary	Displays daily revenue, the number of ongoing transactions, and cash balance in summary form
Service Transaction	Order Input; Order Status;	Records customer orders, calculates rates automatically, and monitors work status
Cash In/Out	Transaction History	
	Cash Receipts; Operational Expenses	Records all cash inflows from service revenue and cash outflows for operational costs
Customer Data	Customer List; Service History	Stores and traces customer data and transaction history
Inventory & Purchasing	Material Stock; Purchase Requests; Supplier Data	Monitors operational material stock levels and records the purchasing process, from purchase request to supplier invoice
Chart of Account	List of Asset, Liability, Equity, Revenue, and Expense Accounts	Manages the list of accounts according to SAK EMKM classification
Journal & General Ledger	Automatic Journal; General Ledger; Trial Balance	Presents the results of automatic posting from every recorded transaction
Financial Statements	Statement of Financial Position; Income Statement; Notes to the Financial Statements	Presents final financial statements in accordance with SAK EMKM provisions
Settings	User Access Rights; Rate Parameters	Manages user authorization and service rate parameters as part of internal control

Source: Processed data

B. Main Product Features

The main product features of the designed system include automatic rate calculation based on service type and laundry weight to minimize manual calculation errors, transaction recording with the single data entry principle where one-time data input automatically produces journals, general ledgers, and financial statements, a purchasing and inventory module that records operational material stock and the purchase request process to the supplier so that stock levels can be monitored and shortages anticipated, and separation of user access rights between cashier, service operator, and business owner as a form of authorization-based internal control. The system also enables fast tracing of customer transaction history and status through an integrated database to address complaints about slow data tracing in the manual system, provides automatic

presentation of the Statement of Financial Position, Income Statement, and Notes to the Financial Statements in accordance with the SAK EMKM format, and offers order status notifications including received, in process, completed, and picked up to support service transparency to customers.

C. Accounting Content of the Product

The accounting content in the product is arranged based on the account classification according to the groups set out in SAK EMKM, namely assets, liabilities, equity, revenue, and expenses (Indonesian Institute of Accountants, 2018). An example of the Chart of Accounts (COA) structure designed for Laundry X MSME.

Table 2. Chart of Accounts

Account Code	Account Name	Group
1-101	Cash	Asset
1-102	Accounts Receivable	Asset
1-103	Laundry Supplies	Asset
1-201	Equipment (Washing Machine & Dryer)	Fixed Asset
2-101	Accounts Payable	Liability
3-101	Owner's Capital	Equity
4-101	Laundry Service Revenue	Revenue
5-101	Supplies Expense (Detergent, Fragrance)	Expense
5-102	Electricity and Water Expense	Expense
5-103	Employee Salary Expense	Expense
5-104	Equipment Depreciation Expense	Expense

Source: Processed data

D. Database Design (Entity Relationship Diagram)

The database structure is designed using ERD to ensure that each data entity, namely customer, transaction, service, cash, account, and journal, is relationally connected to each other so that data redundancy does not occur and the single data entry principle is supported. The product's ERD design is presented in Figure 1.

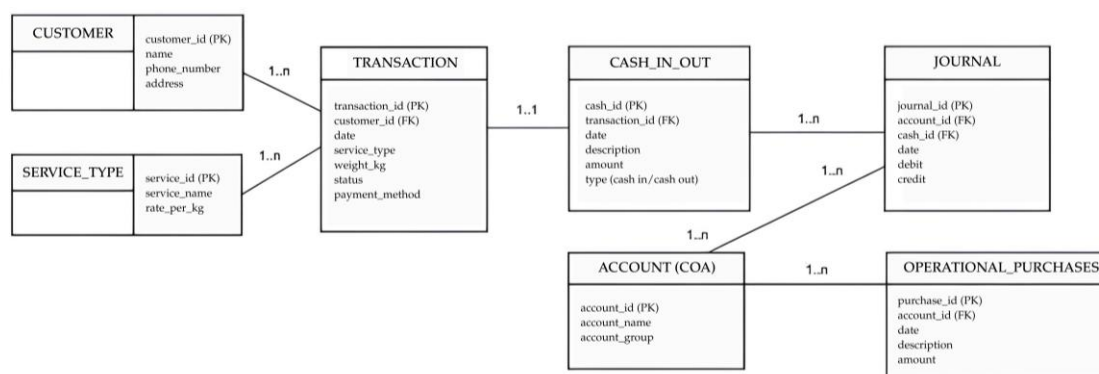


Figure 1. Entity Relationship Diagram (ERD) of the Laundry X Accounting Information System

Source: Processed data

In Figure 1 it can be seen that the TRANSACTION entity acts as the main link between the CUSTOMER and SERVICE_TYPE entities, while the CASH_IN_OUT entity is a bridge to the JOURNAL entity that is connected to the ACCOUNT entity (Chart of Accounts). This relational structure ensures that every service transaction recorded in the Transaction module will automatically form a cash entry and journal entry without the need for repeated input, in accordance with the recording efficiency needs identified at the needs analysis stage.

E. User Interface Design and Product Navigation

The interface design is prepared in the form of a wireframe or low-fidelity visual prototype that depicts the layout of the main elements without requiring the full coding process of the application, consistent with the research limitation at the model design stage. The interface design emphasizes simplicity, consistency of

color and layout, and a linear navigation flow so that it is easy to learn for users with a non-technical background, in line with the usability principle put forward by Satzinger et al. (2015). The interface design for the dashboard display and transaction input form is presented in the following figures.

Figure 2. Login Page (Cashier & Owner User)

Source: Author's documentation

Figure 3. Service Transaction Input Form

Source: Author's documentation

Figure 4. Financial Summary Dashboard

Source: Author's documentation

As shown in the figures 2, 3, and 4 above, the dashboard page presents a summary of daily financial performance (revenue, the number of ongoing transactions, and cash balance), so that the business owner can monitor the condition of the business at a glance without having to open the full report. Meanwhile, the transaction input form is designed with a coherent filling flow, starting from customer data, service type, laundry weight, up to payment method, accompanied by a preview of the automatic journal at the bottom of the screen as a form of transparency of the accounting recording process to the user. Navigation between

screens is designed to be one directional and can be accessed again through the sidebar menu that is always displayed (persistent navigation), so that users do not lose context when moving between modules.

F. Supporting Technology and Devices

The devices and proposed implementation technology for the product are described in Table 3.

Table 3. Devices and Proposed Product Implementation Technology

Component	Device / Technology	Description
Business process modeling	Flowchart	Used to depict the operational and accounting workflow
Data flow modeling	Data Flow Diagram (DFD)	Depicts the flow of data between external entities and system processes
Database modeling	Entity Relationship Diagram (ERD)	Depicts the structure and relationships between data tables
Diagram design tool	Draw.io / Microsoft Visio	Used by the researcher to prepare and visualize system diagrams
Interface prototyping tool	Wireframing application	Used to prepare a low-fidelity visual interface design
Proposed implementation database	Microsoft Access	Refers to the implementation practice of similar MSME AIS (Nurhaliza, 2023; Ramadana & Vellin, 2024)
Proposed application platform	Web-based or simple desktop application	Refers to the web-based laundry AIS development approach (Herlambang et al., 2025)

Source: Processed data

4.1.2. Internal Control Diagnosis Based on COSO Principles

Table 4. Mapping of COSO Principles to Laundry X's Current Condition

No.	COSO Principle	Relevant	Basis of Findings
1.	Commitment to integrity and ethical values	No	No discussion found regarding code of ethics, organizational culture, or integrity policy in observation and interview results
2.	Board independence and oversight	No	Laundry X is an MSME managed directly by the owner, with no board of commissioners or independent oversight mechanism
3.	Structures, reporting lines, authorities and responsibilities	Yes	Division of tasks found between owner, counter, administration, and operations
4.	Commitment to competence	No	Research did not discuss employee training or competency development systems
5.	Accountability	No	No formal performance evaluation or accountability mechanism found
6.	Specifies objectives	No	Research focus is on business process control, not organizational goal-setting
7.	Identifies and analyzes risks	Yes	Risk identification found: lost receipts, recording errors, delayed reports, and inventory management issues
8.	Assesses fraud risk	No	No findings related to fraud risk analysis
9.	Identifies significant change	No	Research did not address changes in business environment or organizational change
10.	Selects and develops control activities	Yes	Control activities found: checking of transactions, cash book, and purchase documents
11.	General controls over technology	Yes	Research focuses on information system development, making technology control aspects relevant
12.	Policies and procedures	Yes	Operational procedures found to be undocumented in a written SOP

No.	COSO Principle	Relevant	Basis of Findings
13.	Uses relevant information	Yes	Issues found regarding unintegrated information and manually prepared reports
14.	Internal communication	Yes	Operational communication found to still be conducted manually, causing delayed information flow
15.	External communication	No	Research did not evaluate the organization's communication with external parties as part of internal control
16.	Ongoing evaluations	Yes	Monitoring found to be conducted directly by the owner but not yet supported by an information system
17.	Communicates deficiencies	No	No formal mechanism found for reporting internal control weaknesses

Source: Processed data

Based on this mapping, all 17 COSO principles were identified and compared against the observation, interview, and documentation results at Laundry X. Eight principles were found directly related to the internal control condition that is the focus of this research: Principle 3 (Structures, Reporting Lines, Authorities and Responsibilities), Principle 7 (Identifies and Analyzes Risks), Principle 10 (Selects and Develops Control Activities), Principle 11 (General Controls over Technology), Principle 12 (Policies and Procedures), Principle 13 (Uses Relevant Information), Principle 14 (Internal Communication), and Principle 16 (Ongoing Evaluations). The remaining nine principles were not analyzed further due to a lack of supporting empirical evidence or because they did not fit Laundry X's characteristics as a micro-enterprise with a simple organizational structure.

4.1.3. System Design Evaluation

A. Product Advantages Compared to the Previous System

Compared with the recording system previously used by Laundry X, namely manual recording based on books and receipts, the developed product offers a number of advantages that directly answer the user needs identified at the needs analysis stage. This comparison is summarized in Table 5.

Table 5. Comparison with the Manual System

Comparison Aspect	Manual System (Previous)	Developed Product
Recording method	Manual, books and receipts, prone to human error	Structured, single data entry, journal and reports formed automatically
Rate calculation	Calculated manually, prone to calculation errors	Calculated automatically based on service type and laundry weight
Customer data tracing	Manual, time consuming, prone to loss	Integrated database, can be traced quickly
Segregation of duties	None, one person handles many functions	Tiered access rights available according to user role
Financial reporting	No formal report in accordance with standards	Statement of Financial Position, Income Statement, and Notes to Financial Statements automatic and in accordance with SAK EMKM
Process transparency	Recording process not visible to the user	Automatic journal preview displayed on every transaction
Ease of use	Dependent on individual habits	Standardized interface with a simple and consistent navigation

Source: Processed data

Overall, the advantage of this developed product lies in its ability to integrate the entire operational cycle of the laundry MSME, starting from customer intake, transaction recording, cash management, up to the presentation of financial statements, into one complete and interconnected system design, something that has

not been widely found in previous research which generally only focused on part of the business process, such as sales recording only (Ramadana & Vellin, 2024) or purchase recording only (Barkah et al., 2024). Thus, this product is expected to become a comprehensive and applicable blueprint for the development of an Accounting Information System application for similar laundry MSMEs.

B. Evaluation of the Developed Product

Evaluation of the developed product was carried out to assess the suitability of the Laundry X Accounting Information System (AIS) design with the user needs that had been identified through observation, interviews, documentation, and business process evaluation. In this research, the evaluation was not carried out through implementation testing or validation by experts, but rather through a conceptual evaluation of the suitability between the designed product specification and the functional and nonfunctional needs of the user. This approach is in line with the scope of research that is limited up to the system model (blueprint) design stage.

The evaluation was carried out by comparing each system need that had been formulated at the needs analysis stage with the features and components available in the Accounting Information System design. The evaluation results show that all of the user's main needs have been accommodated in the developed system design.

Table 6. Evaluation of the Developed Product Based on Needs Analysis

No.	User Need	Implementation in the Product	Evaluation Result
1.	Integrated laundry transaction recording	Service transaction module with the single data entry principle	Fulfilled
2.	Automatic rate calculation	Calculation based on service type and laundry weight	Fulfilled
3.	Customer data storage	Customer database and transaction history	Fulfilled
4.	Monitoring of laundry work status	Order status menu (received, in process, completed, picked up)	Fulfilled
5.	Management of cash receipts and expenses	Cash in and cash out module connected to the journal	Fulfilled
6.	Inventory control	Purchasing module and recording of operational material inventory	Fulfilled
7.	Preparation of financial statements in accordance with SAK EMKM	Statement of Financial Position, Income Statement, and Notes to the Financial Statements	Fulfilled
8.	Internal control	User access rights based on role and user authentication	Fulfilled

Source: Processed data

Based on Table 6 it is known that all of the user's main needs have been accommodated in the developed system design. The transaction module is designed to integrate the order recording process, rate calculation, and cash receipt recording into a single input process, thereby reducing the repeated recording that has been carried out manually so far. In addition, the system design also provides a customer database that allows fast tracing of transaction history, thereby improving the quality of service to customers.

In the accounting aspect, the system is designed using the single data entry principle, that is, every recorded transaction will produce a journal entry, an update to the general ledger, and the preparation of financial statements automatically. Thus, the process of preparing financial statements becomes more efficient and is able to produce information that is in accordance with the Financial Accounting Standards for Micro, Small, and Medium Entities (SAK EMKM). The evaluation was also carried out on the internal control aspect based on the Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework. The evaluation results show that the system design has accommodated the five components of internal control.

Table 7. Product Evaluation Based on the COSO Framework

COSO Component	Implementation in the Product
Control Environment	Setting of user access rights based on role (owner, counter, and operational staff)
Risk Assessment	Validation of transaction data, integrated data storage, and minimum inventory stock information
Control Activities	User authentication, automatic transaction recording, and restriction of access to data
Information and Communication	Operational dashboard, transaction report, inventory report, and integrated financial statements
Monitoring Activities	Provision of operational reports and financial statements as a monitoring tool for the business owner

Source: Processed data

Based on this evaluation it can be concluded that the developed Accounting Information System design has accommodated the principles of internal control in accordance with the COSO framework. Data integration, access right settings, automatic recording, and the provision of real-time information are expected to be able to improve the effectiveness of internal control compared to the manual system previously used. Overall, the evaluation results show that the product design has fulfilled the functional and nonfunctional needs identified at the needs analysis stage. Therefore, the resulting Accounting Information System blueprint is expected to be able to serve as a reference for application development at the future implementation stage as well as support the improvement of the quality of accounting information management at Laundry X.

4.1.4. Partner Organization Involvement

Laundry X acted as a partner organization that provided support during the research process. The partner's involvement was not only as a research object, but also as the main source of information in the process of identifying needs, preparing the design, and evaluating the developed Accounting Information System blueprint.

At the problem identification stage, the owner of Laundry X gave permission to the researcher to carry out observation of the running business process, including the customer intake process, transaction recording, cash management, management of operational material inventory, up to the preparation of financial statements. In addition to observation, the researcher also conducted interviews with the owner and employees to obtain information regarding operational procedures, obstacles faced, and the expected accounting information system needs.

At the needs analysis stage, the owner of Laundry X played a role in identifying the system's functional and nonfunctional needs. This information became the basis for preparing the system requirement specification so that the developed design suits the operational characteristics of the business. Input from the partner was also used to determine the main features, such as laundry transaction management, customer data, cash management, inventory, and preparation of financial statements in accordance with SAK EMKM.

Furthermore, at the system design stage, the researcher discussed the prepared blueprint with the owner of Laundry X. Discussions were carried out to obtain feedback related to the suitability of the business process flow, menu structure, interface design, and the internal control mechanism applied. This input was used as a basis for refining the blueprint so that the design better suits user needs.

At the evaluation stage, the owner of Laundry X gave confirmation of the suitability of the system design with the operational needs that had been previously identified. The evaluation was carried out conceptually by comparing user needs against the features contained in the Accounting Information System blueprint. Because this research is limited up to the design stage, the evaluation has not yet been carried out through system implementation in operational activities.

Table 8. Partner Organization Involvement

Research Stage	Form of Laundry X Involvement	Result of Involvement
Problem identification	Providing permission for observation, interviews, and documentation	Obtained information regarding the running accounting information system and the problems faced

Research Stage	Form of Laundry X Involvement	Result of Involvement
Needs analysis	Explaining user needs and business processes	Obtained the system's functional and nonfunctional needs
System design	Providing input on the system blueprint	Refinement of the Flowchart, DFD, ERD, prototype, and menu structure
Design evaluation	Providing confirmation of the suitability of the blueprint	Blueprint assessed as being in accordance with operational needs and supporting internal control

Source: Processed data

4.1.5. Resulting Impact

The resulting Accounting Information System blueprint is projected to be able to provide benefits to the operational management of Laundry X MSME through business process integration, more systematic transaction recording, and the provision of financial information in accordance with SAK EMKM. The system design is also expected to be able to reduce the potential for recording errors because all transactions are designed to be processed in an integrated manner.

From the internal control side, the blueprint accommodates the five COSO components through the implementation of user access rights, transaction validation, segregation of functions, timely provision of reports, and a user activity monitoring mechanism. Thus, the system design is expected to be able to support the strengthening of internal control at Laundry X. In addition, the blueprint provides a financial statement design that refers to SAK EMKM, so that the resulting financial information is expected to be more relevant, reliable, and able to be used as a basis for decision making by the business owner.

Table 9. Projected Impact of the System Blueprint

Aspect	Projected Impact
Operational Transactions	Business processes more integrated and documented Reduces the potential for recording errors
Financial Information	Supports the preparation of financial statements in accordance with SAK EMKM
Internal Control	Supports the application of COSO principles through access rights, validation, and monitoring
Decision Making	Provides faster and more structured information

Source: Processed data

4.2. Discussion

The results above show that the developed SI-LEMKM blueprint addresses the research gap identified in the introduction, namely the limited availability of prior research that integrates the full transaction-to-reporting cycle for laundry service MSMEs. Most previous studies on similar MSMEs focused on only part of the business process, such as sales recording alone (Ramadana & Vellin, 2024) or purchase recording alone (Barkah et al., 2024). In contrast, the blueprint developed in this research connects customer intake, transaction recording, cash management, inventory and purchasing, and financial reporting within a single integrated system design.

From an internal control perspective, the COSO mapping shows that eight of the seventeen COSO principles are directly relevant to Laundry X's current condition, and the system design accommodates all five COSO components through role-based access rights, transaction validation, integrated information provision, and monitoring mechanisms. This indicates that the structured design approach used in this research, combining Flowchart, DFD, and ERD with the COSO framework and SAK EMKM provisions, is able to address both the operational recording weaknesses and the internal control weaknesses identified at Laundry X, rather than one in isolation.

Taken together, the evaluation results in Table 6 and Table 7 confirm that all identified user needs and all five COSO components are accommodated in the design. This supports the conclusion that the blueprint provides a comprehensive and applicable foundation for laundry service MSMEs seeking to move from manual, unintegrated recording toward a SAK EMKM-compliant, internally controlled accounting information system.

5. CONCLUSIONS

Based on the results of the needs analysis, system design, and evaluation, this research concludes that the financial recording system at Laundry X MSME is still carried out manually using books and simple receipts. Customer data, transactions, and cash are not yet integrated because they are still recorded in separate documents, while the segregation of duties has not run optimally because one employee handles several operational functions at once. This condition causes the transaction tracing process to be less efficient and has not yet supported the preparation of financial statements in accordance with SAK EMKM. The evaluation results also show that the relevant internal control aspects based on the COSO framework are still applied informally without documented procedures.

This research produces a structured design-based Accounting Information System design that integrates the entire business process of the laundry MSME, starting from material procurement, washing operations, up to order pickup. The design uses a flowchart, Data Flow Diagram (DFD), and Entity Relationship Diagram (ERD) to depict the process flow, data flow, and database structure. The system is designed with the single data entry concept so that transaction recording can automatically produce journals, general ledgers, and financial statements. The design has also referred to SAK EMKM through the preparation of a chart of accounts, Statement of Financial Position, Income Statement, and Notes to the Financial Statements, and accommodates internal control through user access rights, login authentication, transaction validation, and real-time presentation of information. The evaluation shows that the design has covered the five COSO components, namely the control environment, risk assessment, control activities, information and communication, and monitoring.

This research provides a theoretical contribution through the development of an MSME Accounting Information System design model that integrates the structured design approach, COSO, and SAK EMKM into one system blueprint, directly addressing the research gap identified at the outset of this study, namely the limited availability of prior research offering a SAK EMKM-based Accounting Information System design for laundry service MSMEs that integrates the full business process rather than only part of it. Practically, this design can become a guideline for Laundry X as well as other laundry MSMEs in carrying out the digitalization of financial recording and can become the basis for application development at the next stage.

The research has limitations because it only goes up to the design stage without implementation and testing of system effectiveness, and only uses one research object. Therefore, the most critical priority for future research is to develop the blueprint into a functioning application and test its practicality and effectiveness, since this step is the foundation for all further validation. Following this, expert validation is recommended to formally assess the design before broader development proceeds, after which the research object can be expanded to other laundry MSMEs of varying scale, and further features such as customer notification, digital payment integration, and multi-branch management can be added.

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