

# A Bibliometric Study of Digital Government in Domestic and Foreign Area

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**Abstract:** The digital government is supported by emerging information technology, with an integrated online government service platform as the carrier, through the all-round and systematic reform of the government, to achieve a new government operation model of precise governance and efficient service, which is one of the main contents of the construction of digital China. This paper adopts bibliometric method and comparative analysis method to analyze the theoretical connotation and construction practice of digital government at home and abroad, in order to provide reference for the related construction.

**Keywords:** Digital Government, Government Services, Digital Talents.

## 1. Introduction

The upgrading of digital technology has profoundly affected all aspects of social and economic life. Digital currency, digital economy, one-stop service, remote interaction, etc., have also brought significant changes to the field of public management. In particular, the outbreak of COVID-19 has accelerated the trend and process of digitalization of the global public administration. In 2019, the "Decision" of the Fourth Plenary Session of the 19th Central Committee of the Communist Party of China clearly proposed "promoting the construction of digital government" for the first time, and included the construction of digital government as an important component of upholding and improving the socialist administrative system with Chinese characteristics. The "14th Five-Year Plan" in 2021 also proposes to "accelerate the construction of a digital economy, a digital society, and a digital government, to drive the evolution of production methods, lifestyles and governance methods as a whole with digital transformation."

Digital government, or government digitization, is supported by emerging information technology, with an integrated online government service platform as the carrier, through the all-round and systematic reform of the government, to achieve a new government operation model of precise governance and efficient service, which is one of the main contents of the construction of digital China. In the past 20 years, the formulations of digital government at home and abroad have been relatively scattered, mainly including e-government, e-governance, electronic government, electronic governance, digital government [1], digital governance [2], government digitalization/digitalization, and digitizing government. The European Commission points out that e-government is the predecessor of digital government [3], and digital government is an extension and reshaping of e-government, of which the difference lies in the underlying technology and development era. The United Nations also attaches great importance to the construction of government digitalization, and regards it as an effective solution to help decision-making and the sustainable development of public services. Since 2001, it has issued a global e-government survey report every two years. The 2020 report shows that online government services have changed from single to

multiple, from offline to online, from management to service, and from single-department to cross-level and multi-departmental collaboration. Among the 193 countries surveyed, more than 80% of the countries can provide no less than one online government service transaction. Online government services of China have grown linearly since 2010, and the online service index has climbed to 0.906, ranking ninth in the world [4]. In the new era, entry into an all-round well-off society of China, the digital transformation of the government has also ushered in new challenges and opportunities. How to build a digital government more scientifically, long-term, and efficiently to ensure smooth entry into governance modernization and the implementation of the network power strategy in China has become a new research topic of the era.

## 2. Research Status of Digital Government in Foreign Area

From a global perspective, the construction of digital governments in developed countries (represented by Denmark, the United Kingdom, France, the United States, Singapore, and Australia) started early, and the industry and academia have also explored deeply. The research mainly includes three aspects: digital government development planning strategies of various countries, practical experience of digital government construction, and analysis of key elements affecting the success or failure in digital government construction.

### 2.1. Digital Government Development Planning Strategies of Various Countries

Typical representatives include Denmark's "Digital Strategy 2016-2020", the UK's "Government Digital Strategy", and South Korea's "Digital Government Innovation Promotion Plan" (2019), etc. (shown in Table 1).

**Table 1.** Digital Government Development Planning Strategies of Various Countries

Country	Strategy Planning	Goals
Denmark	Digital Strategy 2016-2020	Use public sector data as an enabler for growth, so as to build a flexible, adaptable society and a safe digital Denmark
Australia	Government Digital Transformation Strategy 2018-2025	Establish life-long and personalized government services for the entire Australian public, to meet the needs of the public and businesses; Build Australia into one of the world's three leading digital governments by year 2025
the United Kingdom	Government Transformation Strategy (2017-2020)	Accelerate the promotion of British government digital services; Emphasize the concept of "digital government as a platform"; Promote the construction of shared platforms cross-sectors of government, thus to improve the efficiency of government digital services, as well as the relationship between the public and the government
Sweden	Digital Strategy: Sweden's Sustainable Digital Transformation (2017)	Make Sweden a leader in digital transformation through improvements in digital skills, digital arrangements, digital innovation, digital leadership, and digital infrastructure
Singapore	Smart Nation 2025 Plan (2015-2025)	Strengthen physical infrastructure and connectivity, improve people's livelihood and increase cooperation opportunities through digital leading
New Zealand	Digital Economy Work Plan	Cover many key areas of digital transformation to ensure that key initiatives and innovation progress in the required areas are kept in the spotlight by communities
France	Promoting Act Plan for Building a Digital Nation	Realize 100% paperless public services by 2020, and facilitate the digital transformation of public services
America	Digital Government: Building a 21st Century Platform to Better Serve the American People	Reduce innovation costs with new technologies and enable citizens to access high-quality digital government information and services anytime, anywhere
South Korea	Digital Government Innovation Promotion Plan (2019)	Adapt to the digital transformation trend dominated by cutting-edge information and communication technologies such as artificial intelligence and cloud computing, improve work efficiency, and improve the efficiency of existing digital government services

## 2.2. Practical Experience of Digital Government Construction

McNeal et al. [5] conducted a study on the differences in digital government construction and public acceptance among states in the United States. The results show that digital government is closely related to legislation and technical support, rather than being driven by user needs. Kannabiran's [6] research on the digital construction of the Indian government found that digital transformation can effectively improve administrative governance capabilities, but there are still problems such as insufficient support and technical bottlenecks. Based on the extensive case study of the Mexican federal government, Luna et al. [7] propose that information integration cross-organizational is necessary, and discuss in depth how to overcome obstacles to achieve a collaborative digital government with cross-agency information integration.

## 2.3. Analysis of Key Elements Affecting the Success or Failure in Digital Government Construction

Hong and Kim [8] found that the use of social media can accelerate the construction of digital government and the dissemination of online services. By comparing the policy guarantees, legislative process and strategic planning of digital government in South Korea and the United States, Chung and Kim [9] found that financial support, information and communication human resources, and communication control are the key elements to promote the smooth realization of digital government. Refaie and Ramadna [10] constructed a structural equation model to conduct in-depth research on the basis of a questionnaire survey of Jordanian employees and government service users. The results show that supervision, website quality, employee skills and value are the factors that affect the success or failure of digital government construction.

## 3. Research Status of Digital Government in China

Great efforts in promoting the construction of a digital government and achievements have been made in China. As of December 2021, the number of online government service users in China has reached 921 million, accounting for about 90% of the total number of netizens. The data of the 《Survey and Evaluation Report on Online Government Service Capability of Provincial Governments and Key Cities (2021)》 shows that 32 provincial-level online government service platform systems have been completed basically; Provincial departments have greatly improved their ability to supply government services according to applications, the amount being up to 58,240 items; Strengthen unified standards, "one network for use" supporting more than 900 types of electronic licenses; Implement convenience for the people and enterprises, online acceptance and "up to one visit" matters up to 89.77%, "zero running" matters up to 49.75%, which simplify the process, improve efficiency, and continuously optimize government efficiency.

Taking "digital government" and "government digitization" as search terms, with extended search in both Chinese and English being carried out on the CNKI platform on June 30, 2022, and 1154 relevant documents were obtained through content screening.

### 3.1. Annual Distribution of Publications

In terms of the annual distribution of publications, research on digital government started in 2001. Liang Musheng, School of Public Administration, Huazhong University of Science and Technology, was the first to pay attention to the

abuse of rights and legal issues in the operation of digital government, and summed up the concept of digital government, the characteristics of technical regulation, and the scope and principles of legal regulation. After 2017, digital government research output has grown exponentially (Figure 1).

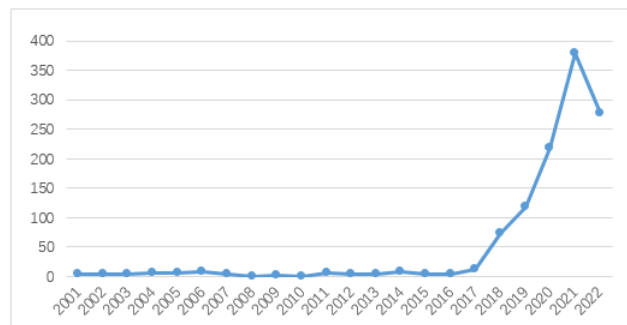


Figure 1. Annual Distribution of Publications

### 3.2. Subject Distribution of Publications

In terms of subject distribution, Administration and State Administration ranks first among the list with a total of 1,045 papers, accounting for 62.43%, followed by Information Economy and Mail Economy, accounting for 9.92%, followed

by Chinese Politics and International Politics, accounting for 8.06%. Other disciplines include Computer Software and Computer Technology, Macroeconomic Management and Sustainable Development, Journalism and Media, Corporate Economics, and Economic System Reform (Figure 2).

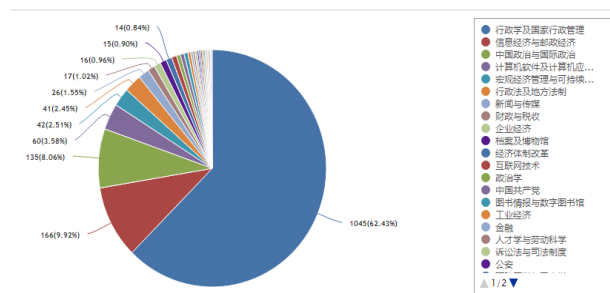


Figure 2. Subject Distribution of Publications

### 3.3. Research Topics Distribution of Publications

In terms of research topics, digital government, digital

transformation, digital governance, government services, and digital economy appear more frequently. The distribution of the top 20 topics is shown in Table 2.

Table 2. Top 20 of Research Topics of Digital Government

No.	Research Topics	Publications
1	digital government	463
2	digital transformation	102
3	digital administrative governance	49
4	government services	30
5	e-government	29
6	digital economy	21
7	Digital government construction	19
8	Digital governance	18
9	Big data	18
10	Government digital transformation	18
11	Zhejiang	14
12	blockchain	13
13	data sharing	13
14	data governance	13
15	Governance Modernization	12
16	Guangdong	11
17	Governance	11
18	business environment	11
19	modernization of government governance	11
20	Smart City	10

### 3.4. Funds Support Distribution

In terms of fund support, the literature on digital government comes from 167 projects of the National Social Science Fund of China, 32 projects of the National Natural Science Foundation of China, 24 projects of Humanities and Social Science of the Ministry of Education, as well as various related researches of Philosophy Social Science and Soft Science in other provinces and cities.

### 3.5. Research Content Distribution

In terms of research content, through systematic sorting and induction, the research on digital government in China mainly focuses on three aspects:

(1) Practical experience of foreign digital government construction. Yao [11] deeply analyzed the development process and the main practices among different states of digital government construction in the United States, to provide scientific basis and experience for the construction of digital government in China. Focusing on issues such as cross-departmental collaboration, data security and digital divide faced in the construction of digital government, Zhan [12] described the effectiveness and enlightenment of the digital transformation of the British government from the perspectives of value concepts, technical tools and institutional guarantees. Yang and Lin [13] started from the "green linkage" to link the application of AI technology in Japanese digital government construction, and put forward higher strategic thinking for China from the four aspects of strategic platform, strategic concept, strategic unit and strategic node.

(2) Case analysis and experience summary of digital government in China. Starting from the practice of Zhejiang digital government reform, Liu [14] summed up the "six in one" structure, and pointed out that support of data sharing technology, collection technology, security technology and data standards should be consolidated to ensure the government's digital transformation to respond to the needs of economic changes. Chen et al. [15] took the combined construction practice of Shanghai "all-in-one service" as the research object, and found that "superior push, demand pull, innovation drive" is an effective means of digital government construction. Based on the comparative analysis of the digital construction models of the three provincial governments of Guangdong, Zhejiang and Guizhou, Jiang [16] explored the common characteristics and individual characteristics, and proposed that the construction of local digital governments should be adapted to local conditions and rooted in local genes.

(3) The dilemma and countermeasures of digital government construction in China. On the one hand, digital government construction in China is faced with many practical difficulties in the process of promotion, including imperfect institutional guarantees, ineffective multi-participation mechanisms, insufficient professional talent reserves [17], and gaps in financial support. On the other hand, empirical research based on panel data conducted (Guo [18], Ruan [19]) showed that digital infrastructure and government capital investment have a significant positive role in promoting the construction of digital government. Therefore, in the digital government, it is necessary to strengthen top-level design, strengthen technical support, take multiple measures to mobilize public participation, and effectively

transform the "digital dividend" into the people's "sense of happiness" and "sense of gain".

## 4. Discussion

Digital government construction is a multi-input and complex project, which must be planned and constructed from a holistic perspective. Judging from the research status and strategic planning of digital government at home and abroad, the future research center of digital government will mainly focus on institutional mechanism, data security, data openness and sharing, and digital talents.

(1) Institutional mechanism. Institutional mechanism is the organizational foundation and institutional guarantee for the construction of the digital government, which regulates the principles, guiding ideology, practical measures and precautions for the construction of the digital government. First, establish a strong overall planning and coordination mechanism to ensure the unity of policies and regulations, prevent the occurrence of multiple political affairs, and clarify the division of responsibilities of relevant departments. Second, timely clean up and revise the regulations and normative documents that do not meet the sharing requirements, actively play the role of the pilot, and accumulate experience for the next step in the "legislation, reform and repeal" of laws and regulations. Third, establish and improve the relevant laws and regulations and supporting standard system for the open use of public information resources, and promote the development and utilization of data to be legalized and standardized at an early date.

(2) Data security is the foundation of the government digital transformation development. After all, the construction of digital government is based on data resources, and data as a type of resource, is bound to face the risk of data security. How to build a strong data security defense line is the top priority. First, improve the data security responsibility mechanism, clarify the data security responsibility boundary, and implement the main responsibility. Second, strengthen the technical capabilities of security protection, provide three-dimensional security technical support for data security in an all-round and multi-angle manner, and improve the overall security protection capabilities of the digital government. Third, establish a safety protection management mechanism, improve the whole-process safety supervision linkage mechanism covering "before, during, and after", and improve emergency response capabilities.

(3) Data openness and sharing is an important link in promoting the construction of a digital government. Accelerating the promotion of high-quality aggregation, efficient sharing and high-level opening of data resources can release data vitality. First, strengthen the aggregation of data resources, establish and improve the "one pool" format of government data resources, and effectively eliminate the "data island" dilemma. Second, optimize data sharing and exchange, and form a data sharing and exchange operation mode of overall coordination, block coordination, and upper and lower linkage. Third, promote the orderly opening of data, and form a high-quality and high-standard construction of scientific accurate classification of data open systems.

(4) Digital talents are not only the planners of digital government service blueprints, but also the beneficiaries of inclusive services. Nowadays, the rapid development of the digital industry has created a large demand for digital talents. However, colleges and universities have not yet formed a

scale for the training of digital talents to meet the needs of digital government construction. First, encourage digital leading enterprises, universities and scientific research institutes to carry out in-depth cooperation, jointly build digital talent training bases, and accumulate backup forces for digital government construction. Second, regularly invite experts in the government's digital reform industry to carry out professional training, so as to broaden horizons and improve capabilities in an all-round way. Third, improve the policy support for the introduction of digital talents, so as to achieve the purpose of "building a nest and attracting phoenix" to increase vitality.

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## References

- [1] Janowski T. Digital government evolution: From transformation to contextualization[J]. *Government Information Quarterly*, 2015, 32(3): 221–236.
- [2] Milakovich M.E. Digital Governance: New Technologies for Improving Public Service and Participation[J], *International Review of Public Administration*, 2012, 17(2):175-178.
- [3] European Commission. Exploring Digital Government transformation in the EU—Analysis of the State of the Art and Review of Literature[R], European Commission: Luxembourg, 2020.
- [4] United Nations. E-Government Survey 2020: Digital Government in the Decade of Action for Sustainable Development[R], United Nations: New York, NY, USA, 2020.
- [5] McNeal RS, Tolbert CJ, Mossberger K, et al. Innovating in digital government in the American states[J]. *Social Science Quarterly*, 2003, 84(1):52-70.
- [6] Kannabiran G, Xavier M J, Banumathi T. E-Governance and ICT Enabled Rural Development in Developing Countries: Critical Lessons from RASI Project in India[J]. *International Journal of Electronic Government Research*, 2008, 2(1): 103-116.
- [7] Luna L., Gil R., & Betiny C. Collaborative Digital Government in Mexico: Some Lessons from Federal Web-Based Inter-Organizational Information Integration Initiatives[J]. *Government Information Quarterly*, 2007, 24(4):808-826.
- [8] Hong S, Kim SH. Political polarization on twitter: Implications for the use of social media in digital governments[J]. *Government Information Quarterly*, 2016, 33(4):777-782.
- [9] Chung CS, Kim S B. A Comparative Study of Digital Government Policies, Focusing on E-Government Acts in Korea and the United States[J]. *Multidisciplinary Digital Publishing Institute, Electronics* 2019, 8:1362.
- [10] Refaie A A, Ramadna A M. SEM approach to determine factors affecting e-government success in Jordan[J]. *International Journal of Business Excellence*, 2021, 23(3):330-.
- [11] Yao S Q, Qi Y Z. Practical Research and Experience Reference of Digital Government Construction in the United States [J]. *Governance Studies*, 2019 (06): 60-65.
- [12] Zhan G B. The Transformation of Digital Government in the UK: Value Concept, Technical Tools and Institutional Guarantee [J]. *Administrative Tribune*, 2021, 28(06): 136-143.
- [13] Yang D, Lin L. "Green Linkage": Strategic Perspective of the Japanese Government's Digital Transformation[J]. *Chinese Public Administration*, 2021(11):138-144.
- [14] Liu S C. Strategic Implication, Technical Framework and Path Design of Digital Government Based on the Practice and Enlightenment of the "Zhejiang Pilot" [J]. *Chinese Public Administration*, 2018(09):37-45.
- [15] Chen ZT, Li Z, Wu J N. Digital Government Construction as Combinational Innovation: The Case of Shanghai's Government Online System [J]. *Comparative Economic & Social Systems*, 2022(02):133-144.
- [16] Jiang M J. A Comparative Study of the Local Digital Government Modes of Guangdong, Zhejiang and Guizhou Provinces [J]. *Administration Reform*, 2021(06):51-60.
- [17] Zhu L. The Real Dilemma and Breakthrough Path of Digital Governance in China [J]. *People's Tribune*, 2019(32):72-73.
- [18] Guo L, Huang Z K. An Empirical Study on Influencing Factors of China's Digital Government Construction [J]. *Social Sciences in Hunan*, 2021(06):64-75.
- [19] Ruan J Y. Research on the Influencing Factors of Digital Government construction—Big Data Analysis Based on 127 Policy Documents [J]. *Journal of Southwest Minzu University (Humanities and Social Science)*, 2022, 43(04):185-191.