International Journal of Economic Research and Financial Accounting

International Journal of Economic Research and financial Accounting (IJERFA)
Volume 4, Number 2, January 2026, Page. 73 - 81 **E-ISSN: *2964-1977***

Analysis of Obstacles and Challenges of Digital Transformation of AIS in Local Government

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Abstract

Digital transformation is a strategic agenda that encourages reform of government governance through the comprehensive use of information technology, including in regional financial management. This change shifts the financial recording and reporting system from conventional mechanisms to a digital-based Accounting Information System (AIS), which is considered capable of improving operational efficiency, information accuracy, and transparency of public accountability. Although conceptually, the digital transformation of the AIS has a significant positive impact, the reality of its implementation in local government environments has not fully run as expected. Various structural and technical obstacles and challenges still frequently arise, hindering optimal system utilization. This study aims to examine in depth the characteristics of obstacles that influence the successful implementation of digital AIS in local governments by conducting a critical review of scientific findings, theoretical concepts, and developments in the latest public sector financial management practices. Using a descriptive approach based on literature review, this study evaluates the trends of issues emerging from various reference sources to identify patterns of gaps between digital transformation goals and their implementation in the field. The analysis shows that the main obstacles to AIS digitalization originate not only from the technological aspect but also involve the overall organizational readiness. The most dominant obstacles include: limited human resource competency in digital accounting technology, employee resistance to changes in work culture, unpreparedness of technology infrastructure and funding allocation, suboptimal alignment of procedures and regulations with digital system needs, as well as information security threats and data integration issues between government financial applications. These factors directly impact the effectiveness of AIS use, potentially giving rise to recording errors, reporting delays, and low-quality information that should be the basis for strategic decision-making. The findings of this study underscore that successful AIS digital transformation requires interventions that focus not only on providing technological tools but also prioritize human resource capacity building, improving institutional governance, strengthening regulations, and developing structured change management strategies. This research is expected to provide theoretical contributions to the literature on public sector digital transformation and offer practical insights for local governments in designing more adaptive, planned, and sustainable AIS implementation policies in the future.

Keywords: Accounting Information Systems, Local Government, Digital Transformation, Implementation Barriers, Organizational Challenges.

INTRODUCTION

The development of information technology over the past two decades has triggered fundamental changes in public sector governance in various countries, including Indonesia. Digital transformation has become a strategic policy direction for governments to improve service quality, transparency, and accountability in governance. One area experiencing the most significant change is the management of regional financial information. Financial management, which previously relied on manual or semi-digital recording systems, is now shifting towards the use of digital-based Accounting Information Systems (AIS) to ensure data reliability, speed of information processing, and accuracy of financial reporting as a basis for public decision-

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making. These changes are not only a domestic demand but are also reflected in the global trend that places digitalization as a key pillar of government financial reform to achieve modern and responsive governance.

The AIS in local governments plays a crucial role in providing accurate, relevant, and accountable financial information to support planning, budget execution, reporting, internal control, and auditing. Through automated transaction recording, budget monitoring, data integration between organizational units, and the preparation of standards-based financial reports, the AIS is expected to serve as an instrument of public accountability and a means for data-driven decision-making (*data-driven decision makin).* The central government has also strengthened the direction of digitalization of financial management through regulations and digital platforms, such as the Regional Government Information System (SIPD), the Regional Management Information System (SIMDA), the Regional Financial Management Information System (SIPKD), and various other supporting applications. This policy framework reflects the consistent reform of the financial bureaucracy to create more transparent, efficient, and adaptive fiscal management to the dynamics of public needs.

Although the concept of AIS digital transformation promises numerous benefits, its implementation in local governments still faces complex and multidimensional obstacles. In many regions, the utilization of information systems is often suboptimal and still in the adaptation stage. One fundamental issue frequently encountered is the limited competence of human resources in operating digital-based financial applications. Not all employees have adequate information technology backgrounds or the same speed of adaptation to system changes. Furthermore, a bureaucratic culture that tends to maintain old work patterns has the potential to create resistance to change, preventing digitalization from being fully internalized as an organizational need. This situation demonstrates that digital transformation is not simply a matter of providing technological devices, but also related to mental readiness, work culture, and institutional commitment to transformation.

Technological infrastructure is also a determining factor in the successful implementation of a digital AIS. Implementing a regional financial information system requires a stable internet network, adequate servers, hardware facilities, and ongoing technical support. In some local governments, especially those far from centers of technological development, infrastructure limitations prevent the system from operating optimally. When the system is unstable, users experience operational disruptions, data becomes out of sync, and reporting processes can be hampered. Furthermore, funding for technology maintenance and system capacity enhancement is often limited, making it difficult for local governments to fully adopt digital systems. These factors highlight the need for ongoing budgetary support for AIS digitalization, not just during the initial implementation phase.

In addition to human resource and infrastructure barriers, regulatory challenges and procedural standardization also contribute significantly to the ineffectiveness of digital transformation. Ideally, an AIS should operate with clear standard operating procedures and a harmonized regulatory framework between the central and regional governments. However, in practice, changes to digital systems are often not accompanied by the speed of regulatory updates and adjustments to administrative procedures. This lack of synchronization leads to user confusion, overlapping tasks between units, and the risk of inconsistent financial records. Some regional governments also still rely on manual mechanisms as a backup due to the instability of digital systems, creating a double workload and potential data inconsistencies. This situation demonstrates that digitalization requires regulatory updates, alignment of standard operating procedures, and in-depth oversight of financial information system governance.

Another aspect that is often overlooked is information security and data integration between financial applications. Digitalization has resulted in local government financial data being stored in server-based networks, potentially vulnerable to security threats such as hacking, data alteration, and unauthorized access. Furthermore, the use of multiple applications running separately risks data fragmentation, even though regional financial activities require complete information integration across organizational units. The inability of systems to connect to each other can hinder transaction reconciliation and reduce the quality of financial reporting information. Therefore, digital transformation needs to be balanced with data protection strategies, information technology risk management, and improved system interoperability and synchronization of regional financial application architectures.

These diverse issues reflect the gap between the ideal goals of AIS digital transformation and the reality of its implementation in local governments. This gap demonstrates that successful digitalization is not solely determined by technical aspects but also requires comprehensive organizational readiness encompassing structure, culture, regulations, and human competencies. Therefore, an in-depth analysis is needed to understand the emerging barriers, the dynamics of their causes, and the implications for the effectiveness of local financial management. A study of the barriers to AIS digital transformation is crucial to provide a comprehensive picture for local governments, enabling them to formulate more adaptive and sustainable digital system implementation strategies. In addition to these practical contributions, this study also contributes to enriching the academic literature on public sector digital transformation, particularly from the perspective of managing local financial information systems, which still requires in-depth analysis.

In line with this relevance, this research focuses on identifying and examining the obstacles and challenges that influence the successful implementation of digital AIS in local governments. The research was conducted using a descriptive qualitative approach based on literature review, examining concepts, theories, and empirical findings relevant to the digital transformation of local financial information systems. The main focus of the research is directed at four areas of obstacles: limited human resource competency, unpreparedness of technological and financing infrastructure, misalignment of regulations and operational procedures, and information security risks and data integration between financial applications. This research is expected to provide a comprehensive overview of the factors that hinder the digital transformation of AIS and strengthen understanding of the need for organizations to prepare a more mature digital ecosystem. Thus, this research contributes to the development of policy recommendations and strategies for improving the implementation of accounting information systems that are more effective, transparent, and accountable in local governments.

RESEARCH METHODS

This study employed a qualitative method with a descriptive approach. This method was used to gain an in-depth overview and understanding of the obstacles and challenges emerging in the digital transformation of Accounting Information Systems (AIS) in local governments.

International Journal
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The research did not focus on hypothesis testing or statistical measurements, but rather on explaining phenomena based on findings and information available through scientific sources.

The data used in this study is secondary data, obtained from various documents and publications. Data sources include scientific articles, books, proceedings, government regulations, regional financial information system guidelines, and other references relevant to the theme of digital transformation of AIS in local governments. References were selected based on their suitability to the research focus and the credibility of the sources.

Data collection techniques were conducted through literature studies, namely by searching, identifying, reading, and recording important information from relevant scientific sources. The collected information was analyzed to identify problem patterns and explain the factors influencing the implementation of digital-based accounting information systems in local government.

Data analysis was conducted by grouping information based on common themes and then connecting these findings to obtain a coherent and comprehensive explanation. The analysis process aimed to formulate an overview of the factors inhibiting the digital transformation of AIS, the causes of these obstacles, and their implications for the effectiveness of regional financial management. The analysis results are presented descriptively to clearly, objectively, and systematically depict the phenomenon in accordance with the research objectives.

RESULTS AND DISCUSSION

Digital transformation in Accounting Information Systems (AIS) is intended to improve the effectiveness of organizational financial management through the use of more integrated, rapid, and accurate information technology. However, based on literature reviews, its implementation in the local government sector still faces various obstacles. The following discussion links findings from ten previous studies to provide a comprehensive overview of the inhibiting factors for AIS digital transformation, both technically and non-technically.

1. Human Resource Competence and Readiness

Research conducted by Novita Yanti (2021) shows that the implementation of digital AIS has not yet optimally impacted the quality of local government financial reports due to gaps in employee competency in operating the system. Employees accustomed to manual work require time to adapt and understand digital procedures, resulting in delays in financial recording and reporting processes.

These findings align with research by Junialdi Eka Putra (2020), which asserts that the quality of an accounting information system is highly dependent on the understanding and competence of its users. According to his research, digital technology will produce quality information if users possess adequate skills in utilizing modules, control features, and electronic-based recording procedures.

A similar situation was also reinforced by Riyang Mardini (2023) who found that the effectiveness of AIS in the public sector not only affects the quality of financial reports, but also has an impact on employee performance, both*in-role performance* and*innovative performance*This means that when human resources aren't ready, the domino effect that occurs is not only late reporting but also a decrease in employee productivity and creativity in managing regional finances.

International Journal of Economic Research and financial Accounting (IJERFA)
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These studies demonstrate that the success of digital transformation depends not solely on technology but also on the competency of the civil service. Therefore, human resource capacity is the primary foundation for successful AIS digitalization.

2. Technology Infrastructure and Budget Support

Digitalization requires adequate facilities and infrastructure. Research by Eliyah Acantha (2022) confirms that villages implementing AIS digitalization often face challenges with hardware, software, and network connectivity. When infrastructure is inadequate, data input and synchronization processes are suboptimal, thus hindering the achievement of the goal of digital system efficiency.

In the private sector, Adep Mamat (2019) found that the role of management information systems in improving business operational efficiency is highly dependent on infrastructure support and system maintenance funding. While this research focused on businesses, the findings serve as a strong reminder that successful digitalization requires sustained investment, not just initial system procurement. Research by Citra Dwi Ardita (2021) also shows that MSMEs implementing AIS digitalization can improve business sustainability if supported by technical facilities and affordable technology access. Infrastructure limitations hamper organizations' ability to optimize digitalization.

By connecting these three studies, it can be concluded that infrastructure constraints are not only an issue in the government sector but also in other organizations. This suggests that AIS's digital transformation requires a consistent funding strategy, system maintenance, and technology updates.

3. Internal Regulations, Work Procedures, and Control Structure

Organizational arrangements that are not fully aligned with the implementation of digital systems are another inhibiting factor. In her research, Priscilla Julitha Bale (2022) found that AIS implementation does not automatically improve the quality of financial reports if the internal control system is not operating effectively. Unclear lines of responsibility for AIS users lead to input errors and irregularities in reporting.

Siti Nur Aisah's (2020) study also highlighted that internal controls, accounting staff competency, and AIS implementation are interrelated in determining the quality of financial reports. Without clear work procedures, system users often rely on manual methods, even when the system provides automation mechanisms. Similarly, Irenia (2021) stated that the use of information technology does not result in improved organizational performance if internal policies do not consistently support its implementation. This means that the system remains considered an additional tool, not a primary mechanism.

All three studies indicate that AIS digitalization requires strong institutional governance, not just the installation of applications. SOP, authorization flows, and internal audit procedures must be updated to align with digital mechanisms.

4. Data Security and System Integration

Information system security issues are also a consistent obstacle. Eliyah Acantha (2022) revealed that village governments still face data security vulnerabilities when using digital AIS, particularly when systems are not protected by adequate security standards. The risk of unauthorized access and data manipulation is a serious concern.

In the private sector, Delin Tri Resti (2021) emphasized that implementing a sales AIS requires a robust internal control system to prevent transaction fraud. While the context differs

International Journal of Economic Research and financial Accounting (IJERFA)
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from that of local governments, these findings underscore that system security is an integral part of digitalization.

Besides security, limited data integration is also a significant obstacle. Systems in some local governments use different applications for spending, assets, and revenue, so reconciliation is still done manually. Digitization implementation loses efficiency if systems remain separate. From these findings, it can be understood that digital AIS architecture must be based on database integration, layered information security, and strict user access rights settings.

5. Synthesis of Discussion — Direction of Research Correlation

If the findings of ten journals are summarized in an integrated manner, the logical correlation can be formulated as follows:

Factor	Main Impact	Supporting Researcher Findings
HR	System operation, data quality	Novita Yanti, Junialdi, Riyang
Infrastructure	Input speed and synchronization	Eliyah, Adep, Citra
Regulations and SOP	Accuracy of procedures and controls	Priscill, Siti Nur, Irenia
Security and Integration	Accuracy and reliability of information	Priscill, Siti Nur, Irenia

These four groups of obstacles are interrelated. If any one element is not ready, the effectiveness of the AIS in improving the quality of local government financial reports will be affected.

6. General Implications for Local Government

Based on the discussion, several strategic implications can be concluded:

1. Training and improving employees' digital competencies must be a priority.
2. The budget for infrastructure and system maintenance needs to be long-term, not just at the time of procurement.
3. Financial SOP updates must follow digital mechanisms, not manual ones. 4. Information security and system integration must be core components of the digitalization architecture.

By implementing these four focuses, SIA's digital transformation not only produces a new system, but also a new work pattern that is more transparent, faster, and accountable.

CONCLUSION

The digital transformation of Accounting Information Systems (AIS) in local governments essentially aims to create more effective, accurate, and transparent financial governance through the use of information technology. However, based on a review and analysis of ten previous studies, it can be concluded that the use of digital AIS in the government sector has not yet fully achieved the desired level of effectiveness. Despite the availability of technology and continuous updates to financial information system applications, the achievements of digital transformation still show a gap between normative objectives and actual implementation on the ground.

International Journal of Economic Research and Financial Accounting

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One of the main root causes of the problem lies in the competence and readiness of human resources. Research conducted by Novita Yanti, Junialdi Eka Putra, and Riyang Mardini confirms that the digital literacy level of local government officials is a determining factor in the success of AIS operations. Employees are required to understand digital accounting modules, transaction input procedures, and electronic-based reporting mechanisms. However, the study results indicate that some employees are still unable to adapt to the new system, leading to recording errors, data processing delays, and inaccurate financial reports. This situation demonstrates that digital transformation will not produce significant changes if system users are not equipped with adequate skills. Therefore, human resource competence is not merely an additional element, but a key foundation for the success of AIS digitalization.

In addition to human resources, research conducted by Eliyah Acantha, Adep Mamat, and Citra Dwi Ardita reveals that the availability and readiness of technological infrastructure play a crucial role. Local governments require hardware with the right specifications, a stable internet connection, secure data storage, and regular maintenance. Numerous cases demonstrate that limited technological devices or unstable network connections cause data input to be slow, disrupted, or even fail to save. As a result, repetitive work is performed and digital efficiency is not achieved. This illustrates that the success of digital transformation depends not only on the availability of applications, but also on sustainable funding to ensure the system continues to function and develop.

Furthermore, research conducted by Priscilla Julitha Bale, Siti Nur Aisah, and Irenia has provided strong evidence that internal regulations, work procedures, and organizational control structures influence the effectiveness of AIS implementation. Most obstacles arise not because the technology is not working, but because bureaucratic mechanisms have not yet adapted to digital processes. SOP that are still oriented towards manual processes, such as requiring physical signing or printing of documents, result in a dual process, one digital and one manual. This makes work longer, not more efficient. Furthermore, the unclear division of system operator duties creates confusion during implementation and difficulty in determining responsibility for errors. The conclusion that can be drawn is that application changes must be accompanied by changes in organizational governance. Digital transformation requires business process transformation, not simply replacing equipment.

The research findings of Eliyah Acantha and Delin Tri Resti also show that information security and system integration are critical aspects of the digital transformation of AIS. Regional financial data is highly sensitive, making it vulnerable to leaks and manipulation if the system is not protected by adequate security controls. This problem is exacerbated by unstandardized user access practices and incompletely protected data storage. Beyond information security, integration issues between financial applications also arise. Many local governments still operate separate financial management applications, such as revenue, expenditure, and assets, requiring manual data reconciliation. This situation demonstrates that digitalization alone is not enough; systems must be integrated to deliver maximum benefits.

When all previous research findings are synthesized, it can be concluded that the success of digital transformation of Accounting Information Systems in local governments depends on the organization's ability to simultaneously fulfill four main components: human resource readiness, technological infrastructure, organizational governance, and system security and integration. These four components are interrelated. Technology cannot run without skilled human resources; human resources cannot perform optimally without SOP aligned with digital systems; SOP will not be effective if the system is not secure and integrated; and the system cannot be maintained without long-term financial and infrastructure support. Thus, digital transformation is a systemic process, not just a technical one, requiring managerial commitment, a new work culture, a continuous learning orientation, and a mature technology investment strategy.

Overall, this research reinforces the understanding that the digitalization of AIS has significant potential to improve the quality of regional financial accountability and governance. However, this potential can only be realized if digital transformation is understood not as an application installation project, but as a comprehensive renewal of the working systems within regional financial management organizations. Therefore, this research is expected to provide a foundation for policymakers to develop a more planned, targeted, and sustainable digital transformation strategy to support improvements in the quality of public transparency, budget management performance, and public trust in local government.

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International Journal
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Volume 4, Number 2, January 2026, Page. 73 - 81 **E-ISSN: *2964-1977***

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