

RESEARCH ARTICLE



INNOVATION MANAGEMENT CAPACITY IN DIGITAL TRANSFORMATION OF LOCAL GOVERNMENT: A QUALITATIVE CASE STUDY OF PUBLIC SERVICES IN MAKASSAR, INDONESIA

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ABSTRACT

Digital transformation of local governments is often introduced through the development of electronic platforms. Still, its success is largely determined by the ability of public organizations to manage innovation, create effective work processes, and prioritize citizen-centered services. This study aims to analyze the innovation management capacity of local governments in the digital transformation of public services in Makassar City, Indonesia. The study used a qualitative approach with an exploratory case study design. Data were collected through semi-structured interviews, observations of service practices, and analysis of relevant documents, including digital service procedures, internal reports, policy documents, and contextual digital-government data. Analysis was conducted thematically through iterative coding, data reduction, category development, and triangulation between sources. The results show that digital service platforms and formal policy commitments are in place. However, service implementation still operates in a hybrid manner, ranging from online registration with manual verification, physical filing, and parallel data input. Apparatus adaptation is driven more by informal learning, peer mentoring, problem-solving through instant messaging applications, and leadership monitoring, rather than by systematic training. Leadership supports digital adoption through daily oversight, coordination with technical units, and operational problem-solving, but hierarchical decision-making and application fragmentation limit end-to-end service integration. For citizens, digital transformation improves initial access, queue management, and administrative visibility. Still, its impact on service quality and trust remains limited by network stability, digital literacy gaps, and mandatory face-to-face verification. This research contributes to digital public administration by positioning local digital transformation as a socio-technical innovation management process, rather than simply a technology procurement project. Practical implications include the need for an integrated service architecture, continuous capacity building of civil servants, human-centered service design, and inclusive digital literacy support.

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1. Introduction

Digital transformation has become a strategic agenda in public administration as governments are required to provide services that are faster, more transparent, more accessible, and more responsive to public needs. In the public sector, digital transformation cannot be understood simply as the adoption of information technology or the development of service applications. This transformation is a process of organizational change that impacts bureaucratic structures, work routines, coordination mechanisms, decision-making, and the relationship between government and citizens in creating public value. Therefore, the success of digital transformation is determined not only by technological readiness but also by the organization's ability to manage change, build staff capacity, and create adaptive and collaborative governance ([Djarmiko et al., 2025](#)).

Various studies have shown that digital transformation in the public sector can improve administrative efficiency, transparency, service quality, and the government's ability to conduct real-time monitoring. However, its implementation still faces various challenges, such as limited information technology infrastructure, uneven network connectivity, fragmented information systems, resistance to change, and varying organizational capacities across agencies ([Criado & Gil-Garcia, 2019](#)). This situation demonstrates that the digitalization of public services is not solely a matter of technology provision, but

also relates to the organization's ability to integrate technology into work processes and services sustainably.

The Indonesian context provides an interesting illustration of the development of digital government transformation. The 2024 Electronic-Based Government System Evaluation (SPBE) showed that 615 central and regional government agencies were evaluated, with the national SPBE index reaching 3.12 on a scale of five, categorizing them as good. The assessment encompassed 47 indicators across policy, governance, management, and service domains, demonstrating that digital government maturity is understood as a combination of institutional capacity, organizational governance, and service quality. Globally, the 2024 United Nations E-Government Survey placed Indonesia in the very high E-Government Development Index (EGDI) category with a score of 0.7991, ranking it 64th in the world, reflecting improvements in information and communication technology infrastructure and strengthening digital literacy (Bahagia et al., 2025; Habsana et al., 2026). However, these indicators primarily reflect macro-level achievements and therefore cannot adequately explain how local government organizations manage the digital transformation process in their daily service practices.

Makassar City is one of the local governments actively developing smart city policies and digital-based public services. Based on the SPBE evaluation results, Makassar City's score increased from 3.41 in 2023 to 4.02 in 2024, placing it in the very good category (Antara News, 2025). This achievement demonstrates institutional progress in implementing digital government. However, an increase in the SPBE score does not necessarily reflect that all public service processes are integrated and effective. In practice, various public organizations still face issues with manual document verification, repetitive data entry, suboptimal system integration, network disruptions, and differences in digital literacy levels between officials and the public. These conditions indicate a gap between institutional success as measured by formal indicators and the actual experiences of service providers and users.

Table 1.
Contextual Supporting Data for the Digital Transformation of the Indonesian and Makassar Governments

Indicator	Key Data	Interpretation for This Study	Source
National SPBE Evaluation (2024)	A total of 615 central and local government institutions were evaluated; 48 institutions achieved the <i>Excellent</i> category; the national SPBE Index reached 3.12/5 (<i>Good</i> category).	Digital government reform has become institutionalized at the national level, although the level of digital maturity varies across government institutions.	Ministry of Administrative and Bureaucratic Reform (2025)
SPBE Evaluation Domains	The evaluation comprises 47 indicators covering the domains of policy, governance, management, and public services.	Digital transformation is assessed as an organizational and managerial process rather than merely a technological outcome.	Ministry of Administrative and Bureaucratic Reform (2025)
Indonesia's EGDI (2024)	EGDI score = 0.7991; global rank = 64th; classified in the Very High EGDI category.	Indonesia has demonstrated substantial national progress in digital government, which must be translated into effective public service practices at the local government level.	UN DESA (2024)
Makassar SPBE Progress	Makassar's SPBE score increased from 3.41 (2023) to 4.02 (2024), achieving the <i>Very Good</i> category.	Makassar represents a local government that has made significant progress in digital government implementation; however, qualitative evidence is still needed to understand how	Antara News Makassar (2025)

these achievements are translated
into everyday public service
practices.

Source: Ministry of Administrative and Bureaucratic Reform (2026)

The data presented in Table 1 indicate that digital government transformation in Indonesia has progressed substantially at both the national and local levels. However, these indicators primarily reflect the maturity of institutional arrangements and do not fully explain how organizational capacity manages digital innovation in the day-to-day delivery of public services. Accordingly, further research is needed to connect institutional achievements with implementation dynamics at the organizational level and with citizens' experiences as service users. This phenomenon has attracted considerable attention in previous studies. Digital transformation is understood as an organizational change process that requires adjustments in governance, organizational culture, human resources, and public service design. Its success is therefore strongly influenced by leadership, regulatory frameworks, change management, and organizational readiness. From the perspective of organizational capabilities, successful digital transformation depends on an organization's ability to integrate technological capabilities, human resources, investment, and dynamic capabilities in responding to environmental changes (Edelmann et al., 2023). Other studies have shown that digital capabilities supported by organizational agility can significantly enhance innovation and organizational performance in the public sector (Sanduan et al., 2026).

Beyond organizational factors, digital leadership has emerged as a critical determinant of successful digital transformation. Gunawan et al., (2023), found that digital leadership positively influences organizational commitment and employee performance through the digital transformation process. Research on organizational innovation further demonstrates that employees' innovative behavior is shaped by the quality of leader-member relationships, an innovation-supportive climate, organizational trust, and continuous learning. These findings suggest that digital transformation requires not only technological investment but also leadership capable of fostering organizational adaptation and promoting continuous learning among public employees. Ultimately, the success of digital transformation is determined by citizens' experiences as public service users. Research on e-government indicates that citizens' acceptance of digital services is influenced by service quality, ease of use, security, privacy, and trust in government. At the same time, the digital inclusion perspective warns that digitalization may widen social inequalities when segments of the population lack internet access, digital devices, or the skills required to use electronic services (Nawafleh & Khasawneh, 2024). Therefore, successful digital transformation should not only improve administrative efficiency but also ensure inclusive, citizen-centered public services that strengthen public trust.

Although these studies have made important contributions, most have examined digital leadership, organizational capabilities, e-government adoption, service quality, or digital inclusion as separate constructs. Moreover, previous research has predominantly employed quantitative approaches to test relationships among variables, offering limited insight into how organizational capacity is developed, how public employees adapt to digital change, and how these processes shape citizens' service experiences within local government contexts. Consequently, a significant research gap remains regarding how innovation management capacity integrates leadership, organizational capabilities, employee learning, collaborative governance, and service quality into a coherent digital transformation process at the local government level.

To address this gap, the present study adopts the concept of *Innovation Management Capacity* as its primary analytical framework. Innovation management capacity is defined as the ability of public organizations to manage leadership, human resources, technology, work routines, coordination mechanisms, and organizational learning processes so that digital innovation can be implemented sustainably and produce effective, trustworthy, and inclusive public services. This perspective positions technology as one component of organizational transformation rather than the ultimate objective of

digital transformation. Accordingly, this study aims to examine how innovation management capacity supports the digital transformation of public services in local government through a case study of Makassar City. Specifically, the study addresses four research questions: (1) How does local government innovation management capacity support digital public service transformation? (2) How do public employees adapt to the implementation of digital services? (3) How do digital leadership, organizational capabilities, and collaborative governance shape the success of digital transformation? and (4) How does digital transformation affect service quality and public trust?

This study makes three main contributions to the digital public administration literature. First, it extends the understanding of digital transformation by conceptualizing it as a socio-technical innovation management process rather than merely the implementation of information technology. Second, it provides empirical evidence on hybrid service delivery practices, demonstrating the coexistence of digital and manual procedures in public service provision. Third, it links internal organizational capacity with citizens' experiences as service users, thereby offering a more comprehensive understanding of the factors that determine the success of digital transformation in local government. The findings are expected to provide practical insights for local governments seeking to strengthen organizational capacity in pursuit of integrated, human-centered, and inclusive digital public services.

2. Methodology

This research uses a qualitative approach with an exploratory case study design to deeply understand the digital transformation process of public services in regional government agencies (OPDs) in Makassar City. This approach was chosen because the implementation of digital public services is a phenomenon involving interactions between policy, organizational capacity, technology utilization, and the experiences of officials and the public in a real-world context. The research is grounded in a pragmatist paradigm that emphasizes understanding phenomena based on the practical consequences and effectiveness of policy implementation (Kaushik & Walsh, 2019). The unit of analysis is the Makassar City Government OPDs that have implemented digital-based public services. Informants were selected purposively based on their direct involvement in the planning, management, implementation, and utilization of digital services. Informants included structural officials, information system managers or administrators, service personnel, and the public as service users. The number of informants was determined based on the principle of data saturation, which occurs when the data collection process no longer yields new relevant information or themes.

Data collection was conducted using three techniques. First, semi-structured interviews were conducted to obtain information on digital leadership, organizational readiness, staff competency, inter-unit coordination, implementation constraints, and public perceptions of digital service quality. Second, observations were conducted on the service process to identify workflows, application usage, document verification mechanisms, interactions between staff and the public, and handling of technical obstacles during service delivery. Third, a documentation study was conducted on policy documents, standard operating procedures (SOPs), performance reports, meeting minutes, training documents, public complaint reports, service satisfaction survey results, and evaluation documents for the Electronic-Based Government System (SPBE). Furthermore, secondary data in the form of the SPBE index and the E-Government Development Index (EGDI) were used as context to position the development of the Makassar City Government's digital transformation at the national and international levels.

Table 2.
Data Sources and Their Roles in the Analysis

Data Source	Focus of Evidence	Examples of Empirical Indicators	Role in the Analysis
Semi-structured interviews	Digital leadership, organizational capacity, employee adaptation, and service users' experiences	Perceptions of system usability, inter-unit coordination, technical challenges, and problem-solving strategies	Generate the main analytical themes based on the perspectives of key actors
Service observations	Implementation of digital public services in practice	Application use, document verification procedures, staff-citizen interactions, and responses to system disruptions	Validate the consistency between observed practices and interview findings
Document analysis	Governance and policies for digital public service delivery	Standard Operating Procedures (SOPs), performance reports, SPBE documents, meeting minutes, complaint reports, and customer satisfaction survey results	Confirm implementation practices and support the interpretation of research findings
Contextual data	Status of digital transformation development	Makassar City's SPBE score, the national SPBE Index, and Indonesia's EGDI	Provide the broader macro-level context for interpreting the case study findings

Source: Processed by researchers (2026)

Data analysis was conducted using thematic analysis through several stages: data reduction, transcription of interview results, repeated reading, coding, grouping codes into main themes, and interpretation of the relationships between themes. Themes were analyzed by linking empirical findings to the concepts of public sector digital transformation, digital governance, and public service quality. The analysis was conducted iteratively so that the coding and theme formation process was continuously refined throughout the research. Data validity was maintained through source triangulation, method triangulation, and an audit trail. Source triangulation was carried out by comparing information from officials, service personnel, system managers, and service users. Method triangulation was carried out through comparisons of interview results, observations, and documentation studies. An audit trail was implemented by documenting the coding process, theme development, and data sources used so that the analysis process could be traced systematically. The research also considered ethical aspects through informed consent, anonymization of respondent identities, and the use of data solely for academic purposes.

3. Results and discussion

The findings reveal that digital transformation of public services in Makassar has developed substantially, yet the process has not reached a fully integrated end-to-end digital service model. Digital platforms, electronic procedures, and institutional initiatives have been established; however, their implementation continues to coexist with manual administrative practices, informal adaptation mechanisms, and fragmented coordination across organizational units. Based on interviews, observations, and document analysis, the study identifies four interconnected dimensions that explain the dynamics of digital transformation in local government: (1) digital transformation practices and

organizational adaptation, (2) leadership, governance, and innovation management capacity, (3) citizen experience, service quality, and digital inclusion, and (4) an integrated model of innovation management capacity for local digital transformation. These findings indicate that digital transformation in local government is not merely a technological transition but a socio-technical organizational process involving institutional capacity, human adaptation, governance arrangements, and citizen-oriented service design.

3.1 Digital Transformation Practices and Organizational Adaptation

The first finding demonstrates that digital transformation in Makassar has progressed through a gradual adaptation process rather than a complete replacement of conventional service mechanisms. Government agencies have implemented digital platforms to support public service delivery; however, the degree of digital integration varies among organizational units. Some units have adopted web-based service applications, while others continue to combine digital systems with manual administrative procedures. Observations of service processes indicate that digital and manual practices operate simultaneously. Employees continue to use physical registers, printed documents, and manual verification procedures as alternative mechanisms when digital systems experience disruptions. Interviews with service operators also revealed that data input is occasionally performed more than once because interoperability between applications remains limited. In several service locations, employees were observed using multiple applications or screens to process internal administrative requirements and citizen-facing services.

This condition demonstrates that digital transformation has reached the stage of procedural digitalization but has not yet achieved full organizational integration. The continued existence of manual procedures does not necessarily indicate organizational resistance toward digitalization. Instead, these practices function as adaptive mechanisms that maintain service continuity when technological systems are unstable. However, parallel digital and manual processes also generate additional workloads, increase administrative complexity, and reduce the efficiency benefits expected from digital transformation. This finding supports previous studies emphasizing that digital transformation requires organizational change beyond technological implementation. [Maheshwari et al., \(2025\)](#), argue that successful digital transformation depends on governance arrangements, organizational readiness, leadership commitment, and change management capacity. The highlight that digital transformation requires organizations to integrate technological resources, human capabilities, and dynamic capabilities to respond effectively to changing environments.

From the perspective of innovation management capacity, the hybrid service model reflects an organization that has developed adaptive capability but has not yet achieved full digital maturity. The ability to maintain service delivery through manual fallback mechanisms demonstrates organizational resilience. However, sustainable transformation requires stronger interoperability, integrated service architecture, and standardized digital workflows across organizational units. In addition to technological adaptation, employee learning processes represent an important dimension of organizational transformation. The findings indicate that employee adaptation occurs largely through informal learning mechanisms. Employees frequently rely on peer mentoring, internal communication groups, personal operational notes, and experiential learning to overcome challenges associated with digital systems.

Differences in digital competency were observed among employees. Younger employees generally demonstrated faster adaptation, whereas senior employees required more assistance during the transition process. Although formal training programs were available, documentary evidence suggests that continuous digital capacity development remains limited. Consequently, much of the adaptation process depends on daily interaction and knowledge exchange among employees. This finding illustrates the importance of organizational learning capability in digital transformation. Informal learning networks enable organizations to maintain operational continuity and solve emerging problems. This supports [Lecic et al. \(2023\)](#), who emphasize that innovative behavior among employees is influenced by organizational

climate, trust, and supportive relationships among colleagues. Nevertheless, dependence on informal learning also creates challenges. Knowledge acquired through experience is often undocumented and unevenly distributed, resulting in variations in digital competency among employees. Therefore, local governments need to transform informal learning practices into structured knowledge management systems through continuous training, digital competency frameworks, operational guidelines, and communities of practice among service operators.

3.2 Leadership, Governance, and Innovation Management Capacity

The second finding highlights the central role of leadership and governance mechanisms in shaping the success of digital transformation. Leaders within the studied organizations actively support digital implementation through monitoring activities, routine evaluations, and coordination with technical units responsible for information systems. Interviews indicate that leaders frequently review digital service performance through operational reports, system monitoring, and internal discussions. When technical problems occur, leaders facilitate communication between service units and information technology providers to ensure service continuity. These practices demonstrate that leadership commitment has become an important driver of digital adoption. This finding aligns [Qiao et al., \(2024\)](#), who demonstrate that digital leadership contributes positively to organizational commitment and employee performance through digital transformation processes. Leaders play an important role not only in promoting technology adoption but also in creating organizational conditions that encourage employees to engage with digital changes.

However, the findings also reveal limitations associated with hierarchical bureaucratic structures. Although leaders encourage digital implementation, employees often remain dependent on formal approval before modifying service procedures or introducing operational improvements. This indicates that leadership has strengthened compliance with digital policies but has not fully encouraged employee empowerment and innovation. The study also identifies organizational capability constraints that influence digital transformation outcomes. These include limited technological devices, unstable network infrastructure, incomplete system integration, and insufficient technical support mechanisms. These challenges demonstrate that digital transformation requires more than leadership commitment; it requires organizational capabilities that allow employees to effectively use and improve digital systems. Furthermore, governance coordination remains an important challenge.

Although cross-unit discussions regarding system integration and service improvement have occurred, collaboration remains relatively fragmented. Coordination is often conducted reactively when problems emerge rather than through proactive planning and shared digital governance mechanisms. These findings suggest that innovation management capacity in local government emerges from the interaction between leadership, organizational capability, and collaborative governance. Digital leadership must therefore evolve from a supervisory approach toward an enabling approach that encourages experimentation, knowledge sharing, and employee participation in redesigning service processes.

3.2 Citizen Experience, Service Quality, and Digital Inclusion

The third finding concerns the extent to which digital transformation improves citizens' experiences of public services. The results indicate that digitalization has generated positive impacts, particularly in improving initial access, registration procedures, and queue management. Citizens reported that online registration reduced the need to physically visit service offices at early stages of the process. Digital platforms provided greater convenience by allowing users to access information and initiate applications remotely. However, these benefits remain limited because several service processes still require direct physical interaction. Observations revealed that citizens continue to visit service offices for document verification, signature requirements, data correction, or assistance in completing

digital procedures. Some users required support from service officers to complete online forms, upload documents, or adjust digital file formats.

These findings indicate that digital transformation has improved the front-end dimension of public services but has not yet achieved complete end-to-end digital delivery. Citizens experience a mixed service environment in which digital access is improved, but administrative processes remain partially dependent on physical procedures. This finding supports previous research on e-government adoption, which emphasizes that citizen acceptance of digital services depends on service quality, usability, security, privacy, and trust in government institutions (Aleisa, 2024). In this study, citizens' satisfaction increased when digital services reduced waiting time and simplified access, but satisfaction decreased when users were still required to return to service offices after completing online procedures.

The findings also demonstrate the importance of digital inclusion. The continued need for assistance indicates that not all citizens possess equal digital skills, access to devices, or familiarity with electronic services. This supports Mhlongo & Dlamini (2022), who argue that digital transformation may increase inequality when technological access and digital literacy are unevenly distributed. Therefore, citizen-centered digital transformation requires more than developing digital platforms. Local governments need to map citizen service journeys, simplify digital interfaces, maintain assistance mechanisms, and ensure that vulnerable groups are not excluded from accessing public services.

3.4 Toward an Innovation Management Capacity Model for Local Digital Transformation

The integrated analysis demonstrates that digital transformation capacity in local government is shaped by the interaction between technology, organizational capability, leadership, governance, and citizen experience. The findings suggest that innovation management capacity functions as an integrative mechanism that determines whether digital initiatives can be transformed into sustainable improvements in public service delivery. The Makassar case shows that digital transformation begins with the availability of digital policies and platforms but depends on organizational capacity to operationalize these resources. Leadership commitment, employee adaptation, knowledge sharing, infrastructure readiness, and collaborative governance determine whether digital systems generate meaningful improvements.

The study proposes that innovation management capacity consists of three interconnected processes. First, digital policies and technological platforms provide the foundation for transformation. Second, organizational learning, leadership, and governance mechanisms determine the ability of institutions to adapt and institutionalize digital practices. Third, citizen experience and service outcomes determine whether transformation creates public value.

Table 3.
Conceptual Model of Innovation Management Capacity in Local Digital Transformation

Initial Element	Direction of Relationship	Main Process	Outcome
Digital policies and service platforms	→	Development of innovation management capacity through organizational adaptation	Hybrid digital service transformation
Leadership, employee capability, and inter-unit coordination	→	Organizational learning, knowledge sharing, and problem-solving processes	Improved service quality and institutional capability
Infrastructure reliability, system integration, and digital literacy	→	Enabling or constraining conditions for transformation	Inclusive and sustainable digital public services

Source: Processed by researchers (2026)

Overall, this study contributes to digital public administration literature by demonstrating that successful digital transformation depends not only on technological adoption but also on the capacity of public organizations to manage innovation processes. Digital government maturity should therefore be evaluated not only through institutional indicators and technology availability but also through the ability of organizations to integrate people, processes, technology, and citizen needs into sustainable public service transformation.

4. Conclusion

This study concludes that digital transformation of public services in local government is not merely a process of technological adoption but a complex and gradual organizational transformation. The findings from Makassar demonstrate that the availability of digital platforms and formal policies represents only the initial stage of transformation. In practice, digital service implementation continues to operate through a hybrid model that combines electronic systems with manual administrative procedures. This condition indicates that innovation management capacity has been developed but remains constrained by limited system integration, cross-unit coordination, and operational readiness. The study further reveals that organizational adaptation plays a critical role in sustaining digital transformation. Public employees adapt to digital changes primarily through informal learning mechanisms, peer mentoring, and daily problem-solving practices, while leadership contributes through monitoring, coordination, and facilitation of technical problem resolution. However, strengthening digital transformation requires a shift from individual-based adaptation toward institutionalized organizational learning and knowledge management systems.

From the citizens' perspective, digital transformation has improved accessibility, particularly in the initial stages of service delivery, such as registration and queue management. Nevertheless, the persistence of manual verification procedures and differences in digital literacy indicate that digital transformation has not yet fully achieved inclusive end-to-end public services. Therefore, digital government initiatives must balance efficiency objectives with citizen-centered design and equitable access. The main contribution of this study is the conceptualization of digital transformation as a socio-technical innovation management process. The findings demonstrate that digital platforms alone do not generate meaningful transformation unless supported by organizational capabilities, adaptive leadership, employee learning, collaborative governance, and inclusive service design. By applying the perspective of innovation management capacity, this study expands the understanding of digital government transformation beyond technological maturity toward the organizational capabilities required to sustain public service innovation.

Future research should examine digital transformation across multiple local governments with different levels of digital maturity to enable comparative analysis. Further studies may also employ mixed-method approaches to quantitatively examine relationships between digital service quality, citizen satisfaction, trust in government, and organizational performance. Longitudinal research is also needed to understand how organizational practices evolve as system integration improves. In addition, future research should explore emerging challenges related to data security, privacy protection, digital workload among public employees, and strategies for strengthening digital literacy among citizens.

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