Research Article

E-Government and Digitalization as Catalysts for Organizational Transformation and Public Service Efficiency in Indonesian Local Governments

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Abstract.

Digital transformation in Indonesian local government plays a crucial role in improving the efficiency and accountability of public services. The implementation of e-government, which integrates information technology into government systems, has significant potential to streamline bureaucratic processes, expedite decision-making, and improve interaction between the government and the public. However, despite this great potential, significant barriers remain, such as the digital divide, limited infrastructure, and the lack of digital literacy, especially in less developed areas. Using a literature review methodology, this study aims to identify and analyze the relationship between digitalization, organizational design of local government agencies, and public service efficiency. The findings of this study indicate that the success of e-government implementation heavily depends on the development of digital infrastructure, human resource capacity, and the alignment of organizational structures at the regional level. The study also identifies gaps in e-government implementation caused by unequal digital access and emphasizes the importance of organizational reform to maximize the benefits of digital transformation. This research contributes by providing deeper insights into the challenges and opportunities faced by local governments in digitalization and offers recommendations for improving public service efficiency in Indonesia.

Keywords: E-government, digital transformation, organizational design, public service efficiency, local government, digital divide, bureaucratic reform, digital infrastructure, HR capacity, responsive governance

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1. Introduction

Public Digital transformation in Indonesian local governments has become an urgent need to improve the quality of public services that are faster, more efficient, and transparent. As information technology continues to evolve, many countries, including Indonesia, have begun to adopt e-government systems as a primary approach to managing government operations. E-government, or electronic governance, utilizes information technology to expedite government administration, enhance service accessibility, and increase public participation in decision-making. Digital technology has become

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Page 1156

a driving force in modern governance transformation, characterized by the reduction of convoluted bureaucracies and the simplification of previously time-consuming and resource-intensive administrative procedures.

However, despite the great potential of e-government to improve the efficiency and transparency of public services, several significant challenges still hinder its implementation across regions, particularly in more remote areas. These challenges include the digital divide, where regions with limited technology infrastructure cannot access e-government services effectively; infrastructure limitations, where the internet and necessary devices to support e-government implementation are still scarce in many areas; and low digital literacy, which makes it difficult for both the public and government employees to utilize digital technology for public administration purposes.

According to the OECD report (2017), although Indonesia has made significant progress in the digitalization of the government sector, particularly at the central government level, the gap between major cities and remote areas remains substantial. The 2020 E-Government Survey ranked Indonesia 101st out of 193 countries in terms of digital government readiness (UN, 2020). This shows that although there has been progress, e-government implementation is far from optimal, and many regions are yet to fully take advantage of this technology for public service delivery.

At the national level, the Ministry of Administrative and Bureaucratic Reform (PANRB) of Indonesia has initiated various policies to encourage the implementation of e-government, as reflected in the National Medium-Term Development Plan (RPJMN). The RPJMN emphasizes the importance of utilizing digital technology to support improved public service quality and government accountability. However, these policies have not been fully implemented well in regions with limited access and human resources skilled in information technology.

This context is even more relevant given the digital transformation challenges faced by many local governments in Indonesia. One of the biggest obstacles is the organizational structure, which tends to be rigid and hierarchical, not flexible enough to fully support digitalization. Bureaucratic reform, involving organizational restructuring and human resource development, is critical to ensuring effective e-government implementation. The gaps in human resource capacity, especially in technology usage, are also a major barrier, as the success of e-government heavily relies on the competencies and skills of government personnel in utilizing this technology.

This topic is highly relevant as government digitalization not only has the potential to reduce the cost and time involved in delivering public services but also to increase transparency and accountability in governance. The implementation of e-government allows the government to expedite services to the public, enhance public participation, and improve the quality of services provided. Therefore, studying the relationship between digitalization, organizational design of local government agencies, and public service efficiency is an essential step toward improving local government performance and addressing challenges in the digital era.

This research is expected to contribute significantly to the development of knowledge, particularly in the field of public administration and digital governance. Furthermore, the results of this research can provide practical solutions to problems faced by local governments, especially regarding the more equitable and effective implementation of e-government. By analyzing how digitalization and organizational restructuring can accelerate the necessary changes in public service efficiency, this research aims to offer new insights for policymakers, public administration practitioners, and the wider community.

2. Literature Review

2.1. Relevant Key Theories

In this study, several key theories are used to underpin the analysis of digitalization in local government and its impact on organizational design and public service efficiency.

The E-Government Theory (Heeks, 2003) asserts that e-government aims to enhance transparency, accountability [1], and public participation through information and communication technology (ICT). Heeks emphasizes that while the implementation of e-government holds significant benefits, there are still major challenges such as the digital divide in regions with limited technological access. This is evidenced by findings suggested by the OECD (2017) and the UN (2020), which show that although Indonesia has made significant progress in digital government readiness, the gap between large cities and remote areas remains substantial. As Heeks (2003) explained, limited access to technology slows down the full implementation of e-government in local governments, which still require further development of digital infrastructure[1].

The New Public Management (NPM) Theory (Osborne & Gaebler, 1992) focuses on optimizing efficiency, accountability, and transparency in the public sector [2]. NPM

encourages the adoption of managerial principles from the private sector in government to improve performance through the effective use of technology. The emphasis on results-based performance and technological innovation is highly relevant in the context of e-government implementation in Indonesia. In line with NPM, Morgeson & Mithas (2016) found that digital transformation in the public sector can bring about significant changes in organizational performance [3], but this transformation requires managerial capabilities to effectively utilize digital technology.

The Bureaucratic Reform Theory (Hood, 1991) suggests that structural changes within public organizations are essential to increase efficiency and responsiveness to public needs [4]. In the implementation of e-government, changes in bureaucratic structure are crucial to ensure that digitalization functions not only technically but also effectively in improving public services. Kettunen & Kallio (2020) support this argument, showing that overly hierarchical organizational structures can hinder e-government implementation [5], while more flexible and adaptive organizations tend to succeed better in adopting digital technologies.

2.2. The Impact of Digitalization on Local Government Organizational Design

Digitalization brings profound changes to the structure and design of organizations in local governments. Kettunen & Kallio (2020) explain that organizational restructuring is often necessary to support the implementation of new technologies in local government [5]. However, the rigid and hierarchical bureaucracy in many local governments poses a major obstacle to digitalizing government processes. The OECD (2017) and Panda & Leepsa (2017) note that digital governance requires organizations to be more open, flexible, and well-structured to facilitate the flow of information and data-driven decision-making [6].

A study by Van de Walle & Van Dooren (2018) shows that the impact of digitalization on organizational design is significant in creating a more responsive government [7]. Therefore, it is important for local governments to restructure their organizations to adapt to technology in order to improve public service quality. Hood (1991) suggests that organizations that have implemented bureaucratic reform can be more effective in adopting digital technology [4], as they have reduced complex bureaucracy and improved responsiveness to public needs.

2.3. Challenges in E-Government Implementation

The main challenges in implementing e-government in Indonesia are infrastructure gaps and the development of adequate human resources. The OECD (2017) reveals that one of the biggest challenges in e-government implementation is limited internet access and inadequate hardware availability in many remote areas, hindering local governments from utilizing digital technologies to improve public service quality.

Infrastructure Gap: The uneven digital infrastructure in Indonesia exacerbates barriers in e-government implementation. The OECD (2017) notes that limited internet access in geographically challenging areas significantly impacts the quality of e-government services provided by local governments. Without equitable infrastructure development, digitalization in local governments will not reach its full potential. The UN (2020) emphasizes that strong and equitable infrastructure is a key element in ensuring that e-government functions well and inclusively across Indonesia.

Human Resource Development: Local government human resources often lack the necessary digital skills to manage new technologies. Kettunen & Kallio (2020) state that technical competency and the existing capacity of human resources are critical to the success of e-government implementation [5]. Therefore, training and the development of digital competencies are essential to ensure more effective technology management in local governments. Amaliah et al. (2023) show that enhancing human resource capacity through ongoing training can accelerate e-government adoption and improve public service quality [8].

Additionally, cultural challenges within organizations need to be considered. Panda & Leepsa (2017) and Morgeson & Mithas (2016) highlight that changes in organizational culture to be more open and responsive to technology are crucial to creating a more efficient and data-driven government [6] [3].

3. Research Methodology

This study uses a literature review methodology, which aims to explore and analyze various relevant sources of literature related to the topic discussed: the impact of digitalization and e-government on organizational design of local government agencies and public service efficiency in Indonesia. A literature review approach was chosen because it provides an in-depth understanding of key concepts in digital governance,

bureaucratic reform, and e-government implementation in the public sector, utilizing secondary data sources from previous studies.

4. Results and Discussion

4.1. The Impact of E-Government on Public Service Efficiency

Based on the literature review, the implementation of e-government significantly contributes to improving public service efficiency. For example, Panda & Leepsa (2017) state that e-government allows for the reduction of operational costs and faster response times in delivering services to the public [6]. The OECD (2017) supports this finding by showing that digital government has the potential to expedite public services, reduce long bureaucracies, and improve transparency and accountability. In Indonesia, although e-government has been implemented in sectors such as taxation and population administration, the digital divide remains a major obstacle in many regions. The UN (2020) notes that Indonesia still faces significant issues related to uneven internet access, especially in remote areas.

Despite this, the implementation of e-government can bring about significant changes by reducing costs and improving efficiency, but the challenge lies in accessibility and digital infrastructure limitations. Heeks (2003) argues that the limited digital infrastructure in more remote areas is the biggest challenge in fully implementing e-government [1]. Geographically isolated regions still rely on traditional infrastructure, reducing the potential benefits of digital technology, which should speed up administrative processes. Schuppan (2009) also notes that the lack of hardware and internet connectivity poses a major barrier to effective technology adoption in local government [9].

As a solution, Amaliah et al. (2023) propose that local governments focus more on building digital infrastructure across all of Indonesia. Without adequate internet access, e-government cannot be effectively implemented, and the goal of accelerating public services through digitalization will not be achieved.

4.2. The Impact of Digitalization on Local Government Organizational Design

The implementation of e-government not only affects technical aspects but also brings significant impacts on the structure and design of local government organizations.

Kettunen & Kallio (2020) emphasize that organizational restructuring is crucial to supporting the implementation of new technologies in governance [5]. Governments that are overly hierarchical and rigid in their organizational structure often struggle to adopt e-government systems, which require more flexibility and quicker adaptation. Hood (1991) suggests that bureaucratic reform is essential in creating a more responsive and effective government, especially in the digital era [4].

The New Public Management (NPM) theory introduced by Osborne & Gaebler (1992) forms the basis for many e-government implementations worldwide, including in Indonesia [2]. NPM focuses on results-based management, prioritizing efficiency, accountability, and transparency in the public sector. In this context, the organizational structure of government needs to align with these principles to effectively support digitalization. Morgeson & Mithas (2016) highlight the importance of structural changes in organizations to support e-government implementation [3]. Flexible organizations that are responsive to technology can enhance the efficiency and quality of public services provided to the community.

However, as Panda & Leepsa (2017) explain, the biggest barrier to implementing these structural changes is the organizational culture, which is often rigid [6]. In many regions, bureaucratic structures based on traditional approaches are difficult to change. Therefore, this transformation requires considerable time and full support from policymakers and organizational leaders. Kettunen & Kallio (2020) add that e-government implementation requires organizational adjustments to be more open to change and ready to adapt to the evolving digitalization needs [5].

4.3. Challenges in E-Government Implementation

The main challenges faced in implementing e-government are the digital divide and infrastructure limitations in Indonesia. The OECD (2017) reveals that one of the greatest challenges in e-government implementation is limited internet access, which causes regions in Indonesia to struggle to access the digital services provided by the government. The UN (2020) notes that despite Indonesia's increasing readiness for digital governance, more remote regions still face limitations in broadband internet access, which hinders the effective implementation of e-government.

Additionally, human resource development is a key issue in e-government implementation. Kettunen & Kallio (2020) show that technical competence of government employees significantly impacts e-government success. Without adequate training and digital

skills improvement for government employees, e-government implementation will face operational difficulties [5]. Panda & Leepsa (2017) also note that human resource skills in using digital technology are essential to support e-government implementation [6]. Without the development of human resource capacity, local governments will struggle to operate new digital platforms effectively.

Solutions to this challenge, according to Amaliah et al. (2023), involve enhancing human resource capacity through ongoing training focused on mastering digital technologies and using e-government platforms [8]. In addition, equitable development of digital infrastructure and collaboration between the public and private sectors, as suggested by Schuppan (2009), are essential steps to ensure that e-government implementation is not hindered by technological limitations [9].

5. Conclusion

This study examines the impact of digitalization and e-government on the organizational design of local government agencies and public service efficiency in Indonesia. Based on the literature analysis, e-government can improve public service efficiency by reducing operational costs, speeding up response times, and enhancing accessibility for the public. However, the digital divide, infrastructure limitations, and lack of human resource competencies are major obstacles to its implementation, especially in remote areas.

Moreover, e-government implementation requires organizational restructuring to create more flexible and adaptive structures for technological change. Bureaucratic reform is needed to ensure that organizational structures can effectively support technology implementation. Digital education and training for government employees are essential for e-government success.

To ensure the success of e-government, collaboration between the public and private sectors, human resource capacity development, and equitable digital infrastructure development are needed. With these steps, e-government can improve accountability, transparency, and public service efficiency in Indonesia. This research makes an important contribution to the digital transformation of local government and suggests strategic steps to address existing challenges.

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