



Research on the Influencing Factors of Digital Transformation of Local Governments

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Abstract. The digital transformation of local governments is a crucial approach to enhancing governance efficiency. Using Nvivo 15 software and the grounded theory method, this paper analyzes 55 digital government policy documents issued by central and local governments over the past five years. The analysis identifies 3 core categories, 6 main categories, and 16 initial categories. Key findings reveal that action strategies, including digital technology management and strategy layout, aim to improve governance capacity and service levels. Institutional structures, comprising digital institutional guarantees and government systems, provide a robust foundation for transformation. Guarantee factors, such as digital thinking and resource allocation, ensure the implementation and advancement of digital initiatives. The paper concludes with policy recommendations to support the digital transformation of governments at all levels.

Keywords: digital transformation; Local government; Grounded Theory

1 Introduction

In 2015, General Secretary Xi Jinping emphasized national digital transformation through the “Internet Plus” action plan. By 2017, “Digital China” became a strategic goal to build a strong cyber nation, digital society, and smart economy. In 2023, a national digital development plan guided local governments to innovate and reform governance and public services. This article examines the key factors influencing local governments’ digital transformation, crucial for enhancing governance, optimizing services, and achieving high-quality development. Using grounded theory, the study analyzes policy documents to identify core variables driving or constraining transformation, exploring action strategies, institutional structures, and security factors. The research develops a theoretical model that reveals internal mechanisms and external drivers, providing a foundation and practical guidance for local governments to improve governance and services, boosting modern governance capabilities.

2 Research Process

This paper identifies the factors influencing local government digital transformation through three-level coding. Open coding forms the foundation for subsequent axial and selective coding. It extracts 25 subcategories by organizing and summarizing statements related to digital government. Axial coding classifies and connects the open codes to form higher-level categories, resulting in 7 subcategories and 3 main categories(see Table 1). Selective coding identifies the core category and integrates related categories around it to construct a theoretical model. A comparative analysis of the main categories identifies three core categories, which are used to summarize the relationships between elements and create a theoretical model diagram(see Figure 1).

Table 1. Core categories and their corresponding main categories

Serial Number	Core category	Main category
1	Action Strategy	Digital technology management; Digital Strategy Layout
2	Institutional structure	Digital system guarantee; Digital government system
3	Guarantee factors	Driven by digital thinking; Digital resource allocation

3 Theoretical Analysis Framework of Digital Transformation of Local Governments

Based on the analysis results of grounded coding, the seven main categories were classified in sequence to construct the theoretical model of this article, as shown in Figure 1. This model emphasizes the comprehensive influence of six conditions on the digital transformation of local governments in China: digital technology management and digital strategic layout at the action strategy level, digital institutional guarantee and digital government system at the institutional structure level, digital thinking driven at the guarantee factor level, and digital resource allocation.



Fig. 1. Theoretical Model Diagram

3.1 Action Strategy: An Action Plan for the Digital Transformation of Local Governments

In the process of digital transformation of local governments, the "action strategy" refers to the specific steps, means and implementation methods developed to achieve the digital goals. Action strategies ensure that digital transformation is not only at the policy and institutional level, but is actually implemented through concrete implementation plans. The dissertation includes two parts: digital technology management and digital strategic layout.

3.1.1 Incorporating Case Studies or Real-World Examples.

The development of action strategies can benefit from studying successful cases of digital transformation implemented by local governments. For instance, the city of Hangzhou in China has pioneered the use of a 'City Brain' system, which integrates big data, artificial intelligence, and cloud computing to enhance urban governance. By breaking down information silos between departments, the system has improved traffic management, reduced congestion, and increased emergency response efficiency. Another example is Shenzhen, where the government established a unified data-sharing platform to facilitate inter-departmental collaboration and optimize public services. This platform enables seamless data exchange between departments, significantly improving service delivery efficiency and transparency. These cases demonstrate that a well-executed strategic layout, combined with advanced digital technologies, can greatly enhance governance efficiency and citizen satisfaction.

3.2 Institutional Structure: The Supporting Cornerstone of the Digital Transformation of Local Governments

In the digital transformation of local governments, the "institutional structure" is the supporting cornerstone of the transformation, ensuring that the digital transformation has a stable institutional environment and regulatory framework. The institutional structure provides the necessary organizational, regulatory, and resource support for digitalization, making the transformation process more standardized and orderly. The paper includes two parts: digital system guarantee and digital government system.

3.2.1 Exploring the Role of Public-Private Partnerships and International Collaboration.

Public-private partnerships (PPPs) and international collaborations are key to local governments' digital transformation. PPPs allow governments to access private sector expertise, funding, and technologies, accelerating digital projects like smart city initiatives. These partnerships reduce financial strain and provide innovative solutions. Similarly, international collaborations offer opportunities to learn from successful models, such as Estonia's e-governance system and Singapore's Smart Nation initiative. By adapting these best practices, local governments can ensure a more inclusive and sustainable digital transformation.

3.3 Safeguard Factor: The Driving Force for the Digital Transformation of Local Governments

In the digital transformation of local governments, "safeguard factors" refer to the driving forces and key supporting conditions to ensure the smooth progress of the transformation, which provide the necessary motivation and resource support for digital transformation and stimulate the government's motivation to actively promote digital work. The paper includes two parts: digital thinking drive and digital resource allocation.

3.3.1 Ethical Implications of Data Usage and Digital Surveillance.

While digital transformation improves governance efficiency, it raises ethical concerns about data usage and surveillance. Governments must balance data-driven decision-making with protecting citizen privacy. Personal data collection should be governed by transparent regulations on storage, sharing, and processing, fostering public trust and legal compliance. Additionally, digital surveillance tools must be used solely for public safety and governance, with clear boundaries to prevent misuse. Independent regulatory bodies and regular ethical audits can ensure accountability and protect citizens' rights during the transformation process.

4 The Digital Transformation and Optimization Path of Local Governments

4.1 Addressing Challenges in Implementing Digital Transformation Policies

Digital transformation policies face challenges, including resistance from officials due to limited digital knowledge or fear of disrupting workflows. Government-led initiatives, such as training, workshops, and incentives, can address this. Additionally, the lack of digital skills among employees requires systematic training programs to enhance practical skills and strategic thinking, ensuring smoother policy implementation and efficient service delivery.

4.2 Improve the Action Strategy for Digital Transformation and Build a Collaborative Innovation Digital Ecosystem

Local governments should break down information silos through cross-departmental and cross-industry collaboration, creating a unified data platform and standards for seamless integration of digital services[1]. Technology applications must prioritize data security and privacy protection. Local governments should strengthen supervision to ensure compliance and prevent misuse. The goal of digital governance is to enhance governance through technology, with the integration of digital technology and governance being its highest form. The main task is to plan for "smart governance[2]." Digital strategies should emphasize regional coordination, resource sharing, and building digital alliances. Local governments should collaborate with other regions, learn from

domestic and international digital transformation experiences, and form innovation networks to improve the efficiency and quality of the transformation[3].

4.3 Improve the Institutional Structure of Digital Transformation, Strengthen Institutional Guarantees and System Construction

In the digital transformation of local governments, strengthening organizational structure and management reform is essential to improve decision-making efficiency.[4]. A standardized management system and a robust institutional structure are key to ensuring an orderly transformation. Local governments should enhance laws and regulations, particularly on data security, privacy protection, and digital governance, to mitigate risks like data leakage and provide legal support for digital transformation. Policies should be flexible and forward-looking to keep up with rapid technological developments. Collaboration across sectors, especially in digital innovation and data sharing, is also vital. Establishing cross-industry and cross-regional cooperation can integrate resources, promote joint efforts between government, enterprises, and social organizations, and enhance the efficiency and sustainability of the transformation. [5].

4.4 Enhancing the Nature of Security Factors and Promoting Dual Optimization of Digital Thinking and Resource Allocation

Local governments should cultivate digital thinking among all employees, encourage them to possess systematic thinking abilities, and examine problems in government governance from a broader perspective, especially the possibility of solving complex problems through digital means[6]. Local governments must focus on the efficient allocation of digital resources, including fiscal funds, technology, and talent. They should optimize budgets for digital transformation projects, collaborate with leading tech companies for stable infrastructure, and invest in training while attracting strategic and innovative talent. Proper resource allocation ensures smooth digital transformation and promotes the comprehensive development of the local economy and society[7].

5 Research Conclusion

This paper analyzes policy texts (2020-2024) to develop a theoretical model of local government digital transformation, focusing on “action strategy-institutional structure-guarantee factors.” Key findings include: 1. Action strategies combining digital technology management and strategic planning are crucial. 2. Digital institutional guarantees and government systems provide operational guidelines. 3. Guarantee factors like data-driven decision-making and resource allocation support the shift to data-centric governance, ensuring efficient use of technology, talent, and funds..Future research could explore region-specific challenges, ethical dimensions of data governance, and the long-term societal impacts of digital transformation. Comparative studies of international cases like Estonia and Singapore could provide valuable insights for developing more inclusive frameworks.

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