

Accounting Information Systems and Internal Control Effectiveness: A Case Study of Cimahi Frozen Food

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ABSTRACT

The adoption of Accounting Information Systems (AIS) has become essential for improving operational efficiency, data accuracy, and internal control within small and medium enterprises (SMEs). However, many micro-retail businesses still face difficulties in effectively integrating AIS due to limited resources, weak role segregation, and reliance on external service providers. This study aims to examine the implementation of AIS at Cimahi Frozen Food and evaluate its impact on internal control and financial reporting processes. Employing a qualitative case study approach, data were collected through semi-structured interviews with administrative and managerial staff, direct observations, and documentation analysis. The data were analysed using the Miles and Huberman framework to identify emerging themes related to system use, control mechanisms, and operational reliability. The findings reveal that while AIS assists with transaction recording and financial statement preparation, it remains constrained by overlapping duties, inconsistent cash reconciliations, and technical issues in the EnPOS system. These weaknesses undermine the effectiveness of internal control and overall reporting accuracy. The study recommends strengthening role separation, implementing automated reconciliations, and enhancing vendor maintenance agreements. This research contributes to understanding the dynamics of AIS implementation in Indonesian microenterprises and provides practical guidance for improving internal governance and accountability.

Keywords: accounting information systems; internal control; microenterprises; digitalization; case study; Indonesia

INTRODUCTION

The advancement of digital technology has significantly transformed accounting practices, particularly through the use of Accounting Information Systems (AIS). In small and medium enterprises (SMEs), AIS plays a vital role in enhancing operational efficiency, improving data accuracy, and ensuring timely financial reporting. By automating processes such as transaction recording, reconciliation, inventory tracking, and financial statement preparation, AIS reduces manual errors, minimises the risk of data duplication, and strengthens managerial decision-making (Al-Hattami & Kabra, 2024). In addition, integrated systems enable real-time monitoring of financial performance, allowing business owners to respond more quickly to changes in sales trends, cash flow conditions, and operational costs. However, many micro and small enterprises in developing economies still face challenges in implementation due to limited financial resources, insufficient technical expertise, and weak segregation of duties, which undermine system reliability and internal control (Sarea et al., 2021). These structural constraints often result in partial system usage, dependency on a single operator, and inadequate documentation practices.

In Indonesia, AIS adoption among micro and small enterprises has grown alongside the rise of digital payments, e-commerce platforms, and online retail marketplaces. Government initiatives promoting digital transformation and financial inclusion have further accelerated this trend. Yet, implementation remains inconsistent and often fragmented, frequently hindered by managerial, financial, and operational limitations. Many businesses rely on externally provided point-of-sale (POS) systems, such as EnPOS, without fully integrating them into internal accounting procedures, budgeting systems, or formal reporting structures. This gap between adoption and integration—shaped by both human and technical factors—reduces AIS effectiveness (Indriasih & Setiawan, 2023). Employees may lack adequate training, system updates may not be performed regularly, and internal control mechanisms such as authorization procedures and data backups may not be optimally designed. As a result, discrepancies in cash records, incomplete documentation, inventory mismatches, and occasional system downtime persist, highlighting the need to understand how AIS supports internal control in practical, day-to-day business operations.

Previous research has largely emphasised the technical dimensions of AIS, system quality, or its benefits in larger and more structured organisations, leaving a notable gap in studies focusing on micro-retail enterprises, particularly in the frozen food sector where inventory management and cash handling are critical. Micro-retail businesses often operate with limited staff, informal governance structures, and overlapping responsibilities, increasing the risk of control weaknesses. This study addresses that gap by examining AIS implementation at

Cimahi Frozen Food, a microenterprise in West Java, Indonesia. It explores how the system is utilised in daily operations, including sales recording, inventory monitoring, and financial reporting, as well as its impact on internal control effectiveness. Furthermore, the study identifies operational and managerial challenges that affect system reliability and governance practices.

Using a qualitative case study approach, this research provides in-depth insight into how technology adoption interacts with internal governance mechanisms in small enterprises. Through interviews, observation, and document analysis, the study captures contextual factors influencing AIS performance, including organisational culture, owner involvement, and staff competencies. The findings contribute theoretically by expanding understanding of AIS effectiveness within microenterprise contexts, where formal control systems are often limited. Practically, the study offers actionable recommendations to strengthen internal control, improve system integration, and enhance data reliability. This study also responds to the ongoing call for research linking accounting information systems with governance practices in emerging economies, particularly in sectors characterised by rapid digitalisation and resource constraints.

METHOD

This study used a qualitative case study approach to gain an in-depth understanding of how the Accounting Information System (AIS) was implemented and how it influenced internal control effectiveness in a microenterprise context. The case study design was chosen as it allows the exploration of complex organisational and behavioural phenomena that quantitative methods cannot fully capture. The research focused on Cimahi Frozen Food, a micro-scale frozen food retailer in West Java, Indonesia, selected for its adoption of a partially digitalised AIS through the EnPOS point-of-sale application. This enterprise represents many small retailers undergoing digital transformation but still facing challenges in integrating accounting and operational systems effectively.

Data were collected between March and May 2024 using three complementary methods: semi-structured interviews, direct observation, and document analysis. Four participants were purposively selected based on their involvement in accounting and operational processes—namely, the owner-manager, administrative officer, cashier, and external EnPOS service provider. Each interview, lasting 30–60 minutes, was conducted in Bahasa Indonesia, recorded with consent, and transcribed verbatim. The questions addressed system configuration, transaction recording, data reconciliation, internal control practices, and system reliability.

Direct observation was carried out during transaction input, cash handling, and end-of-day closing. Notes were taken to document staff interactions with the system, task distribution, and manual interventions during technical problems. Supporting documents, such as sales records, cash reconciliation sheets, and system-generated reports, were also reviewed to triangulate interview and observation data. This multi-source approach strengthened validity through methodological triangulation.

Data were analysed using Miles and Huberman's (1994) interactive model, consisting of data condensation, data display, and conclusion drawing. Transcripts and notes were repeatedly reviewed and inductively coded to identify key ideas related to system implementation, segregation of duties, and internal control mechanisms. Codes were grouped into categories and refined into themes reflecting the major patterns in the data. Constant comparison ensured analytical coherence, while member checking validated interpretations to accurately represent participants' experiences. The final themes were then interpreted in relation to relevant AIS and internal control literature to strengthen theoretical integration.

Ethical standards were upheld throughout the study. Participants were informed about the objectives, procedures, and confidentiality measures before data collection. Participation was voluntary, with both written and verbal consent obtained. Anonymity was maintained by using pseudonyms and withholding identifying details of the organisation.

RESULTS AND DISCUSSION

The findings reveal that implementing the Accounting Information System (AIS) at Cimahi Frozen Food has improved operations, particularly in transaction recording and financial reporting. However, the system has not yet fully realised its potential to strengthen internal controls and ensure data reliability. Rachmad et al. (2024) emphasise that reliable financial reporting requires strong internal controls supported by effective communication, monitoring, and risk management. The AIS, mainly operating through the EnPOS platform, records daily sales and generates summary reports, simplifying bookkeeping and reducing manual calculations while enabling real-time access to sales data. Despite these advantages, several constraints limit its effectiveness and expose the enterprise to control risks.

The first major issue concerns role segregation and overlapping tasks. Due to the small scale of the enterprise, a single employee often handles multiple functions such as cashiering, bookkeeping, and reporting. This concentration of duties increases the risk of error and undermines control reliability. According to Ahmar et al. (2024), proper segregation of duties and internal controls are essential to safeguard organisational assets from

fraud, damage, and misuse. Kurniawan et al. (2024) further explain that weak internal controls—particularly inadequate segregation of duties and insufficient technological oversight—are often the root causes of errors and potential fraud in financial reporting. The firm's limited size and resources also affect its control structure, making strict segregation difficult to implement (Le et al., 2021). Although the owner-manager reviews system-generated reports, the lack of formal separation between operational and accounting roles weakens verification independence. This finding supports Romney and Steinbart's (2022) view that segregation of duties is a fundamental element of internal control. Similar conditions are reported in small enterprises with limited staff (Olatunji & Ogundana, 2022). At Cimahi Frozen Food, this weakness has led to reliance on personal trust rather than formal procedures, a pattern common among microenterprises in developing economies.

Another key issue identified is the inconsistency in cash reconciliation and the accuracy of financial reports. Although the AIS supports daily transaction recording, reconciliation between physical cash, QRIS payments, and system data is not consistently performed. Minor discrepancies between recorded and actual balances are often tolerated as normal, reflecting weaknesses in control activities and documentation. These issues also highlight the lack of an automated reconciliation feature in the EnPOS system, which still relies on manual staff verification. This finding aligns with Mayanti's (2021) study, which showed that limited automation in small enterprise systems reduces the accuracy and auditability of accounting data.

Technical reliability is another major concern affecting AIS effectiveness. The EnPOS platform, used for sales and inventory management, occasionally experiences service interruptions and slow processing. During these periods, transactions are recorded manually and later entered into the system, increasing the risk of data entry errors and delaying financial reporting. The enterprise also depends heavily on an external vendor for maintenance, as it lacks an internal IT specialist. The absence of a formal service-level agreement (SLA) with the provider heightens this vulnerability, causing unpredictable downtime. This reflects a common risk among microenterprises that depend on external vendors without formal support arrangements, as noted by Ifinedo (2023). These findings support O'Brien and Marakas's (2020) argument that the sustainability of information systems depends not only on technological adoption but also on institutional mechanisms ensuring continuity and accountability.

Despite its limitations, the implementation of AIS has positively influenced organisational awareness of financial documentation and accountability. Employees are now more disciplined in recording transactions, and management has access to more structured financial data for decision-making. The system also improves the traceability of sales and expenses, supporting regular performance evaluations. These outcomes show that even partial digitalisation can enhance financial transparency in microenterprises when adequate support mechanisms exist. This aligns with Elmasri and Gomaa's (2021) finding that AIS can effectively strengthen internal control in SMEs, even when implementation is imperfect. Nonetheless, achieving sustainable benefits requires further refinement of control procedures and technical upgrades.

The findings indicate that AIS effectiveness in a microenterprise depends on three interrelated factors: organisational structure, procedural discipline, and technological reliability. Organisationally, the enterprise should define clearer task boundaries and assign different individuals to operational and accounting verification roles. Procedurally, implementing standard operating procedures (SOPs) for daily cash reconciliation and report verification would enhance data reliability. Technologically, a formal maintenance agreement with the EnPOS vendor is needed to ensure timely support and system updates, while adding automated reconciliation and audit trail features would further strengthen internal control and minimise human error.

From a theoretical perspective, these findings enhance understanding of AIS implementation in microenterprises by showing how contextual factors—such as limited human resources and vendor dependence—affect system performance and internal control outcomes. The study confirms that technological adoption alone does not ensure better governance; it must be supported by organisational adaptation and procedural consistency. This aligns with Susanto's (2019) framework, which highlights that AIS effectiveness depends on the synergy between system functionality, user competence, and organisational control mechanisms. At Cimahi Frozen Food, the absence of such integration explains why the benefits of AIS adoption remain partial and inconsistent.

Practically, the results emphasise the need for gradual capacity-building and internal control reform in microenterprises undergoing digital transformation. Role-specific staff training, standardised reporting procedures, and periodic system audits would improve control reliability and accountability. Stronger collaboration with AIS vendors through structured partnerships would also align system upgrades with business processes and regulatory needs, ensuring that the AIS serves as a reliable tool for decision-making, risk management, and financial transparency.

Overall, while the implementation of AIS at Cimahi Frozen Food has improved financial record-keeping efficiency, its contribution to internal control effectiveness is still limited by organisational and technical constraints. Overcoming these challenges requires a balanced strategy combining process redesign, staff development, and system enhancement. Such an approach would enable microenterprises to maximise the benefits of digital accounting systems and strengthen internal governance in line with Indonesia's broader SME digital transformation efforts.

CONCLUSION

This study examined the implementation of an Accounting Information System (AIS) and its implications for internal control effectiveness in a microenterprise, using Cimahi Frozen Food as a case study. The findings reveal that adopting a digitalised accounting system through the EnPOS platform improved operational efficiency and strengthened financial documentation. The system enhanced transaction recording discipline and enabled more systematic financial reporting, supporting progress towards digital transformation. This aligns with the view that digital accounting systems add value to small businesses by enhancing informational capabilities, even when not fully integrated (Kristandl & Quinn, 2022). However, these benefits are limited by structural, procedural, and technological constraints that hinder the full realisation of effective internal control.

The main weakness lies in the lack of clear segregation of duties, causing overlap between operational and accounting responsibilities. Dependence on personal trust instead of formal verification increases errors and weakens internal review. Inconsistent cash reconciliation and manual checks also reduce data accuracy, while temporary EnPOS downtime delays reporting. Thus, while technology increases efficiency, it cannot replace core internal control principles without organisational and procedural improvements.

Theoretically, this study confirms that AIS effectiveness depends not only on technical functionality but also on the institutional and behavioural context in which it operates. It provides empirical evidence on AIS implementation in microenterprises, particularly in developing economies where limited resources and informality shape system performance. The Cimahi Frozen Food case illustrates that AIS success requires alignment between human competence, system reliability, and governance practices. Without this balance, digitalisation may accelerate operations but fail to ensure the integrity of financial information.

Practically, the study recommends improving internal control through clearer role separation, formal SOPs for cash reconciliation, and automated verification within AIS. Establishing service-level agreements with vendors is crucial to ensure system maintenance and minimise disruptions. Staff training should enhance both technical and control awareness, while policymakers and business support agencies should promote affordable AIS solutions and provide technical guidance tailored to SMEs, helping address adoption challenges (Sarea et al., 2021).

This research is limited to a single case, reducing the generalisability of its findings. Data drawn mainly from interviews and observations may involve subjective interpretation, and the absence of quantitative measures limits comparison. Future studies should employ multiple-case designs or mixed methods to validate findings and assess performance outcomes. Comparative research across sectors and regions would further clarify how contextual factors influence AIS implementation.

In conclusion, the AIS implementation at Cimahi Frozen Food demonstrates both the potential and limitations of digitalisation in microenterprise accounting. The system has improved documentation and staff discipline but only partially enhanced internal control effectiveness. Strengthening organisational structures, formalising control procedures, and ensuring system reliability are vital to translate AIS adoption into genuine improvements in governance and accountability. Ultimately, digital transformation in small enterprises must advance alongside institutional development to achieve sustainable impact.

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