

Building Digital Governance Capacity: Civil Service Development Strategies in the Era of Industry 4.0

 <https://doi.org/10.30598/populis.20.2.221-243>

I Putu Gde Bayu Indra Wahyudi^{1*}, Juwita Pratiwi Lukman²

¹Fakultas Ilmu Sosial dan Ilmu Politik Universitas Udayana, Bali 80361, Indonesia

²Fakultas Ilmu Sosial dan Ilmu Politik Universitas Udayana, Bali 80361, Indonesia

*bayuindra004@gmail.com

Abstract

Digital transformation driven by the Industry 4.0 paradigm requires governments not only to adopt information technologies but also to strengthen bureaucratic capacity to sustain digital governance practices. This study examines strategies for developing the capacity of civil servants in supporting digital governance at the local government level. The research was conducted at the Regional Civil Service and Human Resource Development Agency of Badung Regency using a qualitative approach with a descriptive-analytical design. Data were collected through field observations, in-depth interviews with human resource managers and civil servants, and analysis of institutional documents related to competency development programs. The data were analyzed using thematic analysis to identify key challenges and institutional strategies in bureaucratic capacity development. The findings reveal several structural constraints affecting digital governance capacity, including gaps in digital competencies among civil servants, limited motivation for professional development, and restricted budget allocations for continuous training programs. To address these challenges, the institution has implemented several capacity-building initiatives, such as digital competency-based training programs, the strengthening of adaptive bureaucratic work culture, and digital transformation awareness programs across government agencies. This study contributes to the governance literature by integrating bureaucratic capacity development with the digital governance framework, highlighting the role of civil servants as institutional actors in local digital transformation. The findings suggest that successful digital governance depends not only on technological infrastructure but also on the institutional capacity and professional development of the public bureaucracy.

Keywords: Bureaucratic Capacity, Civil Service Development, Digital Governance, Industry 4.0, Local Government, Public Administration

Article info

Received manuscript: 12/12/2025

Final revision: 10/03/2026

Approved: 15/03/2026

Copyright © by the Authors

This work is licensed under Creative Commons Attribution
License 4.0 CC-BY International license



INTRODUCTION

The digital transformation driven by the advancement of the Fourth Industrial Revolution has fundamentally altered how states perform administrative functions, manage policies, and deliver public services to citizens (Fadrial et al., 2024; Nugroho et al., 2024). Governments across the world are no longer expected merely to manage administrative processes through conventional mechanisms; they are also required to adapt to the rapid evolution of digital technologies (Maulana et al., 2022; Wadipalapa et al., 2024). Digitalization within the public sector has consequently generated a new paradigm of governance known as digital governance, defined as a model of governmental management that utilizes information and communication technologies to enhance efficiency, transparency, public

participation, and the quality of public service delivery (Huraerah et al., 2022; Virnandes et al., 2024). In this context, digital technology is not merely viewed as an administrative tool but rather as a strategic infrastructure that reshapes how the state interacts with its citizens.

These transformations are not limited to developed countries but have also become a significant agenda for developing nations, including Indonesia. In recent years, the Indonesian government has actively promoted digital transformation within the bureaucracy through various policies, such as the development of electronic-based government systems, the integration of digital public services, and the modernization of administrative governance. These initiatives are expected to foster a more adaptive, responsive, and efficient bureaucracy capable of addressing increasingly complex societal demands (Hutahaean & Pasaribu, 2022; Umasugi, 2025). Nevertheless, the implementation of governmental digitalization at the regional level continues to encounter numerous challenges that extend beyond technological availability to include the readiness of bureaucratic human resources.

In practice, many local government organizations still face significant capacity gaps in managing digital transformation. As the primary actors within the bureaucracy, civil servants (Aparatur Sipil Negara—ASN) play a central role in translating digitalization policies into everyday administrative practices. However, various studies indicate that the levels of digital literacy, technological adaptability, and motivation for competency development among government officials remain uneven (Aneta et al., 2023; Rahmat et al., 2024). This condition often results in digital transformation processes that are implemented in a partial and administrative manner, without being accompanied by substantial changes in organizational culture and institutional capacity.

This phenomenon is also evident within local government bureaucracies in Indonesia. The majority of ASN personnel are still dominated by groups whose educational backgrounds and skill sets are not fully aligned with the demands of digitalized public administration. At the same time, competency development programs for civil servants frequently face limitations related to budget constraints, low participation rates, and the lack of integration between training curricula and the needs of bureaucratic digital transformation. This situation indicates that the success of digital governance development is determined not only by the provision of digital technologies but also by the capacity of state institutions to systematically and sustainably develop the capabilities of bureaucratic personnel (Harsoyo & Amanatin, 2025; Prabowo et al., 2026; Simandjorang et al., 2022). Consequently, the development of ASN capacity has become a critical agenda within bureaucratic reform in the digital era.

Within the field of public administration and contemporary governance studies, bureaucracy is regarded as a strategic institution that manages the relationship between the state and society. The classical perspective on bureaucracy proposed by Max Weber emphasizes the importance of administrative rationality, professionalism, and the competence of officials in ensuring the effectiveness of state organizations (Ariansyah et al., 2023; Dellyana et al., 2023). In contemporary developments, this concept has expanded through various approaches that highlight the importance of organizational innovation,

institutional adaptation, and human resource capacity development within public organizations (Djatkiko et al., 2025; Hafel, 2023). Digital transformation in government can therefore be understood as part of a broader process of institutional change that requires bureaucracies to develop new capabilities in managing technology, information, and digital interaction with citizens.

Previous studies have examined the development of digital governance from diverse perspectives. Early studies largely emphasized the development of e-government as a mechanism for improving administrative efficiency and expanding citizens' access to government services (Budiarto et al., 2024; Mislawaty et al., 2022). Other research highlights the role of digital platforms and technological innovation in creating more open and participatory models of public service delivery (Mutiarin et al., 2024; Widowati et al., 2023). Within this framework, digitalization is viewed as a crucial instrument for strengthening governmental transparency and public accountability.

As digital technologies continue to evolve, the focus of digital governance studies has also broadened. Research by Isabella et al. (2024), Iswanto and Putra (2023), and Lubis et al. (2024) demonstrates that digital transformation in the public sector is not limited to the digitalization of services but also involves changes in organizational structures, work processes, and bureaucratic culture. In other words, governmental digitalization represents an institutional transformation process that requires changes in how public organizations manage knowledge, resources, and interactions with society. This perspective positions bureaucracy not merely as a policy implementer but as an institutional actor that actively shapes the practices of digital governance.

On the other hand, several studies have also emphasized the importance of bureaucratic capacity in supporting the success of governmental digital transformation. Asmara et al. (2024) and Setyawan et al. (2024) demonstrate that the implementation of digital technologies in public organizations often encounters obstacles due to limitations in organizational and human resource capacities. Similarly, Azzahra (2023) and Wagola et al. (2023) argue that digital reform in the public sector requires fundamental changes in organizational structures and the competencies of government officials. Without strengthening bureaucratic capacity, the adoption of digital technologies risks producing administrative systems that are technologically complex but institutionally ineffective.

The discussion of bureaucratic capacity development is further enriched by the institutional theory perspective developed by Febriyanti et al. (2023) and Saputra et al. (2023), which explains how public organizations tend to adapt to environmental pressures through processes of structural and normative adjustment. In the context of digital governance, such adaptation is reflected in various efforts by government organizations to enhance the digital competencies of civil servants through training programs, workplace cultural reforms, and the integration of technology within public administrative systems. This approach emphasizes that digital transformation is not merely a technological change but also a social process involving shifts in organizational values, norms, and practices.

Nevertheless, much of the existing literature on digital governance continues to position technology as the primary focus of analysis. Numerous studies emphasize aspects such as digital infrastructure, governmental information systems, or technology-based public service innovations (Andayani et al., 2024; Faedlulloh & Yulianto, 2023; Karinda et al., 2024). In contrast, scholarly attention to the social and institutional capacity of bureaucracy as the main actor in the digitalization process remains relatively limited, particularly in the context of local governments in developing countries. In fact, bureaucratic dynamics at the local level possess distinctive characteristics compared with national-level governance, both in terms of resources, organizational structures, and institutional capacity.

Within this context, it is essential to view governmental digital transformation not merely as a matter of technology or administrative policy but as a broader institutional change process that involves the development of state administrative capacity. Such an approach opens wider analytical space to examine how strategies for developing bureaucratic human resources can contribute to building the foundations of digital governance at the regional government level. By positioning civil servants as social actors within the process of digital transformation, this study seeks to enrich the understanding of the relationship between bureaucratic capacity development, institutional adaptation, and the construction of digital governance.

Based on this conceptual framework, this study aims to analyze strategies for developing the capacity of civil servants in supporting the development of digital governance at the regional government level in the era of the Fourth Industrial Revolution. Specifically, this research examines the dynamics of digital competency development among government officials, the institutional challenges encountered during the process, and the strategies implemented by regional personnel management institutions to strengthen bureaucratic capacity. Through this approach, the study is expected to contribute conceptually to the advancement of governance and public administration scholarship by emphasizing the central importance of bureaucratic capacity as a foundational element in the process of governmental digital transformation.

RESEARCH METHOD

This study employs a qualitative approach with a descriptive–analytical design to gain an in-depth understanding of the dynamics of civil servant (Aparatur Sipil Negara—ASN) capacity development in supporting the implementation of digital governance at the local government level. A qualitative approach was selected because the study seeks not only to identify administrative facts but also to understand the social processes, perceptions of bureaucratic actors, and institutional dynamics that shape strategies for developing bureaucratic capacity. This approach enables researchers to capture meanings, experiences, and practices occurring within governmental organizational environments that cannot always be adequately explained through quantitative data alone. Within the tradition of social research, qualitative methods are widely regarded as effective for examining complex

organizational phenomena and policy processes, as they allow researchers to explore social contexts, organizational culture, and interactions among actors within public institutions (Ahad & Nugraha Barsei, 2023; Prasodjo, 2025).

The research was conducted at the Regional Civil Service and Human Resource Development Agency (Badan Kepegawaian dan Pengembangan Sumber Daya Manusia—BKPSDM) of Badung Regency. The selection of this research site was based on substantive considerations, as the institution holds a strategic mandate in managing public sector human resources at the regional government level, including the formulation of competency development programs for civil servants. BKPSDM also plays a significant role in implementing various education and training initiatives aimed at strengthening bureaucratic capacity in response to governmental digital transformation. Consequently, this institutional setting was considered relevant for examining how strategies for developing civil servant capacity are formulated and implemented within the broader context of building digital governance at the local level.

Informants in this study were selected using purposive sampling, a technique that involves intentionally choosing participants based on the consideration that they possess relevant knowledge, experience, and direct involvement in the process of ASN capacity development. Through this technique, the researcher was able to obtain deeper insights into the institutional dynamics that constitute the focus of the study (Ramadoan et al., 2025). In total, the research involved ten informants, consisting of structural officials within BKPSDM responsible for formulating policies related to ASN competency development, officials from regional government agencies involved in implementing training programs, and several civil servants who had previously participated in digital competency development initiatives. Selecting informants from different organizational positions was intended to capture diverse perspectives on how bureaucratic capacity development strategies are designed, implemented, and experienced by the civil servants who serve as the primary beneficiaries of these programs.

Data collection was conducted through three principal techniques: observation, in-depth interviews, and document analysis. Observation was carried out to directly understand the organizational environment, bureaucratic work practices, and institutional contexts in which ASN capacity development programs are implemented. Through observation, the researcher was able to capture organizational dynamics that may not always emerge in interviews or official documents. In-depth interviews were conducted using a semi-structured format to allow the researcher to explore the experiences, perspectives, and interpretations of informants regarding digital transformation within the bureaucracy and strategies for developing ASN competencies. This interview approach provides flexibility for researchers to explore emerging issues during the research process while maintaining alignment with the study's objectives (Turner et al., 2022). In addition, document analysis was undertaken to examine various institutional documents, including competency development plans for civil servants, reports on education and training activities, institutional profiles, and regulatory

frameworks related to public sector human resource development. These documents served as an important source of data for understanding the policy framework underlying strategies for bureaucratic capacity development.

To ensure the validity and reliability of the findings, this study employed both source and methodological triangulation techniques. Source triangulation was conducted by comparing information obtained from informants who held different organizational roles and experiences. Meanwhile, methodological triangulation was achieved by integrating findings derived from observation, interviews, and document analysis so that the study's conclusions would not rely solely on a single type of data. This process enabled the researcher to verify the consistency of information and develop a more comprehensive understanding of the phenomenon under investigation (Fitriyanti, 2024; Hidayat, 2023). The collected data were subsequently analyzed using thematic analysis, which involved identifying major patterns emerging from the processes of interviews, observation, and documentation. Through this analytical approach, the study sought to develop an in-depth understanding of the challenges and strategies involved in strengthening ASN capacity to support the development of digital governance at the local government level.

RESULTS AND DISCUSSION

Digital Governance and Bureaucratic Capacity in Local Government Institutions

Digital transformation in the public sector has become one of the central agendas of bureaucratic reform in many countries, including at the local government level. The rapid advancement of information technology has compelled governments not only to modernize administrative systems but also to reorganize how public organizations operate, interact, and deliver services to society. Within this context, the concept of digital governance has emerged as a framework that emphasizes the integrated use of digital technologies to enhance the effectiveness of governmental management, administrative transparency, and the quality of public service delivery (Khairani et al., 2023; Nasution et al., 2024). Such transformation requires bureaucratic institutions to develop organizational capacities that are not solely grounded in conventional administrative procedures but also in institutional capabilities to manage digital systems in an adaptive and sustainable manner.

At the local government level, the process of digital transformation often unfolds gradually and is influenced by specific institutional conditions. In Badung Regency, efforts toward the digitalization of public administration have begun to emerge through various initiatives aimed at developing electronic-based government systems that are integrated into everyday bureaucratic activities. These systems are utilized not only to accelerate administrative processes but also to improve coordination among regional government agencies and strengthen the management of civil servant data. In this context, the Regional Civil Service and Human Resource Development Agency (Badan Kepegawaian dan Pengembangan Sumber Daya Manusia—BKPSDM) plays a crucial role, as the institution is responsible for managing public sector human resources, including the development of digital

systems related to personnel services.

Field observations indicate that the digitalization of personnel administration within BKPSDM Badung Regency has begun to be integrated into various bureaucratic work processes. In the administrative service area, for example, the use of a personnel information system allows employees to access civil service data digitally, including information related to career history, rank, and records of education and training programs that they have attended. Several staff members were observed working through digital system dashboards that display real-time personnel data. This system not only facilitates data management but also accelerates administrative procedures that were previously conducted manually through physical documentation.

Observations within the office environment also reveal that the use of digital technology has transformed patterns of workplace interaction among employees. In several workspaces, administrative communication that was previously conducted primarily through formal correspondence is now more frequently facilitated through internal digital platforms. This is reflected in the use of document-sharing systems and internal communication applications that enable easier coordination among departments. Nevertheless, the process of adapting to digital technologies has not occurred uniformly across all organizational units. Some employees appear to adapt more quickly to the digital systems, while others still require guidance in utilizing technology-based administrative applications.

Information obtained through interviews with several informants further indicates that the process of bureaucratic digitalization at the local government level is not merely related to the provision of technological infrastructure but also to the readiness of human resources responsible for operating the system. One official at BKPSDM, referred to in this study as Informant A, explained that the implementation of digital systems in personnel management initially encountered several challenges, particularly concerning the ability of civil servants to understand and operate the newly introduced systems. According to the informant, during the early stages of implementation many employees were still accustomed to working through manual administrative procedures, and therefore required time to adapt to technology-based working mechanisms.

A similar explanation was also provided by another participant, referred to in this study as Informant B. During the interview, the informant described digital transformation within local government bureaucracy as fundamentally an organizational learning process that requires time. According to the informant, digitalization not only alters administrative tools but also reshapes the way civil servants think about managing public administration. The informant further explained that several internal training programs have gradually been directed toward improving employees' understanding of the use of technology within governmental administrative systems. This observation suggests that strengthening the capacity of public officials constitutes an important component of bureaucratic digital transformation strategies.

These findings indicate that the development of digital governance at the local government level cannot be separated from the dynamics of bureaucratic capacity development. Digital transformation is not merely a technical matter concerning the use of software or information systems; rather, it also involves the organizational ability to manage change. Within contemporary public administration perspectives, digital transformation is often understood as a process of institutional change involving adjustments in organizational structures, work patterns, and the competencies of civil servants (Khairani et al., 2023; Nasution et al., 2024). In other words, the success of governmental digitalization largely depends on the capacity of bureaucratic institutions to integrate technological systems into everyday administrative practices.

In this regard, BKPSDM Badung Regency plays a strategic role as an institution that bridges digital transformation policies with the development of bureaucratic capacity. The agency is responsible not only for managing personnel data but also for designing competency development programs that support bureaucratic adaptation to technological change. A structural official interviewed in this study, referred to as Informant C, explained that one of the primary challenges in the digitalization of bureaucracy is ensuring that all civil servants possess basic competencies in utilizing digital technologies. According to the informant, without strengthening the competencies of public officials, many digital systems developed by the government risk being underutilized.

From the perspective of public organizations, this statement indicates that bureaucratic capacity represents a key factor in the development of digital governance. Government institutions require not only technological infrastructure but also civil servants who possess the ability to understand, manage, and further develop digital systems within administrative practice. Consequently, capacity development among civil servants becomes an integral component of bureaucratic digital transformation. In public administration literature, this phenomenon is frequently associated with the concept of digital-era governance, which emphasizes that digital technologies must be integrated with organizational reform and the strengthening of human resource capacities (Kurniawan et al., 2023; Wijayanti et al., 2025).

Based on the findings of this study, the development of digital governance at the local government level can be understood as an institutional process involving the interaction between technology, organizational structures, and bureaucratic human resources. The digitalization of public administration does not merely produce new technology-based working systems but also encourages transformations in the organizational culture of bureaucracy. Government officials are therefore expected not only to function as executors of administrative procedures but also to act as institutional actors capable of adapting to technological developments and the continuously evolving needs of society.

Structural Challenges in Developing Digital Competence among Civil Servants

Digital transformation within local government bureaucracies does not always proceed linearly or without obstacles. Although various national policies have encouraged the

acceleration of public administrative digitalization, implementation at the organizational level frequently encounters structural constraints that affect the effectiveness of building digital governance capacity. Findings from this study conducted within the Regional Civil Service and Human Resource Development Agency (Badan Kepegawaian dan Pengembangan Sumber Daya Manusia—BKPSDM) of Badung Regency indicate that the primary challenges in developing the digital capacity of public officials are not limited to the availability of technological infrastructure. Rather, they are closely related to the social conditions of the organization, the competencies of human resources, and limitations in institutional support. Overall, three principal constraints were identified as influencing efforts to strengthen the digital capacity of civil servants: disparities in digital competencies among civil servants (Aparatur Sipil Negara—ASN), relatively low motivation for professional capacity development, and limited budget allocations for sustaining training programs.

The disparity in digital competencies represents one of the most visible challenges in the process of digitalizing local government bureaucracy. Differences in digital literacy among ASN are influenced by several factors, including educational background, work experience, age, and the nature of organizational tasks performed by employees. Field observations conducted at the BKPSDM office revealed that employees working in personnel administration units tend to be more accustomed to utilizing digital information systems in their daily work activities. These employees routinely access web-based personnel applications, manage digital documents, and process personnel data through integrated information systems. In several workspaces, administrative staff were observed using computers with multiple applications open simultaneously, ranging from personnel management systems to internal communication platforms used for inter-unit coordination.

However, this situation does not fully apply to organizational units with broader operational functions. In several cases, officials who had previously relied more heavily on manual administrative procedures still required time to adjust to the use of digital systems. During the observation period, for instance, several employees were seen asking colleagues for assistance in accessing particular features within the personnel information system. This condition indicates that the process of adaptation to digital technology is still occurring gradually and unevenly across different sections of the organization.

Information obtained through interviews further reinforced these findings. One official within BKPSDM, referred to in this study as Informant A, explained that differences in digital capabilities among civil servants are often associated with variations in work experience and generational background. According to the informant, younger officials generally adapt more quickly to digital technologies because they are more accustomed to using digital devices in their daily lives. In contrast, some officials who have spent many years working within conventional bureaucratic systems tend to require a longer period of adjustment when transitioning to technology-based administrative systems. Nevertheless, the informant emphasized that this condition does not imply that senior officials are incapable of adapting; rather, they require more intensive training approaches to effectively

understand and utilize newly introduced digital working systems.

In addition to disparities in digital competencies, the study also found that the motivation of civil servants to develop their professional capacity remains a distinct challenge within the broader process of bureaucratic digital transformation. Several informants indicated that training programs organized by personnel management institutions are not always perceived as strategic opportunities for competency development. In certain cases, training activities continue to be viewed primarily as administrative obligations that must be fulfilled to comply with civil service regulations.

A structural official interviewed in this study, referred to as Informant B, described that some civil servants participate in training activities mainly due to organizational assignments rather than internal motivation to improve their professional capabilities. According to the informant, this mindset reflects a legacy of bureaucratic culture that has historically emphasized compliance with administrative procedures rather than competency development based on continuous learning. In the informant's view, the transition toward a digital bureaucracy requires a transformation in organizational culture that encourages public officials to engage in self-directed learning and to remain open to technological innovation.

This pattern was also evident during observations conducted throughout the research process. In several internal socialization activities related to the introduction of new administrative applications, employee participation appeared relatively high at a formal level. However, in discussions that followed these activities, several employees admitted that they still relied on previous work methods because they felt more comfortable with familiar procedures. This situation illustrates that digital transformation within the bureaucracy requires not only technical training but also broader changes in organizational work culture.

Another significant challenge in developing the digital capacity of civil servants concerns budgetary constraints in sustaining training programs. Digital competency development programs often require substantial resources, including training materials, technological facilities, and expert instructors with specialized knowledge in information technology. In practice, however, budget allocations for human resource development at the local government level frequently have to compete with various other development priorities.

Informant C, who serves as one of the officials responsible for managing training programs at BKPSDM, explained that the institution has in fact designed several initiatives aimed at improving the digital competencies of civil servants. However, the implementation of these programs often needs to be adjusted to the availability of the regional government's annual budget. According to the informant, in recent years local government budget priorities have been more heavily directed toward public service delivery and infrastructure development, which means that civil servant training programs cannot always be implemented regularly at the scale initially planned.

From an analytical perspective, these findings demonstrate that the challenges of digital transformation in public bureaucracy cannot be understood solely as technological

issues. The obstacles that arise during the digitalization process frequently stem from broader organizational dynamics and institutional structures. This observation is consistent with the perspective of digital transformation in public organizations, which emphasizes that digital change within public institutions constitutes a complex process involving interactions among technology, organizational structures, workplace culture, and human resource capacities (Kurniawan et al., 2023).

Within this framework, the development of digital governance capacity requires strategies that extend beyond the provision of technological infrastructure to include strengthening the competencies of public officials and reforming bureaucratic organizational culture. Without enhancing the capacities of the human resources responsible for managing technological systems, many digital initiatives introduced by governments risk becoming merely administrative innovations that are not fully utilized in everyday bureaucratic practices.

Institutional Strategies for Civil Service Capacity Development

Efforts to build digital governance capacity at the local government level depend not only on identifying structural constraints but also on the ability of institutions to formulate systematic and sustainable strategies for developing the capacity of public officials. In this context, the Regional Civil Service and Human Resource Development Agency (Badan Kepegawaian dan Pengembangan Sumber Daya Manusia—BKPSDM) of Badung Regency plays a strategic role as the institution responsible for designing and implementing various competency development programs for civil servants (Aparatur Sipil Negara—ASN). The findings of this study indicate that the capacity development strategies developed by the agency are not solely oriented toward improving the technical skills required to operate digital technologies; rather, they are also directed toward fostering an organizational culture within the bureaucracy that is adaptive to digital transformation. Broadly, these strategies can be understood through three main approaches: the implementation of digital competency-based education and training programs, the strengthening of an adaptive bureaucratic work culture in response to technological change, and the organization of digital transformation socialization programs across regional government institutions.

The first prominent strategy involves the implementation of education and training programs focused on strengthening the digital competencies of civil servants. These programs are designed to enhance the ability of public officials to utilize information technology in various aspects of governmental administration. Field observations conducted within the BKPSDM office in Badung Regency indicate that the agency regularly organizes training activities aimed at improving the digital literacy of civil servants. During the observation period, for example, several employees were seen participating in a training session on the use of personnel administration applications held in the institution's internal training facility. The training room was equipped with neatly arranged computer units and a projector screen displaying step-by-step guidelines for operating the personnel information system.

During the training sessions, participants were not only introduced to the technical features of the application but were also encouraged to understand how digital systems could be utilized to accelerate administrative processes and improve the accuracy of personnel data management. Several participants appeared actively engaged in experimenting with various application features demonstrated by the training facilitator. The overall atmosphere of the training environment reflected a dynamic learning process, where participants discussed their respective experiences in utilizing digital systems within their organizational units.

Information obtained through interviews further suggests that digital training initiatives constitute part of a broader strategy aimed at enhancing the competencies of civil servants. One official, referred to in this study as Informant A, explained that the institution has gradually begun integrating digital literacy components into various training programs provided for ASN. According to the informant, the primary objective of these programs is not merely to teach employees how to operate specific applications but also to develop a broader understanding of the importance of utilizing technology in public administration. In the informant's view, strengthening digital competencies has become an unavoidable necessity within the context of contemporary bureaucratic transformation.

Beyond technical training initiatives, the second strategy developed by BKPSDM involves strengthening a bureaucratic work culture that is adaptive to technological change. Digital transformation in government requires not only the technical capabilities of civil servants but also a shift in organizational mindsets and work practices. Consequently, the personnel management agency seeks to cultivate awareness among civil servants regarding the importance of innovation, continuous learning, and the ability to adapt to technological developments.

Observations within the office environment indicate that efforts to build such an adaptive work culture are carried out through various internal organizational activities. During several coordination meetings held throughout the research period, for instance, institutional leaders frequently emphasized the importance of openness toward technological innovation in the administration of governmental activities. In one internal meeting attended by several officials and staff members, organizational leaders highlighted the need for bureaucratic work patterns to become more responsive to the advancement of digital technologies. During the discussion, employees were encouraged not only to perform routine administrative procedures but also to explore new ways of improving work efficiency through the use of digital technologies.

This perspective was also reflected in interviews with another participant, referred to in this study as Informant B. The informant explained that the transition toward a digital bureaucracy fundamentally requires a transformation in organizational culture. According to the informant, public officials must begin to perceive technology not as an additional burden within their work responsibilities but as a tool capable of enhancing the quality of public service delivery. The informant further emphasized that organizational learning represents a crucial component of digital transformation, as the ability of civil servants to continuously

learn and adapt will ultimately determine the success of implementing digital systems within bureaucratic institutions.

The third strategy identified in this study involves the organization of digital transformation socialization programs within regional government institutions. These programs aim to enhance civil servants' understanding of the broader policy direction of governmental digitalization and the importance of integrating technology into public service practices. Such socialization initiatives are generally conducted through internal seminars, cross-agency discussions, and the dissemination of information through various governmental coordination forums.

During the observation process, socialization activities were often seen functioning as platforms for dialogue between personnel policy administrators and civil servants from different organizational units. In one socialization event attended by representatives from several regional government agencies, participants were presented with information regarding the local government's digital transformation agenda as well as various competency development programs designed to support the process. The atmosphere of the discussion indicated that civil servants were gradually beginning to recognize that the digitalization of public administration forms part of a broader bureaucratic reform agenda.

Another informant, referred to in this study as Informant C, explained that these socialization programs play an important role in fostering collective awareness among civil servants regarding ongoing changes within governmental bureaucracy. According to the informant, many employees initially did not fully understand the objectives of public administrative digitalization. Through socialization activities, civil servants are expected to recognize that the use of digital technologies is not merely an administrative policy requirement but rather part of a broader governmental effort to enhance the quality of governance and public service delivery.

From an analytical perspective, the strategies developed by BKPSDM Badung Regency demonstrate that bureaucratic capacity development in the digital era cannot be separated from the broader dynamics of public organizations. Although improving the technical competencies of civil servants represents an important step in supporting the implementation of digital systems, the success of digital transformation also depends heavily on the ability of organizations to cultivate a work culture that supports innovation and continuous learning. This perspective aligns with approaches in public administration literature that emphasize that digital transformation in governmental organizations is a multidimensional process involving changes in technology, organizational structures, and patterns of social interaction within the bureaucracy (Andriyan et al., 2024).

Toward Smart Civil Servants: Institutionalizing Digital Governance Capacity

Efforts to develop digital governance at the local government level are ultimately directed not only toward establishing technology-based administrative systems but also toward developing a profile of public officials capable of managing and utilizing such technologies effectively. In this context, the concept of Smart Civil Servants becomes relevant

in describing a type of bureaucratic official who possesses not only technical competencies in the use of digital technologies but also professional integrity, analytical capacity, and the ability to adapt to the dynamic changes occurring within contemporary governmental environments. Findings from this study conducted within the Regional Civil Service and Human Resource Development Agency (Badan Kepegawaian dan Pengembangan Sumber Daya Manusia—BKPSDM) of Badung Regency indicate that the various capacity development strategies implemented by the institution have gradually been directed toward shaping civil servants who are capable of actively supporting the digital transformation of government administration.

Field observations indicate that the shift toward a more technologically adaptive profile of public officials has begun to emerge within the daily working dynamics of the regional bureaucracy. In several organizational units within BKPSDM, for instance, employees not only utilize digital systems as administrative tools but also employ these technologies to conduct more systematic analyses of personnel data. In one workspace observed during the research process, several staff members were seen reviewing personnel data through an integrated digital information system. The data were subsequently used to prepare internal reports concerning competency development needs among civil servants across various regional government agencies. This situation demonstrates that digital technologies are no longer functioning merely as tools for data storage; rather, they are increasingly used as instruments that support decision-making processes within the organization.

Observations within the office environment also indicate that the use of digital technology has begun to encourage more collaborative working patterns among public officials. On several occasions, informal discussions among employees regarding the utilization of administrative applications were observed taking place within workspaces as well as in small meeting rooms used for internal coordination. Employees who possessed greater familiarity with specific features of digital systems frequently assisted their colleagues in operating those applications. Such interactions illustrate the emergence of collective learning processes that indirectly contribute to strengthening the digital capacity of the organization.

Information obtained through interviews with several informants further suggests that the development of bureaucratic capacity is no longer narrowly understood as merely improving technical skills. One official responsible for managing competency development programs, referred to in this study as Informant A, explained that the objective of the training programs organized by BKPSDM is not limited to teaching civil servants how to operate particular digital applications. According to the informant, the development of ASN capacity should be directed toward cultivating more analytical and adaptive modes of thinking. In this regard, public officials are expected to understand how digital technologies can be utilized to support policy planning processes, data management, and improvements in the quality of public service delivery.

This perspective was also reinforced by another participant, referred to in this study as Informant B. During the interview, the informant explained that the transition toward digital bureaucracy fundamentally requires public officials to adopt new perspectives regarding their professional roles. Within conventional administrative systems, civil servants often function primarily as implementers of hierarchical administrative procedures. However, in the context of digital governance, public officials are expected to be more proactive in utilizing technology to resolve administrative issues more efficiently. Consequently, according to the informant, the development of bureaucratic capacity must include the cultivation of critical thinking skills, collaborative working abilities, and the capacity to understand the continuously evolving dynamics of technological change.

These findings suggest that the concept of Smart Civil Servants in the context of local bureaucracy does not merely refer to officials who are capable of using digital technologies but also to those who possess a more innovative work orientation and responsiveness to societal needs. In several internal discussions observed during the research period, institutional leaders frequently emphasized that governmental digitalization should not be limited to the adoption of administrative applications but must also produce tangible improvements in the quality of public services. Civil servants are therefore encouraged to utilize digital technologies to accelerate service delivery processes, enhance the accuracy of administrative data, and strengthen transparency in the management of public information.

Field observations further indicate that the process of developing technologically adaptive public officials takes place through various mechanisms of organizational learning. In several training sessions and policy socialization activities related to governmental digitalization, participants were not only provided with technical instruction on the use of information systems but were also invited to discuss the challenges they encounter when integrating technology into their everyday work practices. Such discussions often generated exchanges of experience among civil servants from different regional government agencies, thereby creating shared learning spaces that collectively strengthen organizational capacity.

From an analytical perspective, these dynamics demonstrate that the development of digital governance capacity at the local government level cannot be separated from the role of civil servants as institutional actors in the process of digital transformation. In contemporary public administration literature, public officials are increasingly viewed as agents of change who shape governance practices through their everyday interactions within organizational environments (Mergel et al., 2019). Accordingly, governmental digitalization does not only produce changes at the level of technology or administrative systems but also influences how civil servants understand their roles within the relationship between the state and society.

Within this context, the concept of Smart Civil Servants can be understood as an institutional effort to develop a profile of public officials capable of integrating technical competencies, professional values, and adaptive capacities in response to technological change. Civil servants who possess adequate digital competencies are better positioned to

utilize information systems to support data-driven decision-making, improve administrative efficiency, and enhance transparency in governmental administration. At the same time, professional integrity and a strong orientation toward public service remain essential elements to ensure that the utilization of digital technologies continues to serve the broader interests of society.

This perspective is consistent with approaches in the literature on digital transformation in public organizations, which emphasize that the success of governmental digitalization largely depends on the human capacities responsible for managing technological systems (Andriyan et al., 2024). Without public officials who possess analytical capabilities, collaborative skills, and a strong commitment to public service, many digital innovations developed by governments risk failing to produce meaningful improvements in the quality of governance.

Reframing Digital Governance: Bureaucratic Capacity as the Foundation of Digital Transformation

The discussion on the development of digital governance at the local government level ultimately leads to an important conceptual finding: digital transformation in bureaucracy cannot be understood merely as a process of technological adoption or the modernization of administrative infrastructure. Rather, it represents a broader institutional transformation involving the capacity of bureaucratic organizations as the primary actors responsible for managing and utilizing digital technologies in governmental practices. The findings of this study indicate that the success of governmental digitalization largely depends on the ability of bureaucratic organizations to establish a solid foundation of administrative capacity, encompassing technical competencies, supportive organizational cultures, and a public service orientation that is adaptive to technological change.

Field observations within the Regional Civil Service and Human Resource Development Agency (Badan Kepegawaian dan Pengembangan Sumber Daya Manusia—BKPSDM) of Badung Regency reveal that the digitalization of governmental administration has indeed progressed through the adoption of various information systems and personnel management applications. However, the implementation of these technologies does not operate merely as a technical change. In several organizational units observed during the research process, the use of digital systems was frequently accompanied by intensive processes of organizational learning. Employees who had previously been accustomed to manual administrative procedures gradually adapted to technology-based work processes.

During one observation conducted in the personnel administration service unit, several staff members were seen accessing the personnel information system to verify civil service data used in preparing internal organizational reports. The office space was equipped with workstations containing computers and monitors displaying various governmental administrative applications. Work activities unfolded in a dynamic environment, where employees engaged in discussions regarding the procedures for utilizing the digital systems employed in personnel data management. Some staff members were also observed assisting

colleagues in understanding specific features of administrative applications that had only recently been introduced.

This situation illustrates that digital transformation in bureaucracy essentially constitutes a gradual process of organizational adaptation. While digital technologies provide the infrastructure that enables the modernization of public administration, the effectiveness of these technologies ultimately depends on the ability of civil servants to understand and integrate them into their everyday work practices. In this regard, bureaucratic capacity emerges as a key factor determining the extent to which digital innovations can generate meaningful improvements in the quality of governmental governance.

These findings are further reinforced by interviews with several informants involved in the management of civil service policies within the regional government. One official, referred to in this study as Informant A, explained that the digitalization of governmental administration requires organizational readiness that extends beyond technical preparation to include institutional readiness. According to the informant, many governmental digitalization initiatives are initially designed with a strong emphasis on technological system development; however, in practice, the implementation of such policies often encounters obstacles because civil servants do not yet fully possess the competencies necessary to manage these systems effectively.

A similar perspective was expressed by another informant, referred to in this study as Informant B. In the interview, the informant described the strengthening of bureaucratic capacity as one of the principal challenges in the digital transformation of local government administration. Digital technology, in this view, fundamentally functions as a tool supporting public administrative processes. Without civil servants who are capable of understanding and utilizing such technologies optimally, digital systems developed by the government risk failing to produce significant improvements in public service quality. Consequently, the informant emphasized that the development of civil service capacity must be positioned as a central priority within the broader agenda of governmental digital transformation.

These findings suggest that the development of digital governance cannot be separated from the dynamics of bureaucratic institutional capacity. In many internal organizational discussions observed during the research process, institutional leaders frequently emphasized that the success of governmental digitalization is not determined solely by the sophistication of the technologies employed but also by the readiness of the human resources responsible for operating those systems. Civil servants are therefore encouraged to continuously improve their ability to understand technological developments and integrate such technologies into public service practices.

Field observations further indicate that efforts to strengthen bureaucratic capacity are implemented through various organizational mechanisms, including digital training programs, policy socialization initiatives related to governmental digitalization, and the cultivation of organizational cultures that are more open to technological innovation. In several training sessions observed during the study, civil servants were not only provided with technical

instruction on the use of governmental information systems but were also encouraged to understand how digital technologies could be utilized to improve administrative efficiency and strengthen transparency in the management of public data.

These organizational learning processes demonstrate that digital transformation in bureaucracy is a complex process involving interactions between technology, organizational structures, and the individual capacities of public officials. From an analytical perspective, these dynamics suggest that the development of digital governance at the local government level should be understood as a broader institutional process rather than merely a modernization of technological systems. Digital transformation fundamentally entails changes in how bureaucratic organizations operate, interact, and interpret their roles within the broader system of governance.

Within public administration literature, such perspectives are frequently discussed through the framework of digital-era governance, which emphasizes the transformative potential of digital technologies in reshaping how governments organize public services, manage information, and interact with citizens (Ramadoan et al., 2025; Turner et al., 2022). However, recent studies also highlight that the success of digital governance implementation depends heavily on the organizational capacity of government institutions to manage these changes effectively. Without adequate bureaucratic capacity, digital innovations in the public sector risk becoming merely technological projects that fail to produce substantive improvements in the quality of governance (Ramadoan et al., 2025; Turner et al., 2022).

In this context, the present study contributes conceptually by emphasizing that the development of digital governance at the local government level should be viewed through the perspective of bureaucratic capacity as the fundamental foundation of digital transformation. The capacity development strategies for civil servants identified in this research demonstrate that governmental digitalization requires not only investment in technological infrastructure but also sustained investment in the development of bureaucratic human resources. Strengthening digital competencies, fostering organizational cultures that are adaptive to innovation, and integrating civil service development policies with governmental digitalization agendas represent critical elements in establishing the institutional foundations necessary for successful digital transformation.

The reframing of digital governance proposed in this article positions bureaucracy not merely as an implementer of digitalization policies but as an institutional actor that plays a strategic role in shaping digital governance practices at the local level. Bureaucratic officials function as the connecting link between digital transformation policies formulated at the governmental level and their concrete implementation in everyday public service practices. Therefore, the development of bureaucratic capacity must be understood as a fundamental prerequisite for the creation of responsive, transparent, and sustainable digital governance.

CONCLUSION

This study demonstrates that the development of digital governance at the local government level cannot be understood merely as a process of adopting digital technologies within public administration. Rather, it represents a broader process of strengthening the institutional capacity of bureaucracy that enables these technologies to be implemented effectively in governmental practice. The findings indicate that civil service development strategies implemented by public personnel management institutions play a critical role in establishing the institutional foundations for bureaucratic digital transformation through three key dimensions: the enhancement of civil servants' digital competencies, the strengthening of organizational cultures that are adaptive to technological innovation, and the expansion of bureaucratic understanding regarding the broader policy direction of governmental digitalization. Within this context, bureaucratic officials are no longer positioned solely as executors of administrative procedures but as institutional actors who shape the practices of digital governance through analytical capacity, collaborative capability, and a technology-oriented public service perspective. The study further emphasizes that the success of governmental digital transformation largely depends on the integration of digitalization agendas with policies aimed at developing bureaucratic human resources. The primary contribution of this article lies in its conceptual emphasis that bureaucratic capacity constitutes the fundamental foundation for the development of digital governance at the local level. Consequently, civil service development strategies should be positioned as an integral component of the digital transformation process in government, rather than merely as supporting programs for the implementation of administrative technologies.

ETHICAL STATEMENT AND DISCLOSURE

This study was conducted in accordance with established ethical principles, including informed consent, protection of informants' confidentiality, and respect for local cultural values. Special consideration was given to participants from vulnerable groups to ensure their safety, comfort, and equal rights to participate. No external funding was received, and the authors declare no conflict of interest. All data and information presented were collected through valid research methods and have been verified to ensure their accuracy and reliability. The use of artificial intelligence (AI) was limited to technical assistance for writing and language editing, without influencing the scientific substance of the work. The authors express their gratitude to the informants for their valuable insights, and to the anonymous reviewers for their constructive feedback on an earlier version of this manuscript. The authors take full responsibility for the content and conclusions of this article.

REFERENCES

- Ahad, M. P. Y., & Nugraha Barsei, A. (2023). Sistem Pemerintahan Berbasis Elektronik: Best Practice dari Pemerintah Daerah di Indonesia. *Jurnal Transformasi Administrasi*, 13(01), 52–74. <https://doi.org/10.56196/jta.v13i01.236>
- Andayani, W., Dahlia, Putrianti, E., Wisdaningrum, O., Putranto, P., & Yanuarisa, Y. (2024).

- Penguatan Good Governance: Pengalaman Penerapan Electronic Government Pemerintah Daerah Di Indonesia. *Jurnal Aktiva : Riset Akuntansi Dan Keuangan*, 6(2), 116–131. <https://doi.org/10.52005/aktiva.v6i2.240>
- Andriyan, Y., Rajab, A. M., Pamungkas, A. C., Muhamad, S., & Rahakratat, R. (2024). Transformasi E-Government Menuju Good Governance di Pemerintah Kabupaten Sorong. *Samakta: Jurnal Pengabdian Kepada Masyarakat*, 1(2), 24–35. <https://doi.org/10.61142/samakta.v1i2.127>
- Aneta, Y., Prahara, S., Aneta, A., & Ahmad, J. (2023). Bureaucratic Transformation Optimizing Village Bureaucracy Transformation: Gorontalo, Indonesia. *Policy & Governance Review*, 7(3), 211. <https://doi.org/10.30589/pgr.v7i3.775>
- Ariansyah, K., Setiawan, A. B., Darmanto, D., Nupikso, D., Budhirianto, S., Hidayat, D., & Hikmaturokhman, A. (2023). Digital inclusion for all? A gender-disaggregated analysis of e-government service use in Indonesia. *Transforming Government: People, Process and Policy*, 17(4), 655–672. <https://doi.org/10.1108/TG-04-2023-0043>
- Asmara, A. Y., Handoyo, S., Purwadi, P., Dinaseviani, A., Jayanthi, R., & Kusumawardhani, D. (2024). Examining Public Service Innovations in Indonesia: Challenges, Characteristics, and Implementation within Bureaucratic Systems. *BISNIS & BIROKRASI: Jurnal Ilmu Administrasi Dan Organisasi*, 31(2), 74–85. <https://doi.org/10.20476/jbb.v31i2.1414>
- Azzahra, A. (2023). Implementation Of Good Governance in Public Services at Local Government. *International Journal of Social Service and Research*, 3(7), 1899–1906. <https://doi.org/10.46799/ijsr.v3i7.594>
- Budiarto, M., Asmawati, A., & Kurniawan, M. (2024). Digital Transformation of Local Government: Design and Development of the Pakuhaji District Community Service Information System Website. *International Journal of Cyber and IT Service Management*, 4(1), 11–18. <https://doi.org/10.34306/ijcitsm.v4i1.143>
- Dellyana, D., Arina, N., & Fauzan, T. R. (2023). Digital Innovative Governance of the Indonesian Creative Economy: A Governmental Perspective. *Sustainability*, 15(23), 16234. <https://doi.org/10.3390/su152316234>
- Djatmiko, G. H., Sinaga, O., & Pawirosumarto, S. (2025). Digital Transformation and Social Inclusion in Public Services: A Qualitative Analysis of E-Government Adoption for Marginalized Communities in Sustainable Governance. *Sustainability*, 17(7), 2908. <https://doi.org/10.3390/su17072908>
- Fadrial, R., Sujianto, Simanjuntak, H. T. R. F., & Wirman, W. (2024). A Qualitative Study on the Influencing Factors of E-Government Adoption to Improve Public Trust in Local Government: Case Study of Rokan Hulu Municipality. *Indonesian Journal of Computer Science*, 13(3), 35–44. <https://doi.org/10.33022/ijcs.v13i3.3931>
- Faedlulloh, D., & Yulianto, Y. (2023). Model for Post-Pandemic Bureaucracy in Indonesia: Is Post-Bureaucracy Relevant? *Jurnal Borneo Administrator*, 19(3), 221–236. <https://doi.org/10.24258/jba.v19i3.1228>
- Febriyanti, D., Widianingsih, I., Sumaryana, A., & Buchari, R. A. (2023). Information Communication Technology (ICT) on Palembang city government, Indonesia: Performance measurement for great digital governance. *Cogent Social Sciences*, 9(2), 2269710. <https://doi.org/10.1080/23311886.2023.2269710>
- Fitriyanti, E. (2024). The Effect of Digital Transformation on Governance in Indonesia: A Case Study of e-Government Implementation in Public Services. *Journal of Political Innovation*

- and Analysis*, 1(1), 26–32. <https://doi.org/10.59261/jpia.v1i1.3>
- Hafel, M. (2023). Digital Transformation in Politics and Governance in Indonesia: Opportunities and Challenges in the Era of Technological Disruption. *Society*, 11(2), 742–757. <https://doi.org/10.33019/society.v11i2.577>
- Harsoyo, H., & Amanatin, E. L. (2025). Digital Governance Innovations for Achieving Public Service Excellence: Evidence from Local E-Government Initiatives in Indonesia. *International Journal of Social Science and Business*, 9(3), 674–688. <https://doi.org/10.23887/ijssb.v9i3.102160>
- Hidayat, F. (2023). The Impact of Bureaucratic Reform on Indonesian Governance: A Perspective Review of Academic Literature. *Jurnal Politik Pemerintahan Dharma Praja*, 16(2), 169–196. <https://doi.org/10.33701/jppdp.v16i2.3761>
- Huraerah, A., Yuningsih, Y., Hani, U., Yusuf, H., Sakroni, S., & Fahrudin, A. (2022). Bureaucratic culture of state civil servants in the implementation of national health insurance policy for the poor people in Indonesia. *International Journal of Health Sciences*, 6(2), 545–554. <https://doi.org/10.53730/ijhs.v6n2.6726>
- Hutahaean, M., & Pasaribu, J. (2022). Bureaucratic Reform and Changes in Public Service Paradigm Post-Decentralization in Indonesia: 2001-2010. *KnE Social Sciences*, 7(5), 795–810. <https://doi.org/10.18502/kss.v7i5.10595>
- Isabella, I., Alfitri, A., Saptawan, A., Nengyanti, N., & Baharuddin, T. (2024). Empowering Digital Citizenship in Indonesia: Navigating Urgent Digital Literacy Challenges for Effective Digital Governance. *Journal of Governance and Public Policy*, 11(2), 142–155. <https://doi.org/10.18196/jgpp.v11i2.19258>
- Iswanto, D., & Putra, R. A. (2023). Evaluation of Bureaucratic Reforms in Realizing World Class Government in Tuban. *Spirit Publik: Jurnal Administrasi Publik*, 18(2), 139. <https://doi.org/10.20961/sp.v18i2.72811>
- Karinda, K., Nursin, E., Sawir, M., & Sriyakul, T. (2024). Potential and Challenges of Digital Governance at the Local Level in Central Sulawesi, Indonesia. *Journal of Contemporary Governance and Public Policy*, 5(2), 135–152. <https://doi.org/10.46507/jcgpp.v5i2.246>
- Khairani, Sri Arnetti, & Fikri Hasan. (2023). The Implementation of Competency Development of State Civil Apparatus in The Framework of Fulfilling The Rights of Civil Servants In West Sumatra Province. *Jurnal IUS Kajian Hukum Dan Keadilan*, 11(1), 176–195. <https://doi.org/10.29303/ius.v11i1.1210>
- Kurniawan, C., Pribadi, U., & Iqbal, M. (2023). The Role of e-Governance in Improving Local Governments Performance (Case Study: Sumbawa Regency). *Jurnal Ilmiah Peuradeun*, 11(3), 1139–1154. <https://doi.org/10.26811/peuradeun.v11i3.795>
- Lubis, S., Purnomo, E. P., Lado, J. A., & Hung, C.-F. (2024). Electronic governance in advancing sustainable development goals through systematic literature review. *Discover Global Society*, 2(1), 77. <https://doi.org/10.1007/s44282-024-00102-3>
- Maulana, A., Indriati, F., & Hidayah, K. (2022). Analysis of Bureaucratic Reform Through Delaying of Government Institutions in Indonesia. *Jurnal Borneo Administrator*, 18(2), 155–170. <https://doi.org/10.24258/jba.v18i2.1003>
- Mislawaty, S. E., Harahap, R., & Anisyah, S. (2022). Digitalizing Governance in South Sumatera: An Introduction “E-Sumsel” System Reforming Public Service Management. *Jurnal Bina Praja*, 14(3), 399–411. <https://doi.org/10.21787/jbp.14.2022.399-411>
- Mutiarin, D., Khaerah, N., Nyssa, A. V. I., & Nasrulhaq, N. (2024). E-Government Development:

- Catalysing Agile Governance Transformation in Indonesia. *Journal of Contemporary Governance and Public Policy*, 5(1), 87–110. <https://doi.org/10.46507/jcgpp.v5i1.270>
- Nasution, A. F., Sihombing, M., & Ridho, H. (2024). The Impact of Bureaucratic Reform Policy on Public Services at the Population and Civil Registration Service of North Padang Lawas Regency. *PERSPEKTIF*, 13(1), 231–243. <https://doi.org/10.31289/perspektif.v13i1.11035>
- Nugroho, A. A., Haryono, B. S., Putera, F., & Noor, I. (2024). A Systematic Literature Review: Challenges and Strategies of Bureaucratic Reform in Developing Countries. *Journal of Law and Sustainable Development*, 12(2), e3186. <https://doi.org/10.55908/sdgs.v12i2.3186>
- Prabowo, M. R., Maryani, D., W. Kawuryan, 3Megandaru, & Wargadinata, E. (2026). Digital Governance Transformation in Regional Government: A Multi-Dimensional Framework for Enhancing Public Service Delivery in Central Kalimantan Province, Indonesia. *Architecture Image Studies*, 7(1), 1208–1222. <https://doi.org/10.62754/ais.v7i1.1012>
- Prasodjo, T. (2025). Rethinking Bureaucracy in the Digital Era: A Qualitative Review of Public Sector Transformation in Indonesia. *Golden Ratio of Social Science and Education*, 5(2), 290–301. <https://doi.org/10.52970/grsse.v5i2.1425>
- Rahmat, B., Hartanto, B., & Hilman, A. (2024). Bureaucratic Reform in Indonesia: From “Public Administration” to “Public Management.” *Journal of Local Government Issues*, 7(2), 144–158. <https://doi.org/10.22219/logos.v7i2.33848>
- Ramadoan, S., Firman, F., & Sahrul, S. (2025). Structural Transformation and Capacity Strengthening of the Apparatus. *Jurnal Syntax Imperatif: Jurnal Ilmu Sosial Dan Pendidikan*, 6(3), 403–411. <https://doi.org/10.54543/syntaximperatif.v6i3.704>
- Saputra, F. T., Indrabudi, T., Dirgahayu, D., Karman, & Mudjiyanto, B. (2023). Initiatives of the Indonesian Government for Digital Transformation in Rural Areas. *E3S Web of Conferences*, 444(12), 03001. <https://doi.org/10.1051/e3sconf/202344403001>
- Setyawan, R., Raharjo, B., & Dewayani, J. (2024). Governance in the Digital Era: Analyzing the Adoption of E-Government Services in Local Authorities Through Quantitative Methods. *Journal of Management and Informatics*, 3(3), 434–450. <https://doi.org/10.51903/jmi.v3i3.54>
- Simandjorang, V., Timothy, B. M., & Kurniawan, A. (2022). Contextual Bureaucratic Reform in the Recruitment System of the State Civil Apparatus of Indonesia. *KnE Social Sciences*, 7(9), 599–617. <https://doi.org/10.18502/kss.v7i9.10967>
- Turner, M., Prasojo, E., & Sumarwono, R. (2022). The challenge of reforming big bureaucracy in Indonesia. *Policy Studies*, 43(2), 333–351. <https://doi.org/10.1080/01442872.2019.1708301>
- Umasugi, M. (2025). Bureaucratic Reform and Public Policy Dynamics: Evaluation Study of One Data Indonesia Program. *International Journal of Community Service (IJCS)*, 4(1), 1–21. <https://doi.org/10.55299/ijcs.v4i1.1279>
- Virnandes, S. R., Shen, J., & Vlahu-Gjorgievska, E. (2024). Building public trust through digital government transformation: A qualitative study of Indonesian civil service agency. *Procedia Computer Science*, 234(12), 1183–1191. <https://doi.org/10.1016/j.procs.2024.03.114>
- Wadipalapa, R. P., Katharina, R., Nainggolan, P. P., Aminah, S., Apriani, T., Ma’rifah, D., & Anisah, A. L. (2024). An Ambitious Artificial Intelligence Policy in a Decentralised Governance System: Evidence From Indonesia. *Journal of Current Southeast Asian*

Affairs, 43(1), 65–93. <https://doi.org/10.1177/18681034231226393>

Wagola, R., Nurmandi, A., Misran, & Subekti, D. (2023). Government Digital Transformation in Indonesia. *HCI International 2023 Posters*, 286–296. https://doi.org/10.1007/978-3-031-36001-5_37

Widowati, L., Setyowati, K., & Suharto, D. G. (2023). Dynamic Governance As Perspective in Indonesian Bureaucracy Reform: Qualitative Analysis of Indonesian Bureaucracy Reform Based on Dynamic Governance. *Jurnal Bina Praja*, 15(2), 403–415. <https://doi.org/10.21787/jbp.15.2023.403-415>

Wijayanti, A. D., Augustinah, F., & Ferriswara, D. (2025). The Role of Bureaucratic Reform in Enhancing Public Service Quality: Evidence from East Java. *Journal of Governance and Public Administration*, 2(3), 668–678. <https://doi.org/10.70248/jogapa.v2i3.2407>