

## **Effectiveness of a Hybrid Accounting Information System in Managing Sales and Cash Receipts: A Case Study of Apajada Café**

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### **ABSTRACT**

This study examines the effectiveness of a hybrid accounting information system (AIS) in managing sales and cash receipts at Apajada Café, a micro-scale food and beverage enterprise. Using a qualitative descriptive approach, data were collected through semi-structured interviews with the café manager and analysis of daily sales reports and financial documentation. The findings indicate that the café operates a hybrid system that integrates an offline electronic point-of-sale (e-POS) application with manual verification of non-cash transactions. This configuration provides adequate transaction recording but exhibits weaknesses in real-time integration and audit trail consistency. Internal control strengths include task segregation, daily cash reconciliation, and physical safeguards such as CCTV and secure cash storage. However, deficiencies were identified in role clarity, documentation procedures, and reliance on manual confirmation for bank transfers, which may increase the risk of human error. The study recommends implementing an online POS integrated with bank reconciliation, defining clearer responsibilities, and conducting regular internal audits. The findings provide empirical evidence on the practical use of hybrid AIS in microenterprises and insights for improving internal control effectiveness in small-scale hospitality businesses.

**Keywords:** accounting information system; internal control; E-POS, sales; cash receipts; small enterprise

### **INTRODUCTION**

In the digitalisation era, the ability of micro and small enterprises (MSEs) to implement efficient and reliable accounting information systems (AIS) has become increasingly critical for business sustainability and accountability to be useful in economic decision-making (Sabri et al., 2022). The rapid expansion of technology-based point-of-sale (POS) systems has transformed how small cafés and retail outlets record transactions, manage cash flow, and maintain internal controls. However, many small-scale enterprises in developing countries, including Indonesia, continue to rely on hybrid systems that combine manual and digital processes due to financial constraints, limited technical skills, and inconsistent internet connectivity. Financial reports will be faster and more

accurate if MSEs successfully digitize their accounting processes (Badria & Hasanah, 2024). Such hybrid systems often present challenges in data accuracy, real-time reporting, and fraud prevention. This results in the low quality of the accounting information produced, which in turn can affect the overall performance of the business (Hendrawati et al., 2024).

An accounting information system plays a pivotal role in recording, processing, and reporting financial transactions. According to Hall (2016), an effective AIS integrates human, technological, and procedural components to ensure the reliability of financial data and support managerial decision-making. In small enterprises, the AIS also functions as a key mechanism for implementing internal control principles such as segregation of duties, authorisation, and independent verification. Internal control as a process designed to provide reasonable assurance regarding the achievement of organisational objectives in operational effectiveness, financial reporting reliability, and legal compliance (Riyanti & Fanani, 2017). Therefore, understanding how small businesses apply these control mechanisms within hybrid AIS environments is essential for evaluating the system's effectiveness and identifying areas for improvement (Kurniawan & Sari, 2020).

Prior studies have primarily examined AIS implementation within medium or large-scale enterprises (Romney & Steinbart, 2018; Laudon & Laudon, 2020), where digital infrastructure and human resources are more developed. Research on micro-scale entities remains limited, particularly in the hospitality sector — such as cafés and restaurants — that often handles both cash and non-cash transactions daily. Empirical evidence on how these small enterprises manage transaction accuracy, recording timeliness, and internal control reliability in hybrid systems is still sparse. Consequently, there is a need for in-depth case studies that explore the practical realities and challenges of AIS adoption among micro-businesses operating with limited resources.

This study aims to examine the effectiveness of a hybrid accounting information system in managing sales and cash receipts at Apajada Café, a micro-scale food and beverage business located in Indonesia. Specifically, it seeks to analyse how the café's AIS supports transaction recording, cash control, and internal control procedures, and to identify existing strengths and weaknesses in its implementation. The central research question addressed in this study is:

*“How effective is the hybrid accounting information system at Apajada Café in ensuring the accuracy, timeliness, and reliability of sales and cash-receipt processes?”*

By addressing this question, the study provides empirical insights into the practical operation of hybrid AIS within small enterprises. It contributes to the broader understanding of internal control practices in the context of digital transformation. The findings are expected to assist small business owners, accounting practitioners, and policymakers in developing strategies to enhance financial control and governance among micro and small enterprises.

## METHOD

This study employs a qualitative descriptive case study design to provide an in-depth understanding of how the accounting information system (AIS) operates in managing sales and cash receipts within a micro-scale business context. The qualitative approach is suitable because it enables a comprehensive exploration of managerial practices, documentation processes, and internal control mechanisms that quantitative measures cannot adequately capture. The case study method, as suggested by Yin (2018), facilitates a contextual and holistic examination of the system implementation in its real-life environment, particularly when the boundaries between the phenomenon and the context are not clearly defined.

The research was conducted at Apajada Café, a micro food and beverage enterprise located in Indonesia. The café has adopted a hybrid AIS combining a local offline electronic point-of-sale (e-POS) application with manual procedures for recording non-cash and transfer-based transactions. The key participant in this study was the café manager, who is directly responsible for overseeing daily transactions, verifying payment records, and maintaining financial documentation. To ensure data triangulation, supplementary information was obtained from the café's cashier and administrative staff, who handle cash deposits and record-keeping. Participants were selected using a purposive sampling approach, focusing on individuals directly involved in financial and operational processes.

Data collection was conducted between June and July 2024, utilising three primary techniques: (1) Semi-structured interviews, guided by an interview protocol covering themes such as system operation, transaction recording, cash handling, and internal control procedures; (2) Document analysis, which included daily sales reports, payment receipts, and internal reconciliation sheets; (3) Observation, carried out during operational hours to understand workflow, system usage, and cash-handling routines. Each interview lasted 45–60 minutes and was recorded with the participant's consent. Field notes were also taken to capture contextual details and non-verbal cues.

Data were analysed through thematic analysis (Braun & Clarke, 2019). The analysis began with data familiarisation, followed by open coding to identify recurring patterns and categories related to system functionality, data accuracy, and control procedures. Codes were then grouped into themes that represented key dimensions of AIS effectiveness: availability, accuracy, and monitoring. Data triangulation between interviews, documents, and observations enhanced the robustness of findings. NVivo 12 software was used to assist with the organisation and management of qualitative data.

To ensure research credibility, several validation strategies were applied: (1) Member checking, by confirming interpretations with participants; (2) Triangulation, through the comparison of multiple data sources; and (3) Audit trail documentation, to maintain transparency of analytical decisions. Informed consent was secured from all participants, and confidentiality was maintained by anonymising the café's internal financial information. Pseudonyms were used in all transcripts and reports to protect individual and organisational identity.

## RESULTS AND DISCUSSION

The findings from interviews, document analysis, and direct observation reveal that the accounting information system (AIS) implemented at Apajada Café operates through a hybrid configuration, combining digital and manual procedures to manage both cash and non-cash transactions. While hybrid systems enhance operational flexibility, they frequently suffer from data duplication, poor documentation, and difficulties in maintaining consistent control mechanisms (Soomro et al., 2024). The discussion below is structured according to three core indicators of AIS effectiveness: availability, accuracy, and monitoring or internal control.

The café utilises an offline electronic point-of-sale (e-POS) system to record daily cash sales. The e-POS application enables automatic recording of sales transactions, calculation of totals, and generation of receipts. However, the system is not connected to an online server or cloud storage, meaning that data is stored locally and must be backed up manually. For non-cash transactions (e.g., bank transfers or e-wallet payments), sales staff record payment confirmations manually in a logbook.

*“Our POS works well for daily sales, but for transfers, we still need to check the bank app and note them manually in the record,” (Manager, Apajada Café).*

The system's availability is therefore classified as adequate but limited. The infrastructure supports basic sales recording, yet lacks real-time integration between cash and non-cash data streams. This limitation reduces the timeliness of financial reporting and increases the risk of data loss in the event of hardware failure. Similar findings

were reported by Akpe et al (2025), who noted that many micro-enterprises operated in areas with intermittent internet access, frequent power outages, or reliance on prepaid mobile data that could run out unpredictably. To enhance system availability, it is recommended that the café migrate to a cloud-based POS platform that automatically synchronises sales and payment data and provides accessible financial dashboards for managerial review.

The café’s AIS ensures relatively accurate cash transaction recording through real-time input and printed receipts. Daily reconciliation between the POS record and the physical cash drawer is conducted by the cashier at the end of each operational day and verified by the manager. However, manual verification of non-cash payments delays transaction recording. This manual step increases the probability of human error, particularly when multiple digital payments are received during peak hours.

*“Sometimes when it is busy, transfer payments are confirmed late, so the record may not match immediately,” (Cashier, Apajada Café).*

Document analysis confirmed occasional discrepancies of small value between bank receipts and recorded data, typically corrected during daily reconciliation. Although errors were promptly addressed, the process indicates the absence of automated bank reconciliation — an important component of AIS accuracy as outlined by Romney and Steinbart (2018). The accuracy dimension, therefore, demonstrates moderate reliability, dependent on manual checking. According to Shehzadi (2025), while hybrid accounting systems offer enhanced accuracy, the accuracy of automated outputs still depends on the accuracy of the initial data input. Similarly, the implementation of hybrid accounting systems in SMEs requires structured documentation and regular validation to ensure data accuracy and integrity.

Internal control practices at Apajada Café include several mechanisms consistent with the COSO framework (2013), such as segregation of duties, authorisation procedures, and physical safeguarding of assets. The café separates responsibilities among the cashier, barista, and manager to prevent the concentration of duties. In addition, daily monitoring is conducted through CCTV surveillance and a physical cash count. Nevertheless, the study found weaknesses in role definition and documentation. While daily control routines exist, they are informal and not codified in written procedures. There is no standard operating procedure (SOP) for handling payment discrepancies or verifying non-cash receipts. Consequently, the control environment in small and micro-scale enterprises often relies heavily on direct managerial supervision and personal trust, due to limited formal internal control structures (Chand, 2022; Chakabva, 2023).

*“We trust each other, so we do not have a formal rule for checking. If there is a mistake, we discuss it directly,” (Manager, Apajada Café).*

Despite these limitations, the café’s internal control can be classified as partially effective. The mechanisms provide reasonable assurance against errors and theft, but would benefit from more formalised control activities, including documented cash-handling policies and periodic internal audits. The summary of findings based on the three leading indicators—availability, accuracy, and internal control effectiveness—is presented in Table 1.

**Table 1. Summary of Findings on the Effectiveness of the Hybrid Accounting Information System at Apajada Café**

Indicator	Current Condition	Strengths	Weaknesses	Recommendations
Availability	Offline e-POS + manual logbook	Reliable for cash sales	No online integration; manual backup	Implement cloud-based POS with auto-synchronisation
Accuracy	Real-time cash input; manual transfer entry	Daily reconciliation	Delay & potential human error	Introduce automated bank reconciliation
Monitoring (Internal Control)	Task segregation; CCTV; daily review	Physical control & supervision	Lack of formal SOP; role ambiguity	Define procedures, schedule internal audits

The findings, presented in Table 1 above, collectively show that the hybrid AIS at Apajada Café has achieved functional adequacy but not systemic integration. The effectiveness of internal control largely depends on human vigilance rather than systemic automation. Consistent with previous studies on micro-enterprise digitalisation (Wang et al., 2023), digital transformation can improve operational areas (risk assessment, control activities, information & communication), but some technologies show no effect on control effectiveness.

The results highlight a broader challenge faced by micro-enterprises in Indonesia and other developing economies: balancing technological adoption with control standardisation. While digital tools such as e-POS systems enhance transaction speed and data accessibility, their benefits are constrained when organisations lack clear procedures and accountability structures.

This study provides practical implications for micro-business owners and accounting practitioners. First, integrating POS systems with banking applications can significantly improve transaction accuracy and reduce manual workload. Second, written documentation of control activities is necessary to ensure consistency and

transparency, especially as the enterprise grows. Third, internal audits and periodic data reviews should be institutionalised to strengthen governance and prevent operational risks.

From a theoretical perspective, this study provides empirical evidence for the literature on hybrid accounting information systems, extending the discussion of AIS effectiveness in resource-constrained environments. It reinforces the argument that the success of AIS implementation in small enterprises depends not only on technological capability but also on the organisational commitment to control and monitoring practices.

## CONCLUSION

This study examined the effectiveness of a hybrid accounting information system (AIS) in managing sales and cash receipts at Apajada Café, a micro-scale food and beverage enterprise in Indonesia. Using a qualitative case study design, data were obtained from interviews, document analysis, and direct observation. The findings reveal that the café's hybrid AIS—combining an offline electronic point-of-sale (e-POS) system and manual verification procedures—provides functional support for daily transaction recording but lacks full integration between cash and non-cash data flows. From the perspective of availability, the system infrastructure is adequate yet constrained by its offline nature. In terms of accuracy, the hybrid approach ensures reliable cash recording but introduces delays and potential errors in manual reconciliation of non-cash transactions. Regarding monitoring and internal control, the café applies basic control principles such as task segregation and daily cash reviews; however, these practices remain informal and heavily reliant on managerial supervision. Overall, the hybrid AIS can be classified as partially effective: it supports transaction documentation and internal oversight, but its dependence on manual verification reduces operational efficiency and control reliability.

The findings provide several practical insights for micro and small enterprises adopting hybrid AIS models. First, integrating a cloud-based POS with automated bank reconciliation would enhance data accuracy and reporting timeliness. Second, establishing written standard operating procedures (SOPs) for transaction recording and verification is essential to formalise control activities. Third, conducting regular internal audits and staff training in digital record-keeping can reduce human error and improve system reliability. Collectively, these measures can strengthen financial governance and support the digital transformation of small enterprises.

This study contributes to AIS literature by demonstrating that hybrid systems—combining digital tools with manual processes—offer operational functionality but limited control integration. It extends the COSO internal control framework to micro-scale enterprises, demonstrating that its principles remain relevant but require contextual adaptation due to resource and personnel constraints. The findings underscore that system effectiveness depends not only on technological adequacy but also on organisational discipline and control formalisation.

## REFERENCES

- Akpe, O. E., Mgbame, A. C., Abayomi, A. A., Ogbuefi, E., & Adeyelu, O. O. (2025). AI-Enabled Dashboards for Micro-Enterprise Profitability Optimization: A Pilot Implementation Study. *International Journal of Social Sciences and Management Research*, 11(5), 30–64. doi: <https://doi.org/10.56201/ijssmr.vol11no5.2025.pg30.64>
- Badria, N. & Hasanah, N. (2024). The Role Of Digital Accounting For MSMEs in Facing Business Challenges in The Digital Era. *Accounting and Finance Studies*, 4(4), 342-357. doi: <https://doi.org/10.47153/afs44.11192024>
- Chakabva, O. & Tengeh, R.K. (2023). The relationship between SME owner-manager characteristics and risk management strategies. *Journal on Open Innovation: Technology, Market, and Complexity* 9, 100112. doi: <https://doi.org/10.1108/JAOC-06-2022-0089>
- Chand, I. (2022). Strategies small-business leaders use to prevent employee fraud. *Doctoral dissertation*. Walden University.
- Hall, J. A. (2016). *Accounting information systems* (9th ed.). Boston, MA: Cengage Learning.
- Hendrawati, E., Kholidiah., Pramudianti, M. (2024). Optimizing Digital Accounting to Improve MSME Performance through the Quality of Accounting Information. *International Journal of Social and Management Studies (IJOSMAS)*, 5(6), 2775-0809. doi: <https://www.ijosmas.org/>
- Kurniawan, A., & Sari, R. D. (2020). Design and evaluation of hybrid accounting systems in small and medium enterprises. *Journal of Information Systems and Business Management*, 5(2), 45–56.
- Laudon, K. C., & Laudon, J. P. (2020). *Management information systems: Managing the digital firm* (16th ed.). Harlow, England: Pearson Education Limited.
- Riyanti, M., & Fanani, Z. (2017). Formal Vs Informal Internal Control System at Hospital. *Research Journal of Finance and Accounting*, 8(18), 2222-1697. doi: <http://www.iiste.org/>
- Romney, M. B., & Steinbart, P. J. (2018). *Accounting information systems* (14th ed.). Harlow, England: Pearson Education Limited.

- Sabri, S. N., Rapani, N. H. A., & Almaliki, O. J. (2022). The Accounting Information System (AIS) Effectiveness and SMEs Performance: A Conceptual Paper. *Management Research Journal*, 11(2), 64–73. doi: <https://doi.org/10.37134/mrj.vol11.2.6.2022>
- Shehzadi, T. (2025). Comparative Study of Manual vs Digital Accounting in SMEs: Efficiency, Accuracy, and Adoption. *ResearchGate*. doi: <https://doi.org/10.13140/RG.2.2.18671.55201>
- Soomro, et al. (2024). The Adoption of Digital Technologies by Small and Medium-Sized Enterprises for Sustainability and Value Creation in Pakistan: The Application of a Two-Stage Hybrid SEM-ANN Approach. *MDPI Journals*, 16(17), 7351. doi: <https://doi.org/10.3390/su16177351>
- Wang, C., Wang, D., Deng, X., & Wang, S. (2023). Research on the Impact of Enterprise Digital Transformation on Internal Control. *MDPI Journals*, 15(10), 8392. doi: <https://doi.org/10.3390/su15108392>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage Publications.