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Digital Transformation in Civil Servant Recruitment and Development: A Study of Innovative Governance Practices in Bangkalan Regency

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Abstract:

Digital transformation has become an important component of bureaucratic reform, including the management of civil servant (*Aparatur Sipil Negara*/ASN) recruitment and development. This study examines the implementation of digital transformation through innovative governance practices in Bangkalan Regency and identifies the challenges and institutional factors affecting its sustainability. Using a descriptive qualitative approach, the study analyzes secondary data from government documents, policy reports, academic literature, media sources, and digital government information systems. The analysis focuses on digital ASN recruitment, performance management through e-Kinerja and the ASN Dashboard, and digital competency development through e-learning and online training. The findings indicate that digital transformation has improved transparency, accountability, efficiency, and data-based performance management. However, its sustainability is constrained by unequal digital infrastructure, limited digital literacy, dependence on external technology providers, and insufficient internal technological capacity. Institutional commitment, leadership continuity, collaboration, and continuous learning support adaptive and incremental innovation. The implementation is consistent with Law Number 5 of 2014 concerning State Civil Apparatus and Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (*Sistem Pemerintahan Berbasis Elektronik*/SPBE). The study concludes that sustainable digital governance requires integrated technological, institutional, and human-resource development.

Keywords:

ASN; Digital Transformation; Innovative Governance; Public Administration; Sustainable Governance.

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1. Introduction

Digital transformation has become an important pillar of bureaucratic reform and public sector modernization. The development of Information and Communication Technology (ICT) has changed how governments manage administrative processes, deliver public services, and monitor organizational performance. Digital transformation should therefore not be understood merely as the adoption of technological tools, but as a broader organizational and governance transformation involving changes in work processes, institutional systems, and organizational culture toward more transparent, efficient, accountable, adaptive, and data-driven public administration (Mergel et al., 2019; Ariesmansyah et al., 2024). In this context, digital governance provides opportunities for public institutions to improve administrative effectiveness while responding to changing societal and technological demands.

Civil servant (*Aparatur Sipil Negara*/ASN) management represents an important area of bureaucratic digital transformation. Recruitment must be conducted according to principles of merit, transparency, and accountability as emphasized in Law Number 5 of 2014 concerning State Civil Apparatus. The implementation of the Computer Assisted Test (CAT) represents one of the major digital innovations in Indonesian civil servant recruitment because it supports more objective selection, reduces human intervention, and minimizes opportunities for manipulation (Lee & Cha, 2023). Digitalization also facilitates the integration of personnel data and performance monitoring through systems such as SAPK, e-Kinerja, and MySAPK. Nevertheless, the effectiveness of these systems remains dependent on technological infrastructure, digital literacy, and institutional readiness at the regional level.

The digital transformation of ASN also extends beyond recruitment to employee development and competency improvement. Digital learning platforms, learning management systems, e-learning, webinars, and digital talent development programs provide greater flexibility and accessibility for continuous professional development (Shurygin et al., 2021; Yuniarti et al., 2024). Such transformation is consistent with the broader lifelong learning approach, which emphasizes continuous competency development through flexible digital learning environments (Lindqvist et al., 2024). However, unequal technological access, limited digital skills, and institutional barriers can constrain the sustainability of digital learning initiatives.

The implementation of digital governance in Indonesia is institutionally supported by Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (*Sistem Pemerintahan Berbasis Elektronik*/SPBE), which promotes an open, participatory, innovative, and efficient government system (KemenPAN-RB, 2020). From the perspective of innovative governance, digital transformation involves not only technological innovation but also organizational learning, adaptive processes, collaboration, and institutional capacity to respond to changing conditions (Hartley, 2005; Osborne & Brown, 2011; Verhoest et al., 2024). Adaptive governance further highlights the importance of decision-making and accountability in the digital government context (Wang et al., 2018).

Although previous studies have examined digital transformation, digital recruitment, digital learning, and innovative governance, less attention has been given to how these dimensions are simultaneously implemented within regional civil servant management, particularly where infrastructure, human resource capacity, and technological independence remain challenging. This study addresses this gap by examining the experience of Bangkalan Regency, where digitalization has been applied through online ASN recruitment, e-Kinerja and ASN Dashboard-based performance monitoring, and digital training programs. The study therefore aims to analyze how digital transformation is implemented through innovative governance

practices and to identify the challenges and institutional factors affecting its sustainability.

Accordingly, this study addresses the following research questions:

RQ1: How is digital transformation implemented in civil servant recruitment and development through innovative governance practices in Bangkalan Regency?

RQ2: What challenges and institutional factors influence the implementation and sustainability of digital transformation in civil servant governance in Bangkalan Regency?

2. Methods

This study employs a descriptive qualitative approach to examine the implementation of digital transformation in civil servant (ASN) recruitment and development through innovative governance practices in Bangkalan Regency. A qualitative descriptive approach is appropriate because the study focuses on describing and interpreting institutional practices, policy implementation, and organizational challenges within their actual governance context (Sugiyono, 2018). The analysis is directed toward two main research questions concerning the implementation of digital transformation and the challenges and institutional factors affecting its sustainability.

The research focuses on the BKPSDM (*Badan Kepegawaian dan Pengembangan Sumber Daya Manusia*) of Bangkalan Regency, the institution responsible for regional civil servant management. Three interconnected dimensions are examined: (1) digitalization of ASN recruitment, including online registration, document verification, and integration of the Computer Assisted Test (CAT); (2) digital performance management through e-Kinerja and the ASN Dashboard; and (3) digital competency development through e-learning, webinars, and other technology-based training programs. These dimensions correspond directly with the study's first research question concerning the implementation of digital transformation.

The study relies on secondary data obtained from official institutional documents, including BKPSDM Bangkalan performance reports for 2020–2024, policy and implementation documents from the National Civil Service Agency (*Badan Kepegawaian Negara*/BKN), and bureaucratic reform documents issued by the Ministry of Administrative and Bureaucratic Reform. Media reports and publicly available information from the Bangkalan Regency ASN digital information systems are also examined to provide contextual evidence concerning implementation outcomes. The regulatory framework includes Law Number 5 of 2014 concerning State Civil Apparatus, particularly regarding merit-based, transparent, and accountable ASN management, and Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE), which provides the institutional basis for digital government transformation. Both regulations are directly relevant to the digital governance practices examined in this study.

Data were collected through document analysis, review of relevant academic literature, and indirect observation of publicly available digital government information. The collected data were analyzed using the interactive qualitative analysis model of Miles, Huberman, and Saldaña, consisting of data reduction, data display, and conclusion drawing/verification. Data were organized according to the two research questions, enabling the analysis to connect empirical evidence with innovative governance concepts and to identify implementation challenges, institutional capacity, leadership, digital literacy, infrastructure, and technological sustainability.

3. Results and Discussion

3.1. Digital Transformation in Civil Servant Recruitment and Development

The findings demonstrate that digital transformation in civil servant (ASN) management in Bangkalan Regency has been implemented through three interconnected areas: digital recruitment, digital performance management, and technology-based competency development. These practices indicate that digitalization has not been limited to the introduction of technological applications, but has gradually changed administrative processes toward more transparent, efficient, accountable, and data-driven governance. This finding is consistent with the understanding of digital transformation as an organizational and institutional transformation that involves changes in processes, culture, and governance practices rather than merely technological adoption (Mergel et al., 2019; Ariesmansyah et al., 2024).

The first major implementation concerns the digitalization of ASN recruitment. Since 2020, the registration and document verification process in Bangkalan Regency has been conducted through an online mechanism, while the Computer Assisted Test (CAT) has provided a technology-based selection mechanism. The implementation of CAT is important because it supports a more objective and transparent recruitment process by reducing direct human intervention in the assessment process. This practice is consistent with the merit-based principles of ASN management established in Law Number 5 of 2014 concerning State Civil Apparatus, particularly the emphasis on professionalism, transparency, and accountability in civil servant management. Previous literature also indicates that digital recruitment mechanisms can minimize human bias and manipulation while increasing objectivity in the selection process (Lee & Cha, 2023).

The implementation in Bangkalan shows measurable administrative outcomes. According to the data presented in the study, public complaints associated with recruitment decreased from 45 cases in 2018 to 6 cases in 2022, representing an 86% reduction (Radar Madura, 2023). The availability of CAT results through the official digital platform also strengthens transparency because recruitment participants can obtain information concerning their performance without depending entirely on manual administrative processes. Thus, digital recruitment functions not only as a technological instrument but also as a mechanism for strengthening public accountability in ASN selection.

The second area is digital performance management through e-Kinerja and the ASN Dashboard. Following the implementation of digital recruitment, BKPSDM Bangkalan expanded digitalization to employee performance monitoring. The e-Kinerja system enables online performance reporting and evaluation, while the ASN Dashboard supports real-time monitoring by organizational leaders. According to the internal BKPSDM data presented in the study, ASN compliance in performance reporting increased from 68% in 2020 to 92% in 2023. This development indicates that digital systems have supported more systematic performance monitoring and have strengthened the availability of data for administrative decision-making.

The implementation of digital performance management also reflects the broader principles of innovative governance. Hartley (2005) explains that innovation in governance involves the development of new approaches that improve public-sector performance, while Osborne and Brown (2011) emphasize that public-sector innovation emerges as an adaptive response to internal and external pressures. In the Bangkalan context, e-Kinerja and the ASN Dashboard demonstrate this adaptive dimension because digital technology is integrated into existing personnel management processes to improve monitoring, evaluation, and accountability rather than replacing governance institutions entirely.

The third area involves digital competency development for civil servants. BKPSDM Bangkalan, in collaboration with LAN RI, has implemented digital

training through e-learning, webinars, and the SPAN platform. Participation in these programs increased by approximately 70% between 2021 and 2023. This finding indicates that digital transformation has extended beyond administrative procedures to the development of human resources as the users and implementers of digital governance. The importance of this dimension is supported by Yuniarti et al. (2024), who emphasize the role of digital transformation in developing adaptive and innovative civil service competencies. Similarly, digital learning platforms provide flexible opportunities for continuous professional development (Shurygin et al., 2021; Lindqvist et al., 2024).

Table 1. Activities for Implementing Digital Transformation of Civil Servants in Bangkalan Regency

No	Year	Activity	Form Of Implementation	Implementing Agency	Main Results
1	2020	Digitalization of ASN selection	Online registration and selection (CAT)	BKPSDM & BKN	Public complaints decreased by 86%
2	2021	Implementation of e-Performance	Online performance reporting and evaluation	BKPSDM	Objective and efficient performance assessment
3	2022	ASN Dashboard	*Real-time* performance monitoring by OPD	BKPSDM & Diskominfo	Increased performance transparency
4	2022–2023	ASN digital training	E-learning, webinars, and SPAN	BKPSDM & LAN RI	Training participation up 70%
5	2023–2024	Evaluation of IT HR systems and training	Internal audit and coaching	Bangkalan Human Resources Development Agency	Strengthening the capacity of digital system managers

The progression presented in Table 1 demonstrates that digital transformation in Bangkalan has developed incrementally. The process began with digital recruitment in 2020, continued with e-Kinerja in 2021 and the ASN Dashboard in 2022, and subsequently expanded to digital training and internal information-system strengthening. This pattern supports the concept of incremental innovation, in which public organizations adapt technological and institutional practices according to their existing capacity (Osborne & Brown, 2011). Rather than implementing a disruptive transformation, Bangkalan Regency has gradually integrated digital technologies into different stages of ASN management.

The overall findings also demonstrate the relevance of Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE) as an institutional foundation for digital government transformation. The regulation promotes an open, participatory, innovative, and efficient government system, while the Bangkalan case illustrates how these principles can be translated into personnel management practices at the regional level (KemenPAN-RB, 2020). Digital recruitment strengthens transparency, e-Kinerja and the ASN Dashboard improve performance accountability, while digital training expands access to competency development.

From an innovative governance perspective, the implementation can therefore be understood as a combination of technological adaptation, organizational learning, and institutional innovation. The use of digital systems does not operate independently from governance structures; rather, it is integrated with leadership, institutional procedures, and human resource development. This corresponds with the view that adaptive governance requires governments to adjust decision-making and accountability mechanisms in response to changing technological and institutional conditions (Wang et al., 2018). Collaboration between BKPSDM, BKN, LAN RI, and other relevant institutions further demonstrates the importance of institutional coordination in supporting digital transformation (Verhoest et al., 2024).

Overall, the findings answer RQ1 by showing that digital transformation in ASN recruitment and development in Bangkalan Regency is implemented through three interconnected mechanisms: digital recruitment through online registration and CAT, data-based performance management through e-Kinerja and the ASN Dashboard, and digital competency development through e-learning and online training. These practices demonstrate a gradual shift toward more transparent, efficient, accountable, and data-driven civil servant governance. At the same time, the implementation confirms that digital transformation is not solely a technological process but an innovative governance process requiring institutional adaptation and continuous organizational learning.

3.2. Innovative Governance, Implementation Challenges, and Sustainability

The implementation of digital transformation in ASN management in Bangkalan Regency demonstrates that technological adoption is accompanied by institutional and organizational challenges. While digital recruitment, e-Kinerja, the ASN Dashboard, and digital training have improved administrative processes, their sustainability depends on the capacity of government institutions to provide adequate infrastructure, strengthen digital literacy, maintain technological independence, and sustain organizational commitment. These findings indicate that digital transformation should be understood as an ongoing governance process rather than a one-time technological intervention. Mergel et al. (2019) emphasize that digital transformation involves changes in organizational structures, processes, and practices, while Ariesmansyah et al. (2024) similarly highlight the importance of institutional adaptation in the development of digital governance.

One of the most significant challenges identified in Bangkalan Regency is unequal digital infrastructure. The implementation of digital government applications remains constrained by unstable internet connectivity in several areas, particularly regions with limited network coverage. Such conditions can affect access to recruitment portals, e-Kinerja, and online training programs. Consequently, the effectiveness of digital governance does not depend solely on the availability of applications but also on whether the technological infrastructure enables civil servants to access and use those applications consistently. This finding reflects the broader challenge identified in the literature that digital transformation at the local government level is strongly influenced by infrastructure availability and institutional readiness.

A second challenge concerns unequal levels of digital literacy among civil servants. The findings indicate that some employees, particularly older civil servants, experience difficulties in using digital platforms such as e-Kinerja, SIASN, and SPAN and may require assistance from colleagues with stronger technological skills. Although BKPSDM has provided basic digital training, the adoption of digital systems among employees with limited technological experience remains gradual. This condition demonstrates that technological transformation cannot be separated from human resource development. Shurygin et al. (2021) emphasize the importance of digital learning platforms in supporting competency development, while Yuniarti

et al. (2024) argue that digital transformation in civil service management requires adaptive and innovative competencies. Therefore, continuous training is necessary not only to introduce new applications but also to ensure that civil servants can use digital systems independently and effectively.

Another important issue is dependence on external technology vendors. Several digital personnel-management systems remain dependent on external developers, while internal technical capacity and knowledge-transfer mechanisms are still limited. This situation creates a sustainability concern because the continuity of digital transformation may become dependent on external technological support. From an innovative governance perspective, technological innovation should be accompanied by organizational learning and the development of internal institutional capacity. Hartley (2005) argues that innovation in public governance involves organizational learning and the development of new approaches to improve public-sector performance. Therefore, strengthening internal information technology capabilities within BKPSDM is important to ensure that digital systems can be maintained, evaluated, and developed according to institutional needs.

The findings also demonstrate the importance of institutional commitment and leadership continuity. Despite resource limitations, Bangkalan Regency has gradually expanded digitalization from recruitment to performance monitoring and competency development. This progression indicates that digital transformation has been implemented through an incremental innovation approach. Osborne and Brown (2011) explain that public-sector innovation can emerge as an adaptive response to internal and external pressures rather than necessarily taking the form of disruptive transformation. In the Bangkalan case, gradual adaptation enables the local government to integrate digital technologies into existing bureaucratic processes while responding to available resources and institutional capacity.

The role of collaboration is also important in sustaining digital transformation. The implementation of ASN digital development involves cooperation between BKPSDM and institutions such as BKN and LAN RI. Such collaboration enables regional government institutions to access technological, administrative, and competency-development resources that may not be available internally. This finding is consistent with Verhoest et al. (2024), who emphasize the importance of cross-sector collaboration in fostering technological innovation. Wang et al. (2018) further highlight that adaptive governance requires appropriate decision-making and accountability mechanisms to respond to changing conditions in the digital government environment.

The challenges identified above also need to be understood within the regulatory framework of Indonesian digital governance. Law Number 5 of 2014 concerning State Civil Apparatus establishes the broader basis for professional and merit-based ASN management, while Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE) provides an institutional framework for developing electronic government. The implementation in Bangkalan demonstrates an effort to translate these principles into regional administrative practices through digital recruitment, performance monitoring, and competency development. However, regulatory support alone is insufficient if it is not accompanied by infrastructure, human-resource capacity, institutional learning, and technological independence.

From an academic perspective, the Bangkalan case therefore illustrates incremental and adaptive innovative governance. Digital transformation has progressed through successive improvements rather than a single comprehensive technological reform. This pattern supports the argument that local governments with relatively limited resources can undertake digital transformation when technological adoption is accompanied by institutional commitment, leadership, collaboration, and continuous learning. The findings also reinforce the view that

digital governance requires an alignment between technology and organizational capacity rather than focusing exclusively on the technological dimension.

Overall, these findings answer RQ2 by demonstrating that the main challenges affecting the implementation and sustainability of digital transformation in Bangkalan Regency are unequal digital infrastructure, limited digital literacy, dependence on external technology providers, and the need for stronger internal technological capacity. At the same time, institutional commitment, leadership continuity, inter-institutional collaboration, and continuous competency development function as important supporting factors. Therefore, the sustainability of digital transformation requires a long-term strategy that combines infrastructure improvement, continuous digital training, development of internal IT capabilities, and systematic monitoring and evaluation. Such an approach would allow digital innovation to develop from individual applications into a more sustainable model of innovative governance.

4. Conclusion

This study concludes that digital transformation in civil servant (Aparatur Sipil Negara/ASN) recruitment and development in Bangkalan Regency has been implemented progressively through three interconnected mechanisms: digital recruitment, digital performance management, and digital competency development. Online recruitment and the Computer Assisted Test (CAT) have strengthened transparency and objectivity in the selection process, while e-Kinerja and the ASN Dashboard have supported more systematic, data-based, and accountable performance monitoring. Digital training through e-learning, webinars, and the SPAN platform has also expanded opportunities for continuous competency development. These practices demonstrate that digital transformation can support the principles of innovative governance and the objectives of Law Number 5 of 2014 concerning State Civil Apparatus and Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE).

However, the sustainability of these practices remains influenced by several challenges, particularly unequal digital infrastructure, differences in civil servants' digital literacy, dependence on external technology providers, and limited internal technological capacity. The findings indicate that institutional commitment, leadership continuity, inter-institutional collaboration, and continuous learning are essential factors in addressing these challenges. The Bangkalan experience demonstrates that digital transformation does not necessarily require disruptive technological change but can develop through gradual and adaptive innovation according to local institutional capacity. Therefore, sustainable digital transformation requires continued improvement of digital infrastructure, systematic digital competency development, stronger internal IT capacity, and regular monitoring and evaluation. These measures are important to ensure that digitalization develops beyond individual applications into an integrated and sustainable model of innovative governance.

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The data that support the findings of this study are available from the corresponding author upon reasonable request.