Journal of Economich, Technology and Business (JETBIS)
Volume 5, Number 2 February 2026
p-ISSN 2964-903X; e-ISSN 2962-9330

Cloud-Based ERP Integration in Regional Hospitals: A Critical Analysis Success Factors and Change Management in Indonesia

***Wahyu Eko Saputro[1], Vika Fransisca[2]**
Sekolah Tinggi Ilmu Ekonomi Cirebon, Indonesia[12]
*Correspondence: ekow47103@gmail.com

KEYWORDS:
cloud- based ERP; regional hospital; critical success factors; ADKAR; change management; digital transformation.

ABSTRACT

Digital transformation in the public health sector has become increasingly urgent to meet demands for efficiency, transparency, and integrated services. In this context, the implementation of cloud-based Enterprise Resource Planning (ERP) systems represents a strategic solution for Regional Hospitals (RSD) in Indonesia. This study aims to identify the Critical Success Factors (CSFs) and examine the role of change management using the ADKAR model in supporting successful cloud ERP implementation. A qualitative case study approach was employed across several regional hospitals, with data collected through in-depth interviews, field observations, and document analysis. The findings indicate that the success of cloud ERP implementation is strongly influenced by digital readiness, leadership support, user training, and the quality of vendor partnerships. Furthermore, the ADKAR model effectively facilitates the transition process by guiding organizational change from awareness to reinforcement. The implementation also contributes to operational efficiency, including reduced inventory costs, faster HR administrative processes, and improved reporting transparency. However, several challenges persist, such as user resistance, limited sustainable budgets, and disparities in digital infrastructure across regions. This study concludes that successful cloud ERP implementation requires an integrative approach that combines technological, organizational, and human factors to achieve sustainable outcomes in public healthcare systems.

INTRODUCTION

The digitalization of healthcare services in Indonesia is increasingly urgent due to the increasing complexity of hospital operations, limited resources, and demands for transparency and efficiency in services. Amid these changes, the integration of cloud- based Enterprise Resource Planning (ERP) systems has become a strategic solution widely considered by Regional Hospitals (RSD) to improve efficiency, accountability, and data interoperability between service units (Al-Fawaz et al., 2008; Arpaci, 2017). However, this transformation is not without challenges, especially in the public sector such as RSD which still faces structural, cultural, and technological barriers.

Cloud- based ERP in hospitals is crucial because it integrates various functions—finance, logistics, HR, and medical records management—into one efficient and centralized system. On the other hand, many digitalization initiatives in the public healthcare sector fail due to a lack of change management and an unfamiliarity with critical success factors (Critical Success Factors). Success Contextual Factors / CSFs (Bradley, 2008). Therefore, a deep understanding of CSFs and change strategies is necessary. Management is crucial to ensure the success of cloud ERP implementation in Indonesia's complex and often bureaucratic RSD environment.

Theoretically, the success of ERP implementation depends on a combination of organizational readiness, management commitment, user participation, and a structured change management approach (Finney & Corbett, 2007; Nah et al., 2001). Cloud ERP offers flexibility and cost efficiency compared to traditional ERP, but requires a higher level of digital readiness and adaptive business process structure adjustments (Arpaci, 2017).

Table 1. Comparison of Cloud ERP vs On- Premise ERP in the Healthcare Sector

Aspect	Cloud ERP	On- Premise ERP
Initial Investment	Low	Tall
Scalability	Tall	Limited
Infrastructure Needs	Minimum	Tall
Data Security	Vendor Dependent	Internally Managed
Implementation Speed	Fast (3–6 months)	Long (12–24 months)

Source: (Ali & Miller, 2017; Arpaci, 2017; Olson & Staley, 2012)

Several previous studies have identified factors influencing the success of ERP implementation, such as management support, user training, and infrastructure readiness. However, the majority of studies were conducted in the private and manufacturing sectors, such as those by Finney & Corbett (2007), and Al-Fawaz et al. (2008)who emphasized the importance of a structured approach in managing organizational change. In the health sector, studies are still limited and have not examined the context of public hospitals in developing countries, including Indonesia.

There is a gap in the literature that comprehensively discusses Cloud ERP integration in Regional Hospitals, particularly those that incorporate a Critical ERP approach. Success Change management factors and strategies. Although there are numerous studies on ERP, the focus on implementation in the public sector, particularly in local government-owned healthcare facilities, remains inadequate (Ali & Miller, 2017; Arpaci, 2017; Soja, 2006). Furthermore, the bureaucratic characteristics and resistance to change typical of public hospitals make it difficult to directly adopt findings from other sectors.

This study presents a novel contribution by combining CSFs analysis and ADKAR model-based change management strategies to understand Cloud ERP integration in RSDs in Indonesia. This approach has not been widely applied in the context of public health in developing countries. By focusing on regional hospitals, this study also captures the unique complexities of the public sector facing the challenges of digitalization, resource constraints, and high demands on public services (Arpaci, 2017; Hiatt, 2006; Nah et al., 2001).

This study aims to identify critical success factors (CSFs) in the implementation of cloud-based ERP in a Regional Hospital, as well as analyze how change management strategies are applied in the system integration process. By examining these two aspects simultaneously, this study is expected to provide a more comprehensive understanding of the factors that influence the success or failure of cloud ERP implementation in the RSD environment (Bradley, 2008; Hiatt, 2006; Somers & Nelson, 2004).

In the Indonesian context, digital system integration in the healthcare sector still faces challenges such as uneven infrastructure, limited IT human resources, and an organizational culture that does not yet support digitalization. A 2023 report from the Ministry of Health stated that less than 40% of regional hospitals have integrated ERP or Hospital Information Systems (HIS). This indicates a gap between digital transformation policies and implementation readiness in the field (Ali & Miller, 2017).

From a practical perspective, this research is expected to provide implementable recommendations for hospital management, technology providers, and local governments in designing effective digitalization strategies. Academically, the results of this study will enrich the literature on ERP and change management in the public sector, particularly in the context of developing countries (Arpaci, 2017; Bradley, 2008). This research also has the potential to serve as a reference for comparative studies in other public service sectors.

This article is structured into several main sections. The introduction explains the background, urgency, and research gaps. The literature review examines the concepts of cloud ERP, CSFs, and change. management. The methods section describes a qualitative case study approach to several RSDs in Indonesia. The results and discussion integrate field findings with the theoretical framework. Finally, the concluding section presents conclusions and policy recommendations. With this structure, it is hoped that the article can provide theoretical and applied contributions to the implementation of digital transformation in the Indonesian public health sector.

RESEARCH METHOD

This research uses a qualitative approach with a case study method to understand in depth the critical success factors (Critical Success Factors / CSFs) and change management strategies in the implementation of Cloud-Based ERP in Regional Hospitals (RSD) in Indonesia. A qualitative approach was chosen because it was considered most appropriate for exploring complex phenomena in the context of public sector organizations, particularly in the digital system integration process involving structural, cultural, and technological dynamics.

The population in this study includes all Regional Hospitals under the auspices of provincial and district/city governments in Indonesia that have or are currently implementing cloud- based ERP systems. The sample was selected using a purposive sampling technique with the criteria that the RSD has implemented Cloud ERP for at least 1 year, has official implementation documentation, and is willing to provide data access and key informants. Three regional hospitals from different regions (Java, Sumatra, and Kalimantan) were selected as case study locations to obtain a more representative picture of cross-regional challenges and strategies.

The main instrument in this study was a semi-structured interview guide developed based on the Critical Theory framework. Success Factors (CSFs) and the ADKAR change management model. This instrument was used to explore the perceptions and experiences of key informants, including hospital directors, IT heads, ERP project managers, and representatives from cloud ERP vendors. Additional instruments such as a digitalization process observation checklist and analysis of internal policy documents were used to supplement and verify the primary data.

Data collection techniques were conducted through in-depth interviews with key informants at each hospital, both face-to-face and online. Interviews were recorded, transcribed, and analyzed thematically. In addition to the interviews, researchers also collected supporting documents such as ERP implementation roadmaps, internal evaluation reports, project meeting minutes, and hospital management's digitalization policies. Field observations were also conducted to directly understand the dynamics of cloud ERP system usage in each hospital, including interactions between work units impacted by the new system.

The research procedure began with an initial exploration phase to identify hospitals that met the inclusion criteria. After obtaining approval, primary data were collected through interviews and observations, and secondary data were collected through available documentation. This process lasted approximately four months and involved several stages: exploration, data mining, cross-validation (triangulation), and drawing initial conclusions. Each piece of data collected was analyzed repeatedly to ensure coherence between the empirical information and the conceptual framework used.

The data analysis technique in this study uses a thematic analysis approach with the help of qualitative software (such as NVivo) to code, group, and interpret the data. The analysis was conducted inductively, by allowing key themes to emerge from the field data, then linked back to the CSFs theory and the ADKAR model. The results of the analysis were then synthesized in the form of a theoretical narrative that explains how each success factor and change management approach plays a role in the success or failure of the integration of a cloud- based ERP system in a

regional hospital environment. Data validity was strengthened through triangulation techniques of sources and methods, as well as providing checking with key informants to confirm the findings.

RESULT AND DISCUSSION

Analysis of the Level of Digital Readiness of Regional Hospitals for Cloud ERP

Cloud-Based ERP integration requires organizational digital readiness, encompassing infrastructure, digital culture, and human resource capabilities. Based on interviews and field observations, it was found that most Regional Hospitals (RSD) in Indonesia are still in the early stages of digital maturity, with a predominance of manual systems and a lack of data integration between service units. This finding reinforces a report by Arpaci (2017) which states that digital transformation in the public health sector in developing countries still faces structural and technological barriers. Furthermore, according to Ali & Miller (2017) digital readiness is an absolute prerequisite before implementing a cloud- based ERP system. Finney & Corbett (2007) also stated that the level of initial readiness will determine the complexity of the change process that an organization must go through.

Some public sector organizations (RSDs) admitted to having basic infrastructure constraints, such as unstable internet connections and a lack of hardware to support cloud ERP systems. These limitations directly impact system performance and reduce user trust. Bradley (2008) study showed that immature technological infrastructure is a major factor in ERP system implementation failure. Soja (2006) also stated that the success of ERP in the public sector is heavily influenced by the availability of adequate digital infrastructure. This aligns with the findings of Nah et al. (2001) who emphasized the importance of technological readiness as a critical success factors in ERP projects.

From an organizational culture perspective, resistance to digitalization remains quite high, particularly among senior medical personnel and administrative staff accustomed to manual systems. This demonstrates the importance of change management as an integral part of the digital transformation process. Hiatt (2006) emphasized in his ADKAR model that awareness *and* desire *are* the initial elements that must be established before initiating change. A study by Somers & Nelson (2004) also highlighted that user engagement is a critical factor in the success of ERP implementation. Arpaci (2017) added that psychological factors such as perceived technology risk and additional workload can hinder the adoption of new systems in public settings.

Variations in readiness levels were also found between hospitals based on geographic location. Hospitals located in large cities tend to have more adequate infrastructure and human resources more familiar with digital technology. Conversely, hospitals in underdeveloped regions experience a significant digital divide. This supports findings from the Indonesian Ministry of Health (2023) that the digitalization of healthcare services remains concentrated in urban areas. A report by Bappenas (2022) also revealed disparities in access and adoption of technology between regions. Olson & Staley (2012) in a comparative study of ERP also found that digital readiness varies significantly depending on the institution's location and fiscal capacity.

Table 2. Digital Infrastructure Comparison between Urban and Rural RSD

Region	Internet Speed	IT Staff Ratio	System Integration Level

Urban RSD (A)	High (>20 Mbps)	1:30	Moderate
Suburban RSD (B)	Medium (5–10 Mbps)	1:60	Low
Rural RSD (C)	Low (<5 Mbps)	1:120	Very Low

Source : Field Interviews & Infrastructure Review (2023), adapted from the Ministry of Health (2023)

Besides infrastructure readiness, human resource (HR) readiness is a significant obstacle. Some hospitals don't even have an internal IT division, leaving the ERP management process entirely to vendors. This situation risks reducing institutional control and leading to high dependence on external parties. Motwani et al. (2005) emphasize the importance of strengthening internal competencies for the long-term success of ERP. Meanwhile, Nah et al. (2001) suggest that organizations form cross-functional teams that are involved from the start to build a sense of ownership of the new system. Finney & Corbett (2007) also emphasize that intensive training is one of the keys to a successful transition to a cloud ERP system.

Local governments, as hospital owners, also play a crucial role in supporting this digital readiness. Budgetary support, policies, and incentives for digital transformation remain sporadic and uneven. Several hospital heads noted that ERP system procurement is often not accompanied by long-term support such as cloud operational costs, ongoing training, and human resource development. Setyarto et al. (2025) stated that top management involvement is very important, especially in the context of public sector organizations. Zavatin et al. (2023) and Bilgiç & Aydoğan (2023) also emphasized that without leadership commitment, the digitalization process will be partial and unsustainable.

Thus, digital readiness is a key prerequisite for the successful integration of a cloud- based ERP system in a regional hospital. Without adequate readiness, system implementation tends to be a formality project with no real impact on service efficiency or organizational performance improvement. Therefore, a Cloud ERP implementation strategy must begin with a comprehensive readiness mapping and a structured change management approach. This aligns with the frameworks of Kontić & Vidicki (2018), Faro et al. (2022), Kruszyńska-Fischbach et al. (2022)which place readiness at the heart of the organization's overall strategy. assessment as a crucial stage in digital transformation in the public sector.

Critical Identification Success Factors in Cloud -Based ERP Implementation

Identification *Critical Success Factors* (CSFs) are key aspects in understanding the success of Cloud-Based ERP integration in Regional Hospitals (RSD). The results of this study indicate that the success of ERP implementation is determined not only by technological aspects, but also by interrelated organizational and managerial factors. Top management support, clarity of project vision, and cross-unit involvement emerged as dominant factors in all RSD case studies analyzed. This finding aligns with research by Elbanna (2013), Kontić & Vidicki (2018) and Ashja et al. (2015)who placed *top management support* as the most fundamental CSF in an ERP project.

Top management support at RSD is reflected in the provision of budget, policy legitimacy, and direct involvement of leaders in strategic decision-making for ERP projects. Hospitals whose directors are actively involved in steering project committees showed higher ERP module completion rates and lower user resistance. Bradley (2008) and Motwani et al. (2005) emphasized that strong leadership can minimize inter-unit conflict and accelerate the system adoption process.

This is further supported by Soja (2006) who stated that in the public sector, the role of leadership is even more crucial than in the private sector due to the strong bureaucratic structure.

The next success factor is the suitability of the business process (*business process). process fit*) between the cloud ERP system and the hospital workflow. Field findings show that the RSD that carries out *business process reengineering* (BPR) before ERP implementation tends to be more successful than those who directly adopt the system without process adjustments. This supports the views of Davenport (2014), Al-Fawaz et al. (2008), and Olson & Staley (2012) who emphasized that ERP should be a process transformation tool, not just the digitalization of old procedures.

Human resource readiness and competence also emerged as a highly influential CSF. RSD, which has an internal IT team and *project champion* This indicates a more optimal level of ERP system utilization. Conversely, complete dependence on vendors without knowledge transfer causes difficulties in system maintenance and development. This finding is consistent with Finney & Corbett (2007) and Arpaci (2017) who emphasized the importance of strengthening internal capabilities in the sustainability of cloud- based ERP.

In addition, user training (*user training and education*) is a determining factor in the operational success of the system. Hospitals that provide ongoing and role -based training Training) indicates a higher level of user acceptance. Users not only understand how to use the system, but also understand the benefits of ERP in supporting their daily work. This is in line with the findings of Somers & Nelson (2004), Bradley (2008), and Soja (2006) who position training as a CSF that has a direct impact on *user acceptance.*

Table 3. Key Critical Success Factors Identified in Regional Hospitals

Critical Success Factor	Implementation Impact	Supporting Literature
Top Management Support	Very High	Well et et al. (2001); Bradley (2008)
Business Process Fit	High	Davenport (2014)Al-Fawaz et al. (2008)
Internal IT Capability	High	Motwani et al. (2005); Arpaci (2017)
User Training & Education	High	Somers & Nelson (2004); Soja (2006)
Vendor Partnership Quality	Medium– High	Olson & Staley (2012) Finney & Corbett (2007)

Source : Field Data Analysis (2024)

cloud ERP vendors is also a crucial CSF, especially in the context of technically challenged hospitals. Vendors who act as strategic partners, rather than simply technology providers, can assist hospitals with adaptation, system configuration, and change management. This finding supports studies by Olson & Staley (2012), Ali & Miller (2017), and Al-Fawaz et al. (2008) who emphasized the importance of *vendor reliability* And *knowledge sharing* in cloud ERP projects.

However, this study also found that CSFs are contextual and interdependent. No single factor guarantees the success of cloud ERP implementation in RSD. Success arises from a combination of strategic, technical, and human factors managed simultaneously. This reinforces the views of Finney & Corbett (2007), Somers & Nelson (2004), and Nah et al. (2001) that a holistic approach is very necessary in ERP implementation, especially in the public health sector.

Thus, the identification of CSFs in this study provides an empirical basis for RSDs and policymakers to design more realistic and sustainable Cloud ERP implementation strategies. Understanding these factors is also a crucial prerequisite for entering the more in-depth change management phase, which will be discussed in the next section.

Change management is a crucial component in the successful implementation of a cloud-based ERP system, particularly in public sector institutions such as Regional Hospitals (RSD). Field findings indicate that resistance to change is a major challenge in the hospital's digital transformation process. The ADKAR model developed by Hiatt (2006) has proven effective in mapping the stages of organizational change: Awareness, Desire, Knowledge, Ability, and Reinforcement. The use of this model in the context of RSD is highly relevant because it emphasizes individual behavioral change as the basis for overall organizational change (Bradley, 2008).

The initial stage, namely *Awareness* is the most crucial stage because many hospital staff do not yet understand the urgency of ERP system integration. Research shows that a lack of project socialization leads to rejection and distrust of the new system. Therefore, internal communication must be carried out intensively, not only through circulars but also through face-to-face meetings explaining the system's benefits to daily work. This aligns with the findings of Somers & Nelson (2004) that open and intensive communication is a key factor in building initial awareness of change. Arpaci (2017) also emphasized that initial perceptions greatly determine the level of user involvement in adopting a new system.

At the stage *Desire,* support from unit leaders, and direct employee involvement are crucial elements in fostering a desire for change. One successful hospital demonstrated increased user participation thanks to performance incentives and formal recognition for staff actively using the system. This aligns with the approach suggested by Hiatt (2006), who stated that a desire for change cannot be forced but must be fostered through internal and external motivation. Studies by Motwani et al. (2005) and Finney & Corbett (2007) also demonstrated that strengthening a desire for change accelerates the adoption of new technology systems.

Stages *Knowledge* focused on technical and functional training. Hospitals that developed ERP module-based training curricula and provided work practice simulations significantly improved user understanding of the system. Somers & Nelson (2004) emphasized the importance of training that focuses on actual work processes, not just on system usage. Meanwhile, Olson & Staley (2012) stated that a strong technical understanding will reduce resistance and increase adoption. This finding is also supported by Arpaci (2017), who stated that training increases self -efficacy in using digital systems in public settings.

Stages *Ability* shows how far staff are able to apply this knowledge to their daily work. Field data shows that hospitals that provide ongoing technical support through helpdesks and *change agent* Internal training, showing an acceleration in staff's ability to use ERP. This aligns with research findings from Finney & Corbett (2007), which stated that post-training guidance is important for an effective transition. al. (2001) also emphasized that internal mentoring is an effective strategy for bridging the capability gap between organizational units.

Table 4. ADKAR Implementation Effectiveness Across Case Hospitals

ADKAR Stage	Implementation Method	Effectiveness Level
Awareness	Town hall meetings, newsletters	Medium
Desire	Incentives, leadership role	High

Knowledge	Role-based training, simulation	High
Ability	Internal mentoring, helpdesk	Medium– High
Reinforcement	Performance reviews, audits	Medium

Source : Field Study (2024), Adapted from Hiatt (2006)

At the stage *Reinforcement* found that hospitals that regularly evaluate system performance and provide feedback to users tend to maintain long-term system use. Reinforcement is achieved through reporting on ERP-based unit performance and integrating system usage into performance assessment indicators. Hiatt (2006) stated that without reinforcement, changes that have occurred will tend to regress. This is supported by findings from Bradley (2008) and Olson & Staley (2012) that reinforcing change is a crucial part of creating a digital organizational culture.

However, the success of ADKAR implementation depends heavily on the consistency and leadership of change from hospital management. Institutions that view ERP as a purely technical project without considering the human and cultural aspects of the organization tend to fail at the Ability and Reinforcement stages. This reinforces Somers & Nelson (2004) argument that ERP is not just an IT project, but a comprehensive organizational change project. Soja (2006) also emphasized that digital transformation in the public sector requires a more holistic approach, including the implementation of change management.

Overall, the implementation of the ADKAR model in the cloud- based ERP integration process at RSD demonstrated significant effectiveness in managing resistance to change. With a systematic approach, from awareness to reinforcement, the hospital was able to build psychological and operational readiness to embrace the new digital system. These findings provide practical contributions to developing more humane and long-term change strategies in the public healthcare sector.

The Role of Stakeholders and Leadership in Supporting Digital Transformation

of internal and external stakeholders is a fundamental factor in supporting the successful implementation of a cloud- based ERP system at the Regional Hospital (RSD). Based on interviews and documentation, stakeholder involvement —including hospital leadership, the IT team, service unit heads, and the local government—is crucial to the direction and smoothness of digital transformation. Finney & Corbett (2007) emphasize that stakeholders Engagement must begin at the project planning stage so that all parties have the same understanding and commitment to the transformation goals. This finding is supported by Nah et al. (2001) and Somers & Nelson (2004) who stated that cross-functional involvement reduces resistance and strengthens the legitimacy of change.

Leadership is key to driving this engagement. RSDs with transformative leaders—those with a digital vision, capable of building cross-departmental communication, and serving as role models in system use— showed more effective ERP implementation results. Bradley (2008) explained that adaptive leadership plays a significant role in creating an organizational culture open to digital innovation. Hiatt (2006) also emphasized that successful change management begins with leadership that can inspire and facilitate employee behavioral transitions.

The local government, as the entity that owns the RSD, also plays a crucial role, particularly in budgeting, strategic policies, and technical support. Hospitals that receive explicit support from

the regional head (regent or governor) in the form of a Regional Regulation or Decree for ERP project implementation demonstrate consistent project implementation and adequate resource allocation. Motwani et al. (2005) emphasized that public sector digitalization projects require *political will* strong so as not to stop at the initiation stage. Arpaci (2017) and Soja (2006) also remind us that bureaucracy without top- down policy support tends to hinder technological innovation in public institutions.

Furthermore, the involvement of ERP vendors as external stakeholders should not be viewed simply as service providers. Vendors who act as strategic partners in the system adaptation and user training process accelerate an organization's understanding of new technology. Olson & Staley (2012) state that *vendor partnership Quality* is an important CSF, especially in sectors with minimal internal technological capabilities. This finding was also confirmed by Al-Fawaz et al. (2008) who showed that vendors who actively transfer knowledge contribute to the long-term success of ERP projects.

Table 5. Key Stakeholders and Their Roles in ERP Projects

Stakeholder	Role Description	Influence Level
Hospital Leadership	Strategic direction, resource allocation	Very High
Unit Heads	Operational coordination, internal advocacy	High
IT Department	System integration, technical support	High
Local Government	Budget, regulations, policy support	Very High
ERP Vendor	Technical partner, training provider	Medium– High

Source adapted from *Finney & Corbett (2007)*, Al-Fawaz et al. (2008)

However, the dynamics between stakeholders are not always harmonious. Some RSDs face challenges in the form of conflicting interests between service units and administrative units, particularly regarding ERP project budget allocation and data ownership. This situation reflects the importance of *stakeholders Alignment,* namely the alignment of goals and interests between stakeholders so that the transformation process runs smoothly. Somers & Nelson (2004) and Bradley (2008) emphasize the importance of the project leader's role as a mediator in uniting these various interests.

It is also important to establish communication forums between stakeholders on a regular basis, such as *project steering committee,* to monitor project progress and resolve any obstacles that arise. Hospitals that form cross-unit committees show increased coordination effectiveness and accelerated decision-making. Hiatt (2006) emphasized that *stakeholders feedback loop* Active leadership will strengthen the sustainability of organizational change. This is also suggested by Motwani et al. (2005) who stated that continuous stakeholder involvement is part of *change reinforcement strategy.*

Thus, the success of digital transformation through cloud- based ERP in regional hospitals is heavily influenced by the organization's ability to strategically manage stakeholders. Strong leadership, cross-unit collaboration, and healthy vendor partnerships are essential foundations for building a sustainable digital structure. These findings further emphasize that the human aspect and inter-entity relationships are just as important as the technological aspect in public sector digitalization projects.

of Cloud ERP Implementation on Hospital Operational Efficiency

cloud- based ERP implementation in Regional Hospitals (RSD) showed mixed results, depending on the extent to which the system was integrated and utilized by each organizational unit. In general, RSDs that successfully implemented the system comprehensively experienced increased operational efficiency in inventory management, finance, and human resource management. This aligns with the findings of Finney & Corbett (2007) who stated that process integration through ERP can reduce data redundancy and accelerate business processes. Olson & Staley (2012) also added that cloud- based ERP enables real- time visibility of operational processes, which increases the speed of managerial decision making.

dead stock levels. *stock*) and improve the automated goods requisition system based on actual usage data. One of the RSDs studied reported a 23% decrease in inventory value within six months of activating the ERP system. This finding is consistent with the Al-Fawaz et al. (2008) and Somers & Nelson (2004) emphasized the positive impact of ERP on hospital supply chain management. Arpaci (2017) also noted that cloud ERP is well-suited to hospital environments because it is flexible and easily adaptable to the dynamic needs of service units.

Efficiency has also been achieved in human resource and financial management, where attendance processes, honorarium calculations, and leave requests are now automated through the ERP system. Before ERP, these processes took several days, but now they can be completed in a matter of hours. Furthermore, financial data has become more transparent and easily traceable, strengthening public accountability. Motwani et al. (2005) emphasized that one of the advantages of ERP is its ability to increase transparency and efficiency in administrative processes. This is also echoed by Bradley (2008), who stated that administrative digitization directly contributes to cost efficiency and budget control.

However, the impact of ERP is not immediately felt across all hospital units. Some medical service units still show resistance to using the system, particularly in entering electronic medical records, which is perceived as increasing the workload. This situation indicates that technological change must be accompanied by behavioral change strategies and the formation of digital habits at the individual level. Hiatt (2006), through the ADKAR model, emphasizes that ability *and* reinforcement are crucial steps in ensuring the sustainability of change. Soja (2006) also notes that the success of ERP in the public sector depends on strengthening a comprehensive digital culture.

Table 6. Operational Efficiency Indicators Post-Cloud ERP Implementation

Operational Area	Before ERP	After ERP (6 months)	Improvement (%)
Inventory Turnover	2.1x per year	3.4x per year	+61.9%
Payroll Processing Time	5 days	<1 day	-80%
Procurement Lead Time	9 days	4 days	-55.6%
HR Service Ticket Res.	3.2 days	1.1 days	-65.6%

Source : Field Survey (2024), Adapted from Bradley (2008), *Olson & Staley (2012)*

The positive impact of ERP is also evident in the process of reporting hospital performance to higher-level agencies, such as health departments and local governments. ERP systems enable automated, dashboard -based reporting, reducing reliance on manual processes and accelerating data-driven policymaking. This finding is reinforced by Somers & Nelson (2004) and Finney & Corbett (2007) who emphasize that ERP supports *performance measurement system* more accurate

and real- time. On the other hand, the dashboard system also encourages a more active monitoring culture among hospital leaders.

Despite the many benefits achieved, several challenges remain, particularly in terms of ongoing cloud operational costs that need to be budgeted regularly. Some RSDs complained about the lack of flexibility in adapting ERP modules to local needs because the systems are provided by foreign vendors who do not yet fully understand the Indonesian public service context. Olson & Staley (2012) highlight that cloud ERP sustainability requires long-term cost planning and regular evaluation of vendor partnerships. Ali & Miller (2017) also emphasize the importance of *vendor localization* for the public sector in developing countries.

Overall, cloud- based ERP has been shown to positively impact operational efficiency in regional hospitals, particularly in administrative and logistical aspects. However, these benefits are only maximized if accompanied by a change management strategy, human resource involvement, and ongoing budget and policy support. Impact evaluations should be conducted periodically to ensure the system continues to adapt to operational needs and technological developments. This aligns with the continuous digital transformation approach recommended by Arpaci 2017; Bradley, 2008; Hiatt, 2006)

CONCLUSION

Study this aim For identify Critical Success Factors (CSFs) and analyze implementation management change based on the ADKAR model in implementation cloud- based ERP system at Regional Hospitals (RSD) in Indonesia. Based on studies cases carried out in several RSDs with approach qualitative, found that success cloud ERP integration is heavily influenced by the combination of factor digital readiness, leadership transformative, stakeholder involvement, and support to the process of change individuals and organizations. The main CSFs that contribute significant in success implementation such as support management peak, business process conformity, internal IT competency, quality vendor partnerships, as well as training based role. From the side management change, the ADKAR approach is proven effective in guide transition organization. The process of awareness, desire, knowledge, ability, and reinforcement walk more good at RSD who develops change strategies in a way structured and inclusive. In addition, the implementation of cloud- based ERP provides impact positive to efficiency operational, including in matter management logistics, HR, and reporting finance. However Thus, the challenge like resistance users, limitations budget sustainable, and constraints interoperability with system local Still need get attention in policy digitalization sector health public. Therefore that, research This recommend approach integrative between aspect technology, organization, and people so that implementation cloud ERP system in RSD can sustainable and impactful real to service health.

REFERENCES

Al-Fawaz, K., Al-Salti, Z., & Eldabi, T. (2008). Critical success factors in ERP implementation: A review. *European and Mediterranean Conference on Information Systems*, *35*(1), 1–18.

Ali, M., & Miller, L. (2017). ERP system implementation in public sector organizations: A study of key success factors. *Information Systems Management*, *34*(2), 123–135. https://doi.org/10.1080/10580530.2017.1292253

Arpaci, I. (2017). A hybrid model for ERP adoption in public hospitals: An empirical study in the developing world. *Journal of Organizational and End User Computing*, *29*(4), 1–22. https://doi.org/10.4018/JOEUC.2017100101

Ashja, M., Hadizadeh Moghadam, A., & Bidram, H. (2015). Comparative study of large information systems' CSFs during their life cycle. *Information Systems Frontiers*, *17*(3).

https://doi.org/10.1007/s10796-013-9445-6

Bilgiç, E., & Aydoğan, T. (2023). Investigating the role of organizational culture in the digitalization process: A critical analysis of the literature through co-word analysis. In *Organizational Behavior in the Digital World*.

Bradley, J. (2008). Management based critical success factors in the implementation of Enterprise Resource Planning systems. *International Journal of Accounting Information Systems*, *9*(4), 175–200. https://doi.org/10.1016/j.accinf.2008.03.001

Davenport, T. H. (2014). *Analytics at Work: Smarter Decisions, Better Results*. Harvard Business Press.

Elbanna, A. (2013). Top management support in multiple-project environments: an in-practice view. *European Journal of Information Systems*, *22*(3), 278–294. https://doi.org/10.1057/ejis.2012.16

Faro, B., Abedin, B., & Cetindamar, D. (2022). Hybrid organizational forms in public sector's digital transformation: a technology enactment approach. *Journal of Enterprise Information Management*, *35*(6), 1742–1763. https://doi.org/10.1108/JEIM-03-2021-0126

Finney, S., & Corbett, M. (2007). ERP implementation: A compilation and analysis of critical success factors. *Business Process Management Journal*, *13*(3), 329–347. https://doi.org/10.1108/14637150710752272

Hiatt, J. (2006). *ADKAR: A model for change in business, government and our community*. Prosci Research.

Kontić, L., & Vidicki, Đ. (2018). Strategy for digital organization: Testing a measurement tool for digital transformation. *Strategic Management*, *23*(2). https://doi.org/10.5937/straman1801029k

Kruszyńska-Fischbach, A., Sysko-Romańczuk, S., Napiórkowski, T. M., Napiórkowska, A., & Kozakiewicz, D. (2022). Organizational e-Health Readiness: How to Prepare the Primary Healthcare Providers' Services for Digital Transformation. *International Journal of Environmental Research and Public Health*, *19*(7), 3973. https://doi.org/10.3390/ijerph19073973

Motwani, J., Mirchandani, D., Madan, M., & Gunasekaran, A. (2005). Successful implementation of ERP projects: Evidence from two case studies. *International Journal of Production Economics*, *87*(3), 251–266. https://doi.org/10.1016/j.ijpe.2003.10.007

Nah, F. F. H., Lau, J. L., & Kuang, J. (2001). Critical factors for successful implementation of enterprise systems. *Business Process Management Journal*, *7*(3), 285–296. https://doi.org/10.1108/14637150110392782

Olson, D. L., & Staley, J. (2012). Case study of cloud-based ERP implementation in a public sector organization. *International Journal of Information Systems and Project Management*, *1*(1), 5–13. https://doi.org/10.12821/ijispm010101

Setyarto, D. B., Alimuddin, Mulyaningsih, & Judijanto, L. (2025). The role of e-government in increasing transparency and accountability of public administration in the digital era. *Edelweiss Applied Science and Technology*, *9*(2). https://doi.org/10.55214/25768484.v9i2.4908

Soja, P. (2006). Success factors in ERP systems implementations: Lessons from practice. *Journal of Enterprise Information Management*.

Somers, T. M., & Nelson, K. G. (2004). A taxonomy of players and activities across the ERP project

life cycle. *Information & Management*, *41*(3), 257–278. https://doi.org/10.1016/S0378-7206(03)00023-5

Zavatin, I., Ene Constantin, A. B., Bujor, D., & Frațiloiu, B. A. (2023). Study on the Impact of Organizational Culture, Knowledge Management and Digitalization on Sustainable Leadership. *Proceedings of the International Conference on Business Excellence*, *17*(1). https://doi.org/10.2478/picbe-2023-0152