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An Analysis of the Management Information System's Influence on Employee Performance Effectiveness at South Tangerang Regional Public Hospital

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A B S T R A C T

This study examines how the implementation of Management Information Systems (MIS) influences employee performance effectiveness at South Tangerang Regional Public Hospital during Indonesia's public hospital digital transformation from 2023 to 2025. Using a qualitative case study approach, data were collected through in-depth interviews, focus group discussions, observations, and document analysis involving administrative staff, medical personnel, IT officers, and managers. Data were analyzed using the interactive model of Miles, Huberman, and Saldaña. The findings indicate that MIS implementation improves performance effectiveness by accelerating administrative processes, enhancing data accuracy, and strengthening interdepartmental coordination, although challenges remain in digital literacy and infrastructure reliability. These results highlight the importance of organizational commitment and capacity development for sustainable hospital digital transformation.

INTRODUCTION

Between 2023 and 2025, Indonesian public hospitals have entered a critical phase of digital transformation aimed at improving service quality, administrative efficiency, and institutional accountability. This transformation is closely aligned with national health sector reforms that emphasize data integration, transparency, and evidence-based decision-making. Regional Public Hospitals (Rumah Sakit Umum Daera/RSUD), as frontline public healthcare providers, are required not only to enhance clinical services but also to modernize internal management practices through digital systems.

One of the most important instruments supporting this transformation is the Hospital Management Information System (HMIS), locally referred to as Sistem Informasi Manajemen Rumah Sakit (SIMRS). HMIS integrates clinical, administrative, and financial processes into a unified digital platform, covering patient registration, electronic medical records, billing, logistics, pharmacy, and reporting. In theory, such systems are expected to streamline workflows, reduce administrative burdens, and improve coordination across hospital units, ultimately enhancing employee performance effectiveness.

At the regional level, RSUD Kota Tangerang Selatan has actively implemented HMIS as part of its strategic agenda for service improvement and digital governance, as outlined in its 2024-2026 Strategic Plan. The hospital has introduced electronic referral systems, integrated reporting mechanisms, and digital administrative services in line with national initiatives such as *SatuSehat*. These efforts have contributed to improvements in service indicators and community satisfaction. However, despite these achievements, operational challenges persist, particularly in terms of system integration, human resource readiness, and infrastructure reliability.

Previous experiences across Indonesian public hospitals indicate that the adoption of HMIS does not automatically lead to improved employee performance. In many cases, hospitals encounter a gap between technological implementation and actual performance outcomes. Issues such as limited digital literacy, uneven user adaptation, unstable network infrastructure, and inconsistent managerial supervision often constrain the effective utilization of digital systems. As a result, expected gains in efficiency, accuracy, and coordination are not always fully realized.

From an organizational perspective, regional public hospitals operate under unique governance arrangements. As Public Service Agencies (Badan Layanan Umum Daerah-BLUD), RSUDs must balance bureaucratic accountability, regulatory compliance, and budgetary constraints while maintaining service quality. These conditions differentiate public hospitals from private healthcare institutions and create distinct challenges for digital transformation, particularly in sustaining system use and aligning technology with organizational routines.

Theoretically, the relationship between information systems and employee performance has been widely discussed in the literature. The DeLone and McLean Information Systems Success Model emphasizes that system quality, information quality, and service quality influence system use, user

satisfaction, and net benefits, including performance outcomes. Similarly, the Human–Organization–Technology Fit (HOT-Fit) model highlights that information system success depends on alignment among technological capability, human competence, and organizational support. These frameworks suggest that technological sophistication alone is insufficient; performance improvements emerge only when systems are supported by capable users and strong organizational commitment.

Recent empirical studies (2020-2025) generally report positive associations between HMIS implementation and employee performance, including faster task completion, improved data accuracy, and enhanced coordination. However, these studies also consistently identify human and organizational readiness as the weakest dimensions of implementation, particularly in public hospitals within developing-country contexts. Moreover, most existing research relies on quantitative survey methods, offering limited insight into employees lived experiences, adaptive behaviors, and perceptions during system implementation.

This reveals several important research gaps. First, there is a lack of in-depth qualitative studies examining how HMIS reshapes daily work practices and performance effectiveness in regional public hospitals. Second, limited attention has been given to the role of managerial leadership and organizational commitment in sustaining digital system utilization. Third, existing studies rarely contextualize HMIS implementation within the specific governance structure of BLUD hospitals, where institutional complexity significantly influences digital outcomes.

The novelty of this study lies in its qualitative, context-specific exploration of HMIS implementation at RSUD Kota Tangerang Selatan during Indonesia's accelerated post-pandemic digital transformation. Unlike prior research that focuses primarily on system acceptance or technical evaluation, this study adopts a socio-technical perspective that integrates technological, human, and organizational dimensions to understand employee performance effectiveness. By capturing perspectives from administrative staff, medical personnel, IT officers, and managers, this research provides a holistic view of how digital systems are experienced and enacted in everyday hospital operations.

Furthermore, the 2023-2025 period represents a transitional stage in Indonesia's digital governance, shifting from emergency-driven digital adoption toward more sustainable institutionalization. Examining HMIS implementation during this phase offers valuable insights into the long-term effectiveness of public sector digital transformation initiatives.

LITERATURE REVIEW

Recent international studies highlight the growing importance of Management Information Systems (MIS) in improving hospital operations and employee performance, particularly in the context of accelerated digital transformation in public healthcare institutions. Post-pandemic reforms have intensified the adoption of integrated Hospital Management Information Systems (HMIS) to enhance efficiency, data accuracy, and service coordination.

Alharthi et al. (2023) demonstrated that the implementation of hospital information systems significantly improves workflow efficiency and administrative effectiveness in public healthcare organizations. Their findings emphasize that system integration and information quality contribute positively to employee performance. However, the study also notes that limitations in user competence and inconsistent managerial support may reduce the long-term impact of system implementation.

Similarly, Mensah et al. (2023) found that system quality and data reliability positively influence health professionals' performance and service delivery. Nevertheless, their research revealed persistent challenges related to digital literacy gaps, resistance to change, and inadequate organizational readiness, particularly in public hospitals within developing-country contexts. These findings suggest that technological advancement alone is insufficient to guarantee sustainable performance improvement.

The results of these studies are consistent with the DeLone and McLean Information Systems Success Model, which explains performance outcomes through system quality, information quality, service quality, user satisfaction, and system use. They are also reinforced by the Human-Organization-Technology Fit (HOT-Fit) Model, which emphasizes the alignment of technological capability, human readiness, and organizational commitment in determining information system success.

Despite these contributions, the existing literature reveals several research gaps. First, most recent studies rely predominantly on quantitative survey methods, offering limited insight into employees lived experiences, adaptive behaviors, and organizational dynamics during MIS implementation. Second, there remains a lack of in-depth qualitative research focusing on regional public hospitals, particularly those operating under public service agency (BLUD) governance structures. Third, limited attention has been given to the role of collective organizational processes, such as peer support and managerial supervision in sustaining system utilization and performance effectiveness.

Addressing these gaps, the present study adopts a qualitative case study approach to explore how technological, human, and organizational dimensions interact to influence employee performance effectiveness in a regional public hospital in Indonesia. By providing contextual and experiential insights, this research seeks to extend existing MIS literature and contribute to a more comprehensive understanding of sustainable digital transformation in public healthcare institutions.

METHODOLOGY

This study employed a qualitative approach with a case study design to explore and understand in depth how the Management Information System (MIS) influences employee performance effectiveness at RSUD Kota Tangerang Selatan (South Tangerang Regional Public Hospital).

The qualitative approach was chosen because it allows the researcher to gain a rich and holistic understanding of the phenomenon within its real-life

context examining the experiences, perceptions, and interpretations of employees and managers directly involved in the implementation of MIS.

The study focuses on uncovering how employees interact with the MIS, how they adapt their work processes to the system, and how organizational and technical conditions affect the overall effectiveness of employee performance. The objectives of the study are:

1. To analyze the implementation of the Management Information System (MIS) in daily hospital operations.
2. To explore how the MIS affects the effectiveness of employee performance.
3. To identify organizational, technical, and human factors that influence the relationship between MIS and performance effectiveness.

The implicit hypothesis of this study assumes that the Management Information System enhances employee performance effectiveness when organizational commitment, human resource readiness, and technical integration function synergistically. Conversely, ineffective alignment among these factors may reduce system utilization and weaken its impact on performance.

Although qualitative research does not operationalize variables numerically, this study is structured around key analytical variables adapted from the Human, Organization, Technology Fit (HOT-Fit) framework and Information System Success Models. These include:

1. Human Dimension: digital competence, user experience, adaptability, and resistance to change.
2. Organizational Dimension: managerial support, leadership involvement, institutional policy, and training programs.
3. Technological Dimension: system reliability, integration quality, accessibility, and ease of use.
4. Performance Effectiveness Indicators: administrative efficiency, data accuracy, workflow coordination, and service quality.

These dimensions interact dynamically, shaping how the MIS contributes to or constrains employee performance effectiveness in a hospital environment. The research population includes all hospital employees involved in MIS operations, both directly (as system users) and indirectly (as supervisors, IT staff, and supporting administrators).

Using purposive sampling, 30 informants were selected to ensure diversity and data saturation. The composition of informants includes administrative and patient service staff (MIS end-users), IT and system maintenance personnel. department heads and mid-level managers, medical personnel (doctors or nurses) actively interacting with the MIS.

This selection ensures the inclusion of multiple perspectives across hierarchical and functional levels, representing the human, organizational, technical interaction central to this study.

In qualitative studies, the researcher serves as the primary instrument, responsible for interpreting meanings and managing field interactions. To enhance reliability, three supporting instruments were used:

1. Semi-Structured Interview Guide
   Developed to explore experiences, challenges, and perceptions related to MIS usage. Examples of guiding questions:
   1) How does the MIS affect your work efficiency and coordination?
   2) What obstacles or limitations do you encounter while using the system?
   3) What forms of support or training have been provided?
2. Field Observation
   Sheet Used to observe how employees use the system, respond to technical issues, and integrate MIS functions into their workflow.
3. Documentation Checklist
   Compiled documents such as performance reports, standard operating procedures (SOPs), hospital strategic plans, annual reports, and digitalization progress records for triangulation purposes.

The data collection process was conducted in three stages:

1. Preparation Stage
2. Implementation Stage
3. Validation Stage

All data were recorded, transcribed, and coded systematically for further analysis. This study adapts and extends previous models of Information System Success (DeLone & McLean, 2003) and the HOT-Fit Model (Yusof et al., 2008) by integrating contextual dimensions of local governance and public sector digital transformation. The developed conceptual model links:

Technological Integration → Work Adaptation → Employee Performance Effectiveness.

The research thus provides a contextual innovation (novelty) by examining MIS implementation in a regional public hospital (BLUD) setting, where policy, resource allocation, and service orientation differ from private institutions.

This contextualization is the new aspect of the research, enriching the theoretical discussion on digital transformation effectiveness in public health services.

Data were analyzed using the Interactive Model proposed by Miles, Huberman, and Saldaña (2014), involving three major components:

1. Data Reduction:The process of organizing, simplifying, and coding raw data into major categories such as system usage, human adaptation, technical challenges, and performance outcomes.
2. Data Display:Thematic matrices, tables, and descriptive narratives were used to present categorized data, highlighting key relationships among themes.
3. Conclusion Drawing and Verification:The researcher interpreted patterns, identified causal relationships, and verified conclusions

through triangulation and cross-checking with informants.

This iterative process continued throughout fieldwork to ensure validity and depth in interpretation. Data trustworthiness was ensured through the four criteria proposed by Lincoln and Guba (1985):

1. Credibility: Achieved through prolonged engagement, triangulation, and member checking.
2. Transferability: Established by providing rich, detailed descriptions of the context and participants.
3. Dependability: Maintained through consistent documentation of procedures and reflexive field notes.
4. Confirmability: Secured by maintaining researcher neutrality and transparent data audit trails.

All participants were informed of the research objectives, confidentiality measures, and their right to withdraw without penalty. Data anonymity was maintained through coding and secure data storage. Ethical approval was sought from RSUD Kota Tangerang Selatan's ethics committee before field data collection began.

In summary, this study adopts a qualitative case study design to analyze the influence of the Management Information System on employee performance effectiveness at the South Tangerang Regional Public Hospital. By integrating interviews, observations, and document analysis, the research aims to uncover how human, organizational, and technological factors interact to shape work effectiveness in a digitalized public health environment.

The implicit research hypothesis guiding this study suggests that the Management Information System positively affects employee performance effectiveness when supported by sufficient organizational commitment, human resource readiness, and robust technical infrastructure.

This study contributes to the development of a context-sensitive qualitative framework for evaluating digital transformation in regional public healthcare institutions in Indonesia.

RESEARCH RESULT

Data analysis was conducted using the Miles, Huberman, and Saldaña (2014) interactive model, consisting of data reduction, data display, and conclusion drawing. The analysis addressed the main research question: How does the implementation of the Management Information System (MIS) influence employee performance effectiveness, and what organizational, technical, and human factors shape this relationship?

From the thematic analysis of interviews, observations, and documents, four dominant themes emerged as illustrated in Table 1.

Table 1. Summary of Key Research Findings

Theme	Findings	Supporting Evidence (Qualitative)
Administrative Efficiency	MIS reduced paperwork, improved data entry accuracy, and accelerated report generation.	"Reports that used to take a week can now be generated within a day." (Admin Staff)
Human Adaptation	Employees' digital skills varied; younger staff adapted faster, while senior staff experienced anxiety and required more support.	"The system helps, but some of us still need more training." (Nurse)
Organizational Support	Strong managerial involvement enhanced system utilization and accountability, but	"If the head monitors system use, everyone becomes more disciplined." (IT Officer)
	Leadership commitment was inconsistent.	
Technical Reliability	System integration across departments improved coordination, but network instability occasionally disrupted operations.	"When the server lags, the workflow stops temporarily." (Pharmacy Staff)

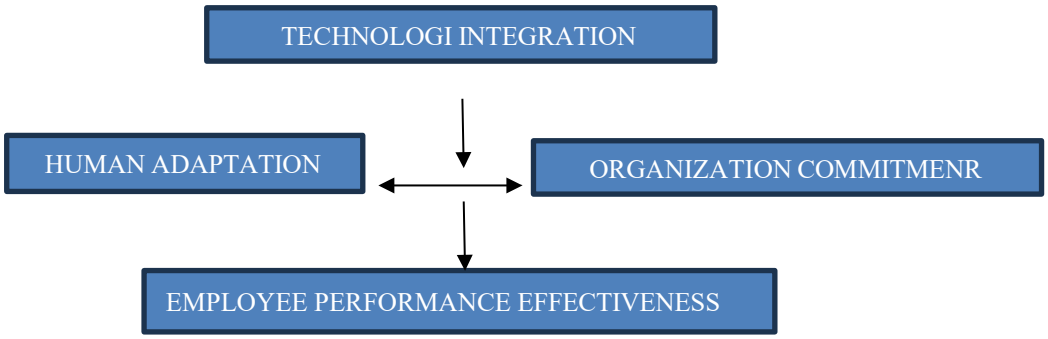

Figure 1. Interaction of Human, Organizational, and Technological Dimensions

This interaction model illustrates that employee performance effectiveness depends on the synergy among three critical dimensions:

1. Technological (system quality, accessibility, reliability)
2. Human (digital competence, user engagement)
3. Organizational (leadership, policy, and support).

These findings support the implicit research hypothesis that MIS enhances employee performance effectiveness when organizational commitment, human readiness, and technical integration operate synergistically.

1. Addressing the Research Problem

   The study's main problem was the suboptimal employee performance due to fragmented information flow and manual processes.

2. Importance of Human and Organizational Dimensions

Although technological advances improved work speed, the study found that human and organizational factors critically determine the extent of system success. This underscores that technological transformation must be accompanied by capacity building and leadership engagement, consistent with the HOT- Fit model (Yusof et al., 2008) and DeLone & McLean's (2003) IS success framework.

3. Implicit Hypothesis Validation

Implicitly, the hypothesis proposed that: The Management Information System positively influences employee performance effectiveness when organizational commitment, human readiness, and technical infrastructure are well integrated.

4. Implications for Public Sector Digital Transformation

This study provides new insight into digital transformation in regional public hospitals (BLUD), where bureaucratic structures and budget limitations often hinder system sustainability. Unlike private hospitals, RSUD operations depend heavily on government policies and public service mandates. Therefore, MIS effectiveness not only depends on technology but also on policy consistency, infrastructure investment, and cross-departmental governance.

The research demonstrates that the Management Information System has transformed administrative and operational workflows at South Tangerang Regional Public Hospital. However, the sustainability of its impact depends on strengthening three interrelated areas:

1) Human capacity development through structured digital literacy programs
2) Organizational reinforcement via leadership commitment and policy integration.
3) Technological reliability ensured by stable networks and consistent maintenance.

By aligning these dimensions, public hospitals can achieve long-term digital effectiveness, ensuring that MIS implementation not only modernizes management practices but also enhances employee performance and service quality.

DISCUSSION

This study demonstrates that the implementation of the Management Information System (MIS) at RSUD Kota Tangerang Selatan has a generally positive influence on employee performance effectiveness, particularly in improving administrative efficiency, data accuracy, and interdepartmental coordination. The findings confirm that MIS reduces manual workloads and accelerates reporting processes, enabling employees to perform their tasks more efficiently. These results align with the theoretical expectation that MIS enhances performance by providing timely and accurate information to support daily operations (Laudon & Laudon, 2023).

However, the effectiveness of MIS implementation is strongly influenced by human and organizational factors. Variations in digital literacy and adaptability among employees significantly affected system utilization. Younger and digitally proficient staff adapted more quickly, while senior employees required additional training and support. This finding supports the Human dimension of the HOT-Fit model, which emphasizes that system success depends on users' competence and acceptance rather than technological sophistication alone.

Organizational commitment emerged as a critical determinant of performance outcomes. Units with active managerial supervision and clear leadership support demonstrated higher levels of system discipline and accountability. In contrast, inconsistent leadership engagement resulted in partial system utilization and reduced performance gains. This result is consistent with organizational readiness theories, highlighting leadership commitment as a key driver of sustainable digital transformation in public sector institutions.

Overall, the findings validate the implicit hypothesis of this study that MIS positively influences employee performance effectiveness when human readiness, organizational support, and technological reliability are aligned. The interaction among these dimensions confirms that digital transformation in regional public hospitals is a socio-technical process rather than a purely technological intervention. In the context of BLUD-type public hospitals, MIS effectiveness depends on continuous capacity building, consistent leadership involvement, and sustained infrastructure support to achieve long-term performance improvements.

CONCLUSIONS AND RECOMMENDATIONS

This study aimed to analyze the influence of Management Information System (MIS) implementation on employee performance effectiveness at the South Tangerang Regional Public Hospital (RSUD Kota Tangerang Selatan) within the context of accelerated digital transformation in public healthcare institutions. Using a qualitative case study approach, the research explored the interaction between technological, human, and organizational dimensions in shaping employee performance outcomes.

The findings demonstrate that MIS implementation has positively influenced employee performance effectiveness by improving administrative efficiency, enhancing data accuracy, and strengthening coordination across hospital units. The system reduced manual workloads and supported faster completion of routine tasks, enabling employees to focus on more value-added activities. However, the effectiveness of MIS utilization varied across departments and employee groups, largely due to differences in digital literacy, adaptability, and managerial supervision.

The study further confirms that technological advancement alone is insufficient to ensure sustainable performance improvement. Strong organizational commitment, consistent leadership involvement, continuous capacity building, and reliable technical infrastructure are critical factors in maximizing the benefits of MIS implementation. These findings align with the DeLone and McLean IS Success Model and the HOT-Fit framework, emphasizing the importance of alignment between technology, human readiness, and organizational support.

Overall, this research contributes context-specific qualitative insights into MIS implementation in regional public hospitals and underscores the need for a holistic approach to digital transformation that integrates technological, human, and organizational dimensions.

RECOMMENDATIONS

Based on the research findings, several recommendations are proposed:

1. For Hospital Management

   Hospital leaders should strengthen managerial supervision and institutional policies related to MIS usage. Regular monitoring, clear standard operating procedures, and leadership role modeling are essential to ensure consistent system utilization across departments.

2. For Human Resource Development

   Continuous digital literacy and capacity-building programs should be implemented, particularly for employees who experience difficulties adapting to digital systems. Structured training and peer-learning mechanisms can reduce resistance to change and enhance user confidence.

3. For Technological Improvement

   Investment in reliable network infrastructure, system integration, and technical maintenance is necessary to minimize operational disruptions and ensure system sustainability.

4. For Future Research

   Future studies are encouraged to adopt mixed-methods or longitudinal designs to measure performance outcomes over time and to compare MIS implementation across different regional hospitals or governance models. Further exploration of leadership styles and organizational culture in digital transformation contexts is also recommended.

ADVANCED RESEARCH

Despite its contributions, this study has several limitations that should be acknowledged. First, the research adopts a qualitative case study approach focusing on a single regional public hospital. While this design allows for in-depth contextual analysis, the findings may have limited generalizability to other hospitals with different organizational structures, technological maturity levels, or governance models.

Second, the study relies primarily on self-reported data obtained through interviews and observations. Although triangulation was applied to enhance credibility, subjective perceptions may still influence the interpretation of MIS effectiveness and employee performance outcomes. In addition, this research captures employee experiences at a specific stage of digital transformation, which may evolve over time as system usage becomes more mature.

Future research is therefore encouraged to address these limitations by employing mixed-methods or longitudinal designs to examine changes in employee performance effectiveness over an extended period. Comparative studies across multiple regional hospitals or between public and private hospitals could provide broader insights into how governance structures influence MIS implementation outcomes. Further research may also explore the role of leadership styles, organizational culture, and policy alignment as moderating variables in the relationship between MIS implementation and employee performance effectiveness.

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