

DIGITAL TRANSFORMATION AND HUMAN RESOURCE LITERACY: AN ANALYSIS OF CIVIL SERVANTS' READINESS IN IMPLEMENTING THE E-PERFORMANCE APPLICATION AT THE MAGELANG REGENCY HEALTH OFFICE

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ABSTRACT

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Digital Transformation, Digital Literacy, Civil Servants (ASN), e-Performance, Human Resource Management.

Digital transformation in Human Resource (HR) management within government institutions is a strategic mandate under Indonesia's electronic-based governance and digital transformation policies. This study aims to analyze the readiness of Civil Servants (ASN) at the Magelang Regency Health Office in implementing the e-performance BKN application as part of national digital policy implementation. This research employs a descriptive qualitative approach using in-depth interviews, literature review, and observation for data collection. The findings reveal that digital transformation has improved transparency in performance evaluation and enhanced reporting discipline. However, ASN readiness still faces significant challenges, particularly disparities in digital literacy. Senior employees experience difficulties in operating the application's technical features, while heavy public service workloads limit effective system utilization. In addition, inadequate infrastructure, such as unstable internet connectivity and slow server performance during peak reporting hours, further hinders implementation. As a result, the system is often used merely for administrative purposes rather than as a comprehensive performance management tool. Despite these obstacles, the e-performance BKN application has contributed to greater transparency and accountability in employee performance assessment in accordance with national regulations. The study concludes that successful digital transformation requires not only regulatory compliance but also reliable infrastructure, stable network systems, and continuous, adaptive digital literacy training for all employees.

1. INTRODUCTION

The world of work is currently undergoing a major shift due to the Fourth Industrial Revolution, which is bringing digital technology to the heart of every organization (Harahap et al, 2025). This change is not merely about replacing paper with screens, but rather a profound transformation in how Human Resource Management (HRM) functions.

Digital transformation is not merely a technological trend, but a strategic policy direction in strengthening digital governance within public sector institutions. The government has established Presidential Regulation No. 95 of 2018 on the Electronic-Based Government System (SPBE) as the primary legal framework to achieve clean and transparent governance. Furthermore, through Presidential Regulation No. 82 of 2023, the government is accelerating the national digital transformation, which mandates the integration of digital services. In the context of public organizations, digital literacy also reflects the institutional capacity of civil servants to adapt to organizational change and technology-driven work systems. In the context of civil service, this is

reinforced by Ministerial Regulation of the Ministry of State Apparatus and Bureaucratic Reform No. 6 of 2022, which serves as the basis for implementing digital performance management systems such as the BKN e-performance application to ensure every civil servant has measurable and objective evaluation standards.

Within government agencies, this trend is reflected through various initiatives to digitize bureaucracy, aimed at creating more effective, efficient, and transparent services (Al Hafis & Yogya, 2017; Irfan & Anirwan, 2023; Purba & Thamrin, 2025). Digital transformation in human resources management is not merely about efficiency demands but also serves as an indicator of how prepared an institution is to face technology-driven structural changes.

One of the main pillars of this digitalization is the implementation of electronic performance evaluation applications, such as the BKN e-performance (Nurhayati & Wahyudi, 2024; Zahra & Hartati, 2025). This system is designed to address the shortcomings of conventional evaluations, which are often subjective, moving toward more accurate and results-oriented assessments. The use of this application is expected to enhance discipline,

professionalism, and the quality of work among Civil Servants (ASN). However, the success of even the most advanced technology heavily depends on the human factor as the primary driver of the organization. This is where the role of digital literacy becomes crucial (Putranto, 2024).

Digital literacy is not merely the technical ability to operate devices, but encompasses the knowledge, skills, and behaviors required to utilize technology effectively to complete tasks optimally. In the context of public organizations, digital literacy also reflects the institutional capacity of civil servants to adapt to organizational change and technology-driven work systems. Within the public sector, a common challenge is the digital literacy gap within organizations. Often, the technological infrastructure is already in place, yet civil servants' proficiency in using it is uneven, which can ultimately hinder the transformation process itself.

The Magelang Regency Health Office, as an agency directly involved in public health services, bears a significant responsibility to ensure all its employees can adapt to this e-Performance system (Rahmadi & Rusmiati, 2025; Kevin & Wahyudi, 2025). Inadequate digital literacy can trigger resistance to change and reduce the effectiveness of the system that has been established.

Previous studies on e-performance implementation in public institutions generally focused on system effectiveness and administrative efficiency. However, limited studies specifically examine the relationship between digital literacy, workload pressures in public health services, and civil servants' readiness in implementing digital performance systems. Therefore, this study attempts to fill the gap by analyzing digital transformation readiness within a health-sector bureaucracy context.

Therefore, it is crucial to analyze the extent to which civil servants in this environment are prepared to adopt this digital transformation (Khaira, 2025). This study aims to capture the reality of civil servants' digital literacy and the challenges faced in implementing the BKN e-Performance application at the Magelang Regency Health Office, to provide recommendations for developing human resource competencies in the digital era.

Although national regulations have mandated the acceleration of digital transformation through the SPBE, on-the-ground realities indicate that human resource readiness remains a complex determining factor. At the Health Office, this challenge is particularly acute because civil servants are required to maintain high standards in public health services while adapting to a rigid reporting system. The potential conflict of interest between service delivery time and data entry time creates an urgency to examine the dynamics of civil servant readiness more deeply. Therefore, this study focuses on the following key issues:

1. How is digital transformation in HR management implemented at the Magelang Regency Health Office?
2. How can ASN readiness and digital literacy be analyzed?
3. What are the obstacles and challenges in implementing the e-performance BKN system at the Magelang Regency Health Office?
4. What is the role of leadership and institutional policy in minimizing resistance during the digital transition process?

2. METHODS

This study employs a qualitative approach with a descriptive design. This approach was chosen to provide an in-depth understanding of the phenomenon of Civil Servants' (ASN) readiness in facing digital transformation, particularly in operating the e-performance BKN application. The research focuses on the Magelang Regency Health Office as the primary unit of analysis. This study involved 8 informants consisting of structural officials, administrative staff, and health service personnel who actively used the e-performance application.

1. Data Collection Techniques

The data in this study were collected through two main techniques:

a. In-depth Interviews

Interviews with informants were conducted to obtain primary data directly from participants. Informants were selected using a purposive sampling technique and consisted of institutional leaders as well as ASN employees who use the e-performance BKN application. This method aimed to obtain comprehensive perspectives regarding both technical constraints and mental readiness during the digital adaptation process. Each interview lasted approximately 30–60 minutes and was conducted directly to obtain comprehensive information regarding digital adaptation experiences, technical barriers, and employee readiness.

b. Literature and Document Review

This technique was conducted by analyzing various secondary data sources, particularly scientific journals related to ASN digital literacy, the effectiveness of the e-performance BKN system, and theories of digital transformation in Human Resource Management (HRM). In addition to academic journals, supporting documents such as government regulations concerning bureaucratic digitalization and institutional performance reports were also utilized to strengthen the analysis.

2. Data Analysis Techniques

The process of data processing and analysis followed an interactive model consisting of several stages:

a. Data Reduction

The qualitative data analysis process was conducted interactively through data reduction, data display, and conclusion drawing. The researcher applied thematic analysis using several stages, namely open coding, categorization, theme identification, and interpretation of findings. Open coding was used to classify interview results into several themes such as digital literacy, organizational adaptation, infrastructure barriers, and work culture transformation.

b. Data Presentation

Organizing information in a narrative form to facilitate understanding and interpretation.

c. Conclusion Drawing

Verifying the data to provide answers to the research questions regarding ASN readiness.

3. Data Validity

To ensure the validity of the data, this study employed a triangulation technique. Triangulation was conducted by comparing information obtained from interviews with data found in journal document reviews and field observations, thereby ensuring a high level of analytical accuracy.

3. RESULTS AND DISCUSSION

3.1 Digital Transformation of Human Resource Management at the Magelang Regency Health Office

The adoption of the BKN e-performance application at the Magelang Regency Health Office represents a concrete step toward implementing Presidential Regulation No. 95 of 2018 on the SPBE. The research findings indicate that this digitalization has fostered a more documented work process. This aligns with Regulation of the Minister of State Apparatus Reform and Bureaucracy No. 6 of 2022, which stipulates that every employee's activity must align with organizational objectives. At the Health Office, this system enforces transparency, thereby minimizing "hidden performance" or evaluations based solely on personal connections. However, the system's effectiveness in practice remains highly dependent on the readiness of infrastructure and the digital literacy of its human resources. This finding indicates that digital transformation in the public sector requires not only technological readiness but also adaptive institutional capacity and organizational learning.

The implementation of the BKN e-performance application at the Magelang Regency Health Office is a tangible manifestation of digital transformation in the public sector. Based on the analysis, the transition from a manual to a digital system is not merely a change in tools but a paradigm shift in evaluating civil servant productivity. In line with the Public Sector Human Resource Management concept, this digitalization aims to create a leaner and more transparent bureaucracy (Samsudin, 2025). Observations indicate that e-performance has altered how employees document their daily activities. However, the system's effectiveness in practice is significantly influenced by the stability of digital infrastructure and users' understanding of the application workflow.

The implementation of e-performance has gradually shifted the organizational culture within the Health Office toward a more accountable and data-oriented work system. Employees are increasingly required to document their daily performance systematically, which encourages greater transparency and performance monitoring. This transformation indicates that digital governance is not only technological in nature, but also cultural, as it changes work behavior, communication patterns, and accountability mechanisms within public organizations.

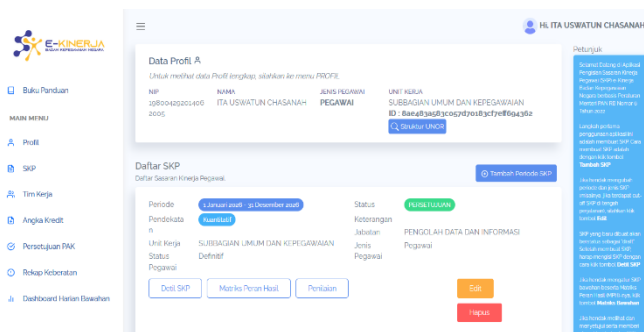


Figure 1. BKN e-performance Dashboard

The image above shows the operational interface of the e-performance application, which displays information on individual performance indicators. This system requires meticulous data entry to ensure that all task achievements are documented transparently and in accordance with applicable regulatory standards.

3.2 Analysis of Civil Servant Readiness and Digital Literacy

The readiness of civil servants to adopt e-performance within the Magelang Regency Health Office can be categorized into two main aspects:

a. Technical Readiness and Digital Skills

Variations in digital literacy levels were observed across age groups. Younger employees tend to adapt more quickly to the application's features, while senior employees often require more intensive guidance. This aligns with challenges in contemporary HRM, where organizations are required to bridge the digital divide so that technology does not become a burden for some personnel (Musmulyadi, 2022). Digital literacy encompasses the ability to understand, operate, and utilize digital systems effectively in supporting organizational performance.

b. Mental Readiness and Work Culture

Digital transformation demands behavioral change. Some civil servants feel that e-performance adds to their administrative burden because they must report daily. However, for some civil servants with good digital literacy, this application is actually seen as a convenience due to the certainty of performance ratings and direct linkage to the promotion or allowance system.

In the context of public service organizations, organizational culture plays an important role in determining the success of digital transformation. Employees who previously relied on conventional administrative practices are now required to adapt to technology-based work systems. This cultural transition often creates adjustment pressures, particularly among employees with limited digital competencies.

3.3 Obstacles and Challenges in Implementation

Although the BKN's e-performance system is already well-established, its implementation at the Magelang Regency Health Office still faces several obstacles:

a. Digital Literacy Gap

System-wise, the BKN's e-performance application is actually very well-established and ready for use. However, when implemented at the Magelang Regency Health Office, the real challenges stem from the readiness of human resources. On the ground, a clear digital literacy gap remains evident between senior and younger civil servants. While younger employees adapt quickly, most senior civil servants frequently encounter obstacles and require significantly more time simply to understand and operate the system's technical features.

b. Prioritization Conflict: Public Service vs. Administrative Reporting

One of the critical findings in this study is the emergence of a "dual burden" phenomenon experienced by civil servants (ASN) within the Magelang Regency Health Office. As an agency directly involved in public health services, ASN in this unit prioritize medical interventions and public services, which are often urgent in nature. However, on the other hand, the implementation of the e-performance application requires disciplined daily data entry within a specific timeframe to ensure that performance indicators in the application remain green or meet quantitative standards. Conditions on the ground indicate that the high volume of patient care often leaves ASN with no spare time during working hours to operate digital devices. Consequently, a conflict of interest

arises between fulfilling digital administrative obligations and maintaining the quality of healthcare services provided to the public. This issue is further exacerbated by technical challenges, such as system access congestion or slowdowns during peak office hours.

These systemic conditions force the majority of civil servants to enter data at night or outside official working hours to secure a more stable connection. If left unaddressed, this phenomenon could lead to a decline in civil servants' work motivation and work-life balance. Digital transformation, which is intended to be a tool to enhance efficiency and transparency, risks becoming an administrative burden that distorts the primary focus of public service if not accompanied by adaptive policies. Therefore, synchronization is needed between standard operating procedures (SOPs) for health services and digital reporting systems so that civil servants do not feel pressured by administrative demands while performing critical functions on the front lines of public health care.

c. The Role of Digital Leadership and Work Culture

This transformation demonstrates that advanced technology still requires strong digital leadership to guide work culture. The phenomenon of employees tend to prioritize quantitative reporting compliance rather than substantive work quality improvement. In facing this, a digital leader at the Health Department must act not as a technical supervisor, but as a champion of integrity. Leaders must be able to educate their subordinates that digital literacy also encompasses reporting ethics. The leader's task is to ensure that all civil servants maintain the integrity of their data, so that this system change does not remain merely a formal routine but truly impacts the improvement of healthcare service quality for the public.

d. Infrastructure Challenges

Complaints about slow servers during peak hours are still common, which can reduce employees' motivation to input data on time.

Table 1. Obstacles and challenges in the implementation of the BKN e-performance application

Obstacles Category	Description of Field Findings and Challenges	Impact on Civil Servants
Digital Literacy	There is a digital skills gap, particularly among senior civil servants, in operating the technical features of the e-performance application.	Resistance to the new system and a reliance on intensive support from younger colleagues.
Workload & Time	The high volume of urgent public health services means that civil servants do not have time to enter data during regular working hours.	The occurrence of the "dual burden" phenomenon, in which performance reporting is seen as distracting from the focus on primary care.
Substance & Ethics	The tendency of civil servants to prioritize the quantity of reports in order to ensure that performance indicators turn green, without paying attention to the quality of the work itself.	Reducing the value of digital transformation to a mere administrative formality risks compromising the integrity of performance data.
Technology Infrastructure	Traffic congestion and server outages	A decline in employee motivation

Obstacles Category	Description of Field Findings and Challenges	Impact on Civil Servants
	during peak hours or at reporting deadlines.	and the need to enter data outside of office hours (at night) to ensure a stable connection.

Source: Compiled by the researcher, 2026.

Based on the table above, it is evident that the challenges faced by civil servants at the Magelang Regency Health Office are multidimensional. The most critical issues lie not only in technical infrastructures such as server capacity but also in civil servants' readiness regarding digital literacy and service time management. Civil servants serving as medical staff or health educators are often faced with situations where they must choose between digitally documenting their performance or attending to patients. This indicates that readiness for digital transformation in the public sector requires more flexible policies, where evaluation systems must not sacrifice the quality of public services in pursuit of daily administrative timeliness.

3.4 The Role of Leadership and Institutional Policies in Minimizing Resistance During the Digital Transition Process

a. Building Adaptive Public Sector Human Resources

This discussion underscores that the success of e-Performance cannot rely solely on the sophistication of the application. Drawing on Digital Era Human Resource Management theory, organizations must focus on upskilling and reskilling (Naningsih et al., 2023). At the Magelang Health Department, a more human-centered approach is needed, such as a mentoring program between younger employees (who are tech-savvy) and senior staff.

Improving civil servants' digital literacy will have a direct impact on the quality of public services. When internal processes (performance management) are already running effectively and efficiently digitally, civil servants' energy can be more focused on delivering superior public health services (Tombili et al., 2024).

This finding confirms that the effectiveness of digital transformation in the public sector is closely related to organizational culture and employee adaptability. A supportive organizational culture can encourage innovation, improve coordination, and strengthen service responsiveness in public institutions.

b. The Effectiveness of Applications in Enhancing Work Accountability

Empirically, the implementation of the BKN e-performance system at the Magelang Regency Health Office has driven the creation of more objective standardized work reports. Based on relevant research data, this application is capable of minimizing the assessment biases that frequently occur in manual systems (Ngara et al., 2026). Employees now feel that every drop of sweat and every field task they perform is clearly and systematically documented. This fosters a sense of organizational fairness, where the granting of allowances or rewards is truly based on evidence of performance (evidence-based performance), rather than merely on physical attendance alone.

c. Leadership for Change as the Key to Success

The success of this digital transformation is also heavily influenced by the role of leadership within the Health Department. As explained in Public Sector Human Resource

Management theory, leaders in the digital age must act as facilitators of change who are able to communicate the vision of digitalization persuasively (Samsudin, 2025). In practice, leadership support in the form of providing adequate computer resources and clear instructions for civil servants facing technical challenges has proven effective in reducing employee resistance to the new system. Without commitment from management, the e-Performance application will be viewed merely as an additional administrative burden, rather than a tool for enhancing productivity (Rahmadi & Rusmiati, 2025).

d. Analysis Based on the Government Agency Performance Report

The analysis in this study is further strengthened by an examination of the Government Agency Performance Report (LKjIP) of the Magelang Regency Health Office. Based on this document, a trend of increased achievement of performance targets is evident following the integrated implementation of the e-performance application. This indicates that bureaucratic digitalization positively contributes to the achievement of the organization's Key Performance Indicators (KPIs).

However, the report also notes that while the volume of reporting has increased, there are still fluctuations in work efficiency scores during the initial transition periods. The data in this document validates interview findings stating that during the early stages of implementation, civil servants required a longer adaptation period to understand the connection between daily activity inputs and organizational performance targets. Synchronization between data in the LKjIP and daily activities in e-performance demonstrates that digital transformation has fostered a more data-driven work culture and minimized fictitious reporting (Samsudin, 2025).

e. Reliability of Technology Infrastructure and Server Capacity

The primary technical aspect highlighted in the implementation of e-performance at the Magelang Regency Health Office is the reliability of supporting infrastructure, particularly the capacity of the central server. Based on the analysis, it was found that reporting effectiveness is often hindered by traffic jams or access congestion during critical hours, such as at the deadline for daily data entry.

Technical challenges such as server downtime or slow loading times are not merely hardware issues but systemic barriers that can diminish civil servants' motivation to consistently pursue digital transformation (Rachmatullah & Purwani, 2022).

This situation indicates that digital transformation in HR management requires a balance between personnel readiness and the readiness of hardware and networks. Server instability often forces civil servants to enter data outside of working hours (at night) to avoid system queues, which indirectly impacts work-life balance. Therefore, the digitization of bureaucracy in the health sector must be supported by enhanced bandwidth and the optimization of both local and central servers to ensure real-time system accessibility without significant technical barriers (Nur et al., 2025).

4. CONCLUSION

Conclusion

Based on an in-depth analysis of the implementation of the BKN e-performance application at the Magelang Regency Health Office, this study concludes several key points:

1. There is a digital literacy gap in terms of compliance with

The implementation of e-performance within the Magelang Regency Health Office is a concrete manifestation of the agency's compliance with the mandates of Presidential Regulation No. 95 of 2018 (SPBE) and Presidential Regulation No. 82 of 2023. This digital transformation has shifted human resource management from a subjective manual system to a more measurable digital system aligned with national standards. Although the system itself is excellent, human resource readiness remains the primary challenge. There is a digital gap between younger and older employees.

2. The Dilemma of Prioritizing Patient Care and Digital Administration

The implementation of e-performance creates challenges related to balancing public service responsibilities and digital administrative demands. There is a dual burden where civil servants must choose between focusing on urgent health services or fulfilling the rigid daily data entry requirements. This indicates that the effectiveness of digital transformation is not only measured by the sophistication of the system but also by its ability to avoid distorting the core functions of public service. The use of this application significantly enhances civil servants' work accountability. Through the daily reporting system, every employee's contribution is clearly documented, thereby fostering a sense of fairness in the awarding of rewards based on actual performance evidence, rather than mere administrative formalities.

3. The Role of Leadership and Work Culture Transformation

The implementation of e-performance has begun to shift work culture from a previously administrative and formalistic approach toward one that is more transparent and focused on daily results. Although initial resistance arose due to concerns that it would increase workloads, civil servants with strong digital literacy have begun to recognize its benefits in terms of the certainty of performance evaluations.

4. Technical Server Challenges

The success of this transformation is still frequently hindered by infrastructure constraints, particularly server capacity issues that often result in downtime or slow performance during peak hours. This highlights that the mental readiness and skills of human resources must be accompanied by reliable technology to avoid creating additional workloads outside of office hours.

This study confirms that successful digital transformation in public sector organizations depends not only on digital systems, but also on institutional adaptability, leadership support, and continuous human resource development.

Recommendations

To optimize the implementation of e-performance, the Magelang Regency Health Office is advised to conduct more specific and ongoing digital literacy training, rather than merely one-way information sessions. A mentoring program "peer coaching" between tech-savvy employees

and those who are not, can be an effective solution to bridge the digital skills gap in the workplace. With a digitally competent workforce, this transformation will no longer be viewed as a burden but rather as a necessity for better healthcare services.

To address the dual burden of serving patients and entering data, more flexible policies are needed. As a long-term measure, it is recommended to integrate data between technical healthcare service applications and the BKN e-performance system. With this integration, service activity data already entered into the medical system can be automatically synchronized with the performance system, thereby reducing the double administrative workload experienced by civil servants.

Leadership is not just about mandating the use of applications, but about building a new work culture. Leaders at the Puskesmas level up to the Department must be the first to demonstrate discipline and transparency in using e-performance. Leaders also need to provide recognition (such as “performance-based recognition system”) based on the quality of achievements in e-performance, not merely the speed of data entry.

To address the issue of servers frequently crashing during peak hours, both technical and managerial solutions are needed. Technically, the Health Department must coordinate with the Regional Civil Service Agency (BKD) or the National Civil Service Agency (BKN) to increase server capacity. Managerially, a “A staggered reporting schedule may also be implemented to reduce server overload during peak reporting periods” can be implemented by work area (e.g., health centers in the Northern region input data in the morning, Southern region in the afternoon) during peak reporting periods.

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