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The Role of Administrative Management Information Systems in Enhancing Operational Efficiency at PT. ABC

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ABSTRACT

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In the digital transformation era, organizations are increasingly adopting Administrative Management Information Systems (AMIS) to enhance operational efficiency and competitiveness. This study explores the implementation of AMIS at PT. ABC using a mixed-methods approach, combining quantitative performance metrics with qualitative insights from managerial staff. The results indicate that AMIS significantly improves administrative task processing speed, reduces error rates, and lowers operational costs. Furthermore, the system fosters transparency, real-time decision-making, and cross-departmental collaboration. The integration of Artificial Intelligence and data governance protocols further elevates AMIS from a transactional tool to a strategic asset. However, challenges such as user resistance and digital literacy gaps highlight the importance of comprehensive training and change management. Overall, AMIS proves to be a critical enabler of operational excellence and digital transformation within PT. ABC.

Administrative Management Information Systems, Operational Efficiency, Digital Transformation.

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INTRODUCTION

In today's rapidly evolving digital era, organizations face increasing pressure to enhance operational efficiency in order to remain competitive. Administrative Management Information Systems (AMIS) have become essential tools for managing data and business processes effectively. According to Seun (2023), the integration of AMIS enables organizations to boost productivity, improve internal communication, and streamline operations.

The implementation of AMIS allows companies to integrate various administrative functions—such as human resources management, finance, and logistics—into a unified platform. This not only enhances operational efficiency but also facilitates better decision-making processes. Ha (2020) found that administrative information systems have a significantly positive impact on

operational performance, emphasizing their role in enabling objective decision-making across organizational levels.

Furthermore, AMIS contributes to improving transparency and accountability in business operations. By providing real-time data accessible to multiple departments, companies can proactively identify and address operational bottlenecks. Yandi et al. (2025) noted that such systems enhance interdepartmental coordination and ensure optimal utilization of resources. In the banking sector, the adoption of AMIS has shown substantial improvements in operational efficiency. Ali and AlSondos (2020), in their review of over 155 studies, concluded that the effective implementation of accounting information systems contributes significantly to increased profitability and operational performance.

However, the success of AMIS implementation does not solely rely on technological sophistication. Human and organizational factors play a critical role. Inyang et al. (2024) highlighted that efficiency is often hindered by poor information management systems, even when accurate and relevant data are available. In the context of PT. ABC, a well-executed AMIS strategy can assist the company in managing daily operations more efficiently, increasing employee productivity, and accelerating decision-making processes. A study by Nirmala (2024) showed that improvements in FIFO methods at PT. ABC's warehouse operations enhanced operational efficiency and reduced product damage risks.

Moreover, integrating AMIS with advanced technologies such as artificial intelligence can further amplify organizational efficiency. Gallego Cossio et al. (2025) emphasized that financial and administrative management models in digital enterprises must be multifaceted—incorporating digital strategy, organizational agility, and sustainable innovation to optimize performance and ensure long-term viability. The integration of Artificial Intelligence (AI) into Administrative Management Information Systems has revolutionized decision-making processes within organizations. AI-driven AMIS can analyze vast datasets to provide predictive insights, enabling proactive strategies and enhanced operational efficiency. According to Li (2025), the adoption of AI in administrative systems has led to significant improvements in policy analysis, administrative efficiency, and financial management in public administration.

Data management systems also play a pivotal role in ensuring the accuracy and reliability of information within AMIS. Effective data management facilitates real-time access to critical information, which is essential for timely decision-making. Chinyere and Ikoromasoma (2021) found a significant positive relationship between data management systems and

organizational efficiency in Nigerian banks, emphasizing the importance of robust data management practices. Transparency and accountability are fundamental principles that can be enhanced through the implementation of AMIS. By providing stakeholders with access to accurate and timely information, AMIS fosters an environment of trust and openness. A study by Napan et al. (2025) on the Don Bosco Foundation in Manado demonstrated that financial management transparency and accountability were significantly improved through the use of information systems, leading to better organizational performance.

In the case of PT. ABC, embracing these advancements in AMIS—such as AI integration, enhanced data governance, and transparency measures—can yield substantial operational gains. The ability to track processes in real-time and automate core functions allows the company to reduce inefficiencies and boost responsiveness to internal and external changes. This positions AMIS not only as a support tool but as a driver of strategic transformation.

Considering the advantages offered by AMIS, PT. ABC can leverage such systems to significantly improve its operational efficiency. With proper implementation and full organizational support, AMIS can serve as a strategic instrument in achieving competitive advantage and sustained growth.

RESEARCH METHOD

This study employs a mixed-methods research design—combining both descriptive qualitative and quantitative approaches—to examine the role of Administrative Management Information Systems (AMIS) in enhancing operational efficiency at PT. ABC. The qualitative component aims to gain in-depth understanding from managerial staff and system users, while the quantitative analysis focuses on comparing key operational performance metrics before and after AMIS implementation. This methodological blend is in line with Creswell & Clark (2018), who highlight that mixed methods enable researchers to derive comprehensive insights by integrating statistical trends with contextual interpretation.

The population of the study includes employees and managerial staff from PT. ABC's administrative, finance, logistics, and IT departments. A purposive sampling technique was used to select 30 key informants who interact directly with AMIS—comprising IT specialists, administrative officers, warehouse supervisors, and department heads. Data were collected through three main techniques: (1) structured questionnaires with Likert-scale items to quantify changes in performance, (2) semi-structured interviews to explore perceptions on efficiency, transparency, and system usability, and (3) document analysis of

internal reports and system logs. The triangulation of these sources enhances data validity, as advocated by Patton (2015).

Quantitative data were analyzed using descriptive statistics and paired-sample t-tests, targeting indicators such as processing time, error rates, and administrative costs. Qualitative interview data were processed through thematic analysis, following Braun & Clarke's (2019) approach to identify recurring themes on AMIS impact. Instrument reliability was ensured via Cronbach's Alpha (threshold ≥ 0.70), while qualitative credibility was maintained using member checking and peer debriefing (Lincoln & Guba, 1985). The research focuses solely on PT. ABC's internal processes and does not involve third-party vendors or external benchmarking. Although artificial intelligence and data governance are discussed, this study does not involve the development or testing of new AMIS models.

RESULT AND DISCUSSION

Results

Quantitative Findings: Improvements in Operational Metrics

The quantitative analysis revealed substantial improvements in several key operational efficiency indicators following the implementation of the Administrative Management Information System (AMIS) at PT. ABC. Data were collected through structured questionnaires distributed to 30 purposively selected employees across the finance, logistics, human resources, and IT departments. The results were analyzed using descriptive statistics and paired-sample t-tests, comparing pre-implementation and post-implementation performance.

Processing time for routine administrative tasks showed a significant reduction, from an average of 4.8 hours to 3.5 hours per transaction ($t(29) = 6.21$, $p < 0.01$), indicating improved workflow automation and better task scheduling. This time efficiency was especially notable in payroll processing, employee data management, and inventory tracking.

Error rates in document processing and data entry decreased from 15.2% to 8.6%, a 43.4% reduction, attributed to the embedded validation tools and audit trails provided by the AMIS platform. Such improvements have been especially beneficial in financial reporting and procurement documentation, where data accuracy is critical.

Moreover, administrative overhead costs showed a downward trend of approximately 18%, based on internal financial documents. Cost reductions were realized from savings in paper-based documentation, reduced overtime work, and minimized correction efforts on human errors.

These improvements demonstrate the effectiveness of AMIS in delivering tangible operational benefits. The questionnaire instruments were deemed reliable, with a Cronbach's Alpha value of 0.81, exceeding the acceptable threshold of 0.70, and confirming the internal consistency of measurement items.

Qualitative Insights: Organizational Behavior and Perceptions

To enrich the understanding of how AMIS affects daily operations and employee behavior, in-depth interviews were conducted with 12 key informants, including unit heads, AMIS operators, and warehouse supervisors. Thematic analysis of interview transcripts revealed four salient themes:

1. Accelerated Decision-Making

Participants consistently mentioned that AMIS had a profound impact on the speed and accuracy of managerial decisions. The real-time dashboard, access to consolidated reports, and instant retrieval of historical data enabled managers to respond to operational challenges more promptly. A finance officer noted, "Before AMIS, we waited two to three days for report compilation; now we generate them in minutes."

2. Transparency and Accountability

The implementation of AMIS has led to increased accountability. Workflow logs, user access records, and audit trails make every action within the system traceable. Supervisors described that these features discouraged unauthorized data manipulation and encouraged procedural discipline. One HR manager emphasized, "Now, everyone is aware that all actions are recorded—this has changed behavior significantly."

3. Resistance to Technological Change

Although overall adoption was successful, initial resistance, especially among older staff with low digital literacy, posed challenges. Training programs and peer mentoring were necessary to build user confidence. One respondent admitted, "At first, I was intimidated by the system interface, but with repeated training, I became more comfortable."

4. Improved Cross-Departmental Collaboration

AMIS facilitated better communication between departments. The finance and logistics units, for instance, now work with synchronized data regarding inventory levels and budget allocations, reducing delays caused by inconsistent records. This has enabled a more cohesive planning process, particularly for project budgeting and procurement.

Technological Integration: AI Capabilities and Data Management Enhancements

Beyond its core functionalities, AMIS at PT. ABC is integrated with several Artificial Intelligence (AI) features and advanced data management protocols. Document analysis and system usage logs indicate that AI modules are being utilized in the following areas:

- Predictive analytics for inventory forecasting, reducing stockouts by 21% based on warehouse reports.
- Automated alerts for contract expirations, pending approvals, and budget anomalies.
- Natural Language Processing (NLP)
- modules used in chatbot support for HR-related inquiries.

These features enhance operational foresight and reduce reliance on manual follow-ups. The integration of data governance policies, such as duplicate-check algorithms and role-based access control, has further improved the integrity and confidentiality of administrative records. The IT division confirmed a 30% decrease in duplicate data entries following implementation of validation layers in the AMIS platform.

One IT systems officer reflected, "Our reports are now much more reliable because the system flags anomalies automatically, and we have clear logs for every user action."

Summary of Results

The findings from both quantitative and qualitative sources strongly support the conclusion that the implementation of AMIS at PT. ABC has led to measurable improvements in operational efficiency. This includes enhanced speed of task execution, reduced error rates, cost savings, increased transparency, and improved interdepartmental coordination. Additionally, the integration of AI features and robust data management systems suggests that AMIS is evolving from a mere transactional tool into a strategic enabler of digital transformation within the organization.

Discussion

Operational Efficiency Gains through AMIS: Empirical Confirmation and Theoretical Support

The findings from this study confirm the theoretical proposition that Administrative Management Information Systems (AMIS) serve as strategic tools to improve organizational efficiency. The quantitative results demonstrated significant gains in processing speed, error reduction, and cost efficiency following AMIS implementation at PT. ABC. These improvements align with the resource-based view (RBV) of the firm, which posits that internal

capabilities—such as information systems—can become key sources of sustained competitive advantage (Barney, 1991). In the context of AMIS, the ability to process data efficiently and make informed decisions reflects a valuable, rare, and non-substitutable resource.

The decrease in task processing time (27%) and error rate (43%) echoes the conclusions of Ha (2020), who emphasized that administrative information systems significantly enhance routine task execution by minimizing manual intervention and standardizing workflows. This empirical observation is further supported by Nirmala (2024), whose work at PT. ABC's warehouse revealed that systematized inventory methods embedded in AMIS reduced handling inefficiencies and prevented product damage. Such results validate the broader claim by Seun (2023) that AMIS promotes agility and responsiveness in operational environments.

In a related international case, Diageo's AMIS journey demonstrated that consistent adoption and capability development over time can lead to performance excellence. After four years of systematized AMIS deployment, Diageo ranked among the top 3% of global AMIS benchmark participants (TheAMISJourney.com, 2023). This case suggests that AMIS effectiveness is cumulative and long-term investment in both technology and human adaptation is required to achieve world-class efficiency standards.

The Role of Artificial Intelligence and Data Governance in Scaling Efficiency

Another vital dimension emerging from this study is the integration of Artificial Intelligence (AI) capabilities and robust data management frameworks within AMIS. PT. ABC's deployment of AI modules—such as predictive inventory alerts and automated approval routing—demonstrates how intelligent systems can further enhance operational foresight and reduce dependency on human input. This aligns with findings by Li (2025), who argues that AI-powered AMIS improves administrative planning accuracy and reduces policy implementation lag in public sector institutions.

Moreover, the emphasis on data quality and governance has proven critical. PT. ABC implemented layered validation checks, data duplication controls, and access management protocols—resulting in a 30% reduction in duplicated entries and higher accuracy in executive dashboards. These outcomes reflect the conclusions of Chinyere and Ikoromasoma (2021), who identified that efficient data management systems correlate strongly with organizational performance in high-volume transactional environments. Data quality becomes not only an operational concern but a strategic one, enabling reliable decision-making at every level.

By embedding both AI and data management mechanisms, AMIS at PT. ABC has evolved beyond a record-keeping platform into a dynamic tool for real-time monitoring, forecasting, and control—functions central to modern digital organizations (Gallego Cossio et al., 2025). This positions AMIS as a critical enabler in enterprise digital transformation.

Organizational Behavior and the Challenge of Technological Adaptation

Despite the operational successes, the study also uncovered human and organizational constraints that affect AMIS adoption. Several interviewees from older age cohorts expressed initial resistance due to unfamiliarity with digital systems. This observation resonates with Inyang et al. (2024), who warn that lack of digital readiness and poor internal training structures can erode the efficiency potential of even the most sophisticated information systems.

The socio-technical systems theory underscores this issue: technological success is contingent upon the alignment between system capabilities and user competencies (Trist, 1981). In PT. ABC's case, technical deployment alone was insufficient. Success depended on comprehensive training programs, sustained user support, and leadership commitment to change. For example, the implementation team launched a phased rollout, offered user feedback channels, and appointed "digital champions" in each department to assist less experienced users.

Furthermore, organizational culture plays a significant role in shaping AMIS outcomes. As observed, greater interdepartmental coordination emerged as a secondary benefit of AMIS. Teams that traditionally operated in silos began sharing real-time data, leading to more integrated planning. This mirrors the findings of Yandi et al. (2025), who argued that AMIS encourages horizontal transparency and reduces asymmetrical information flow between departments.

To sustain the gains, it is crucial for PT. ABC to institutionalize digital literacy development, embed AMIS within performance evaluation frameworks, and maintain flexible system governance that evolves with changing organizational needs. Such strategies ensure that AMIS remains adaptable and relevant amid growing operational complexity.

CONCLUSION

This study examined the role of Administrative Management Information Systems (AMIS) in enhancing operational efficiency at PT. ABC through a mixed-methods approach. The results demonstrate that AMIS significantly improves multiple dimensions of operational performance—including faster task completion, reduced error rates, cost savings, enhanced decision-making,

and greater transparency. Quantitative evidence revealed a 27% decrease in average processing time and over 40% reduction in errors, while qualitative insights highlighted improved interdepartmental coordination and managerial responsiveness. Furthermore, the integration of Artificial Intelligence and strong data governance practices has transformed AMIS into a strategic asset that supports predictive analytics and adaptive organizational planning.

Despite these gains, the research also uncovered notable challenges, particularly in the area of human adaptation. Resistance to system use among staff lacking digital literacy emphasizes the need for structured training and ongoing support. Therefore, the successful implementation of AMIS hinges not only on technological infrastructure but also on cultivating a culture of innovation and digital readiness. In conclusion, AMIS has proven to be a powerful enabler of operational excellence at PT. ABC. To maintain and expand its benefits, the company must continue investing in human resource development, align its digital tools with strategic objectives, and institutionalize data-driven practices across all functions.

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