

A Review on the Research of Digital Governance Theory in China

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Abstract: Digital governance theory is a western advanced governance theory based on the theory of holistic governance combined with the digital era. As the digital era continues to advance, the government's governance capabilities have been severely tested at multiple levels. Therefore, the development and improvement of digital governance theory has a key role in the construction of the national governance system. This article aims to broaden the research scope of digital governance theory and further promote the localization development of digital governance theory in China. Through quantitative and qualitative analysis of Chinese scholars' research literature on digital governance theory, this paper reflects that the Chinese academic community has not yet formed a relatively complete and detailed digital governance theory system. Related research has problems such as a single perspective, limited interdisciplinary fields, and insufficient exploration of localization.

1. Introduction

Digital governance theory is an innovative development based on the era of artificial intelligence in the western traditional governance theory. It was first proposed by Manuel Castell, and then Patrick Dunleavy and other scholars constructed a detailed theoretical framework for it. In 2013, the Third Plenary Session of the Eighteenth Central Committee of the Communist Party of China proposed "promoting the modernization of the national governance system and governance capabilities", and reiterated this issue as an important deployment in the Fourth Plenary Session of the Nineteenth Central Committee. Undoubtedly, in the new era of digitalization and informatization, digital governance theory plays an extremely critical role in the construction of the modernization of the national governance system. This article summarizes and reviews Chinese academic circles on the overall survey of digital governance theory literature research, Chinese academic circles' research on basic theory of digital governance, and Chinese academic circles' research review on security and risk issues in digital governance practice. The analysis of this article mainly through four angles: the definition of digital governance concept, the discussion of the characteristics of digital governance, the exploration of the role of digital governance and the control of digital governance risks. On this basis, this article provides a diversified perspective for China's research on digital governance theory, and provides a theoretical basis for further improving relevant research.

2. A General Survey of the Research Literature on Digital Governance Theory in Chinese Academia circles

This article is based on the CNKI database, with "theme" as the search term and "digital governance" as the search sentence. The deadline is January 2020. The details of the relevant research are as follows: From the perspective of the annual distribution of digital governance research literature in Chinese academic circles. From 2002 to 2015, there were few literatures on the theme of "digital governance", a total of 43 articles, accounting for 19.7% of the total number of samples. In 2018, the literature on the topic of "Digital Governance" has a clear upward trend, reaching 85 in 2019. Among them, the representative literature focuses on: First, the translation and

localization of foreign digital governance theory. The second is research on the application of digital governance, such as the role of digital governance in the good governance of urban governments. From the above trends, it is not difficult to find that as the Fourth Plenary Session of the 19th Central Committee of the Communist Party of China reiterates several major issues such as "promoting the modernization of national governance capabilities and governance system", "digital governance" has become an important research content in Chinese academic circles. From the perspective of Chinese academic circles on the distribution of digital governance research literature types, China's literature on "digital governance" is mostly academic journals, with a total of 122 articles, accounting for 70.9% of the total literature. In the dissertation, the existing documents are all master thesis. According to the number of Chinese conferences and academic journals, the research on "digital governance" in the Chinese academic community has achieved certain results, but it is still in its infancy.

3. A Review of Research on the Basic Theory of Digital Governance in China

3.1. Definition of the concept of digital governance

The concept of digital governance was first introduced by Manuel Castells, who was born in Spain and is currently a professor at the School of Communication at the University of Southern California, Los Angeles, in his book "The Rise of the Network Society" (1996). On this basis, Perry Hicks (Perri 6) and Patrick Dunleavy have detailedly demonstrated the theory of digital governance in many of their works, thus building a theoretical framework for the emergence of digital governance theory.

So far, the Chinese academic community has not yet formed a clear and precise definition of digital governance. Chinese scholars have elaborated on the concept of digital governance from different angles. Han Zhaozhu and Li Yapeng believe that the governance model in the digital era includes three major theoretical propositions, namely reintegration, digital transformation and demand-based holism. [1] According to the specific practice analysis of digital governance, Xu Xiaolin and Zhou Lixin believe that digital governance refers to the application of electronic technology in social operation and organizational form in a broad sense, and refers to the use of electronic technology to facilitate government administration and simplify the processing of affairs in a narrow sense. [2] Shen Guolin and Li Liangrong believe that digital governance is platform-based governance and an innovation of governance in the Internet environment. [3] Yan Jiahua and Wang Zhanghua believe that the concept of "digital governance" is the replacement and evolution of the original concepts of e-government, online government and "virtual government". Digital governance is the traditional "e-government" from the technical level to governance. The leap in the level reflects the combination of digital elements and governance elements, and is the process of extending the effectiveness of information technology from inside the government organization to outside the organization. [4]

Overall, the definition of the concept of digital governance by Chinese scholars is based on the systematic elaboration of the theory of digital governance by Patrick Dunleavy, and explores the localization of digital governance theory in China. From the essence of the concept definition, Xu Xiaolin and Zhou Lixin's early research on digital governance theory revealed the meaning of digital governance theory from the level of government practice and application, but the lack of theoretical interpretation is not conducive to the overall control of the concept. Other scholars such as Han Zhaozhu and Shen Guolin defined concepts of one or more aspects of digital governance, such as "digital governance is platform-based governance and an innovation in governance in the Internet environment". It is also not conducive to fully grasp the core essence of digital governance. From the perspective of the logical thinking of concept definition, Yan Jiahua and Wang Zhanghua revealed the difference between digital governance and e-government, online government and other concepts in a "negative + enumeration" way. When defining the basis of the concept of digital governance, it is denied that the terms "digital governance" and "e-government" are confused and used, which makes the definition of digital governance more comprehensive and

three-dimensional, but the conciseness of the concept is compromised. The logical thinking of the definition of digital governance by other scholars in China is generally an inductive summary method. It attempts to define the concept of digital governance by listing some of the meanings and characteristics of digital governance, which is not conducive to comprehensive control of the concept of digital governance.

3.2. Discussion on the characteristics of digital governance

The characteristics of digital governance are closely related to the background of the era of big data centered on information technology and "end-to-end" interconnection. Throughout the world, the popularity of digital information technology has given digital governance new features. The discussion of the characteristics of digital governance by Chinese scholars is mainly divided into two levels: theoretical analysis and practical development. At the level of theoretical analysis, Han Zhaozhu and others believe that the typical characteristics of digital governance theory are supported by information technology, and have the characteristics of diversified governance subjects and the provision of efficient and coordinated holistic services. [5] From the perspective of organizational form, digital governance theory is a brand-new manifestation of the bureaucratic organizational form in the modern information society. [6] At the level of practical development, Han Zhaozhu and Qu Wenkang believe that the outstanding feature of the theory of digital governance is to build an alliance in the virtual space with the help of the virtual organization structure of information technology, thereby intensifying the relationship between all parties. [7] Huang Jianwei and Chen Lingling believe that the development of digital governance practice shows a homogenous characteristic. The construction of digital governance around China is mostly centered on urban development issues and the intelligent provision of public services. However, there are still deficiencies in the interactive participation of citizens in the practice of digital governance. [8]

In general, through analysis, it can be concluded that most of the Chinese scholars' discussions on the characteristics of digital governance are in-depth interpretations of Western digital governance theoretical systems, indicating that Chinese scholars hope to guide the construction of digital governance theoretical systems through the introduction of advanced Western theoretical knowledge. However, the analysis of the characteristics of digital governance by Chinese scholars lacks a close connection with the actual national conditions of contemporary China, which is not conducive to the precise definition of the characteristics of digital governance in China. To fully grasp the characteristics of China's digital governance, it is necessary to fully integrate the digitalization and informatization process of contemporary Chinese society with the practical application of digital information technology by the contemporary Chinese government. First, the characteristics of China's high Internet penetration rate and large number of netizens provide the possibility for the coordinated participation of multiple subjects of digital governance in China. Second, China's digital governance has the characteristics that government practice precedes theoretical development. In 2013, CCTV's report on "difficulty in obtaining permits" resonated with the broad masses of the people. Behind the "difficult to apply for a certificate" reflects the urgent need for the reform of China's administrative approval system and the problems of insufficient data exchange and insufficient information transmission between various government departments. Since then, the central government has comprehensively promoted the establishment of a cross-department data sharing mechanism based on digital certificates across China, aiming to enhance network information sharing and data integration among internal government departments, thereby effectively improving administrative efficiency. [9] The "difficult to apply for certification" and the effective improvement of China's administrative approval system and other issues are not government policy reforms guided by the development of advanced theories such as digital governance. Instead, Chinese government departments directly use information technology to solve practical problems arising from the operation of government mechanisms. Looking back on the development process of China's digital governance, in terms of government practice, the Chinese government tried to introduce information technology into the field of government affairs as early

as the tide of the information age in the early 20th century. However, in terms of theoretical development, there are few literatures on the specific research of digital governance before 2016, and the relevant research did not increase significantly until 2018. It can be seen from this that China's digital governance is clearly characterized by government practice prior to theoretical development. Combined with the above analysis and relevant research by Chinese scholars, China's digital governance has not only the "three typical characteristics" proposed by Western scholars, but also the localization characteristics of multi-agent collaborative participation feasibility and government practice prior to theoretical development.

3.3. Exploring the role of digital governance

Digital governance plays an increasingly important role in the improvement of China's political, economic, and social systems and the establishment of systems. In recent years, Chinese scholars have conducted extensive discussions on the role and impact of digital governance, focusing on two aspects. First, research on digital governance advancing the modernization of China's national governance system and governance capabilities. Bao Jing and Jia Kai believe that, in the context of the rapidly entering digital society, advancing the digital governance system and governance capabilities has become a key element in the modernization of the national governance system and governance capabilities. [10] Zhou Wenzhang believes that the construction of digital government and digital governance system is of great significance to promote the modernization of China's national governance, such as scientific decision-making, precise governance, efficient service, government democratization, and loss of official corruption. [11] Second, research on the promotion of digital governance in urban construction and government good governance. Xu Xiaolin and Liu Yong believe that with its strong technical advantages, digital governance can form a good network governance structure, strengthen the legitimacy foundation of good governance of the city government, enhance the transparency and responsiveness of the city government, and clarify the responsibility of the city governance subject. Therefore, it is possible to build an effective mechanism of good governance of the city government, which has become an ideal choice for good governance of the city government in the digital age. [12]

In general, Chinese scholars have conducted in-depth analysis of the research on the role and impact of digital governance from the practical significance of the country and the government, and have achieved certain research results. By summarizing and analyzing the existing relevant research, it can be concluded that most of China's research on the role and impact of digital governance focuses on the direct impact of digital governance on institutional systems such as the national governance system and modernization of governance capabilities and government governance operating mechanisms. However, there are few studies on the indirect effects of digital governance on the transformation of the country's legal resources and the promotion of new democratization waves. To fully grasp the great significance of digital governance to the national government, we must conduct a comprehensive reflection on the direct and indirect effects of digital governance. Democracy and democratization has always been an important research field from the perspective of political science. Throughout history, each scientific and technological renewal and revolution will certainly promote the emergence of new forms of democracy, thereby promoting the renewal of the country's political legitimacy resources and the transformation of political legitimacy to a certain extent. For example, the political legitimacy resources of medieval Western regimes were mostly built on the divine power under the influence of Thomas Aquinas's theocracy political system. With the further development of natural science and the arrival of the Industrial Revolution, bourgeois thinkers represented by Locke, Rousseau, Montesquieu and others have developed and perfected the theory of natural rights centered on natural human rights, which has affected the process of democratization in the West. As a result, the transformation of Western countries' political legitimacy from theocracy resources to the political legitimacy of democratic political resources is promoted. Undoubtedly, the arrival of the Digital-Era Governance will certainly have an impact on the transition from traditional democracy to new networked democracy. In recent years, the Chinese government has followed the trend of the big data information era, and actively

promoted the construction of new multi-channel citizen political participation channels such as online discussion halls, blog questioning, and electronic voting. Promote the transformation of the country's political legitimacy resources. Combining the above analysis with relevant studies by Chinese scholars, China's digital governance not only has a direct impact on the promotion of the national governance system and the modernization of governance capabilities, and government governance operating mechanisms. It also has a far-reaching indirect impact on the transformation of the country's legal resources, the promotion of a new wave of democratization and other cultural thoughts.

4. A Review of Research on Security and Risk in China's Digital Governance Practices

The development of scientific and technological means and the overlap of the information age have two sides. On the one hand, the new digital and information-based governance model provides a new paradigm for related research in the fields of national governance system, government governance operation mechanism, and urban governance environment. On the other hand, the dependence of the governance system and governance operation mechanism on big data will inevitably bring about new forms of security issues related to network security and risk prevention and control. In recent years, Chinese scholars have conducted in-depth research on the issues of security and risk in the practice of digital governance. From the perspective of technical security, Wang Yinhong believes that there are two major risks in digital governance. First, the huge volume of big data makes the cost of information management significantly increase. The centralized storage of a large amount of data increases the risk of leakage and virtually reduces the attack cost of hackers. Second, the unique way of importing big data has greatly reduced the inequality of the offensive and defensive parties. In the era of big data, the sequence of time and space on the data processing and storage chain has been blurred, and the scalable data connection makes privacy protection more difficult. [13] He Zhe believes that the construction of the national data system should take security as the bottom line principle. This security includes three levels of security: one is the security of the data itself; the second is the security of data circulation; and the third is the security of digital rights. [14] Shen Guolin and Li Liangrong believe that with the popularity of the Internet, network security is gradually gaining attention as a non-traditional security. Internet security is divided into two parts: infrastructure security, data and information security. Infrastructure security mainly includes seven parts: natural disasters, man-made accidents, network security loopholes, cyber terrorism, cloud security, Internet security, and wireless LAN security. Data and information security include five parts: personal information security, corporate information security, online pornographic information, online violence, and political security. [15]

Overall, the Chinese academic community has a forward-looking outlook on the double impact of the era of big data on our governance practices. Chinese scholars conducted a comprehensive analysis of the potential risks and security issues digital governance practice, and pointed out the challenges China faces in data information privacy, data interaction, and digital rights. But the related research still has deficiencies. First, China's research on security and risk issues in digital governance practices has focused more on the mesoscopic threshold with the national government as the main body. That is, the national government faces challenges such as data risks and network security in the process of building a digital governance system. However, there are few researches on the macroscopic vision with the Internet competition between countries as the main body and the microscopic vision with the role of citizens in the construction of digital governance security system. From a macro perspective, with the advent of the era of big data, the "wars" among the big powers are no longer formalized in the conflict and friction of "real guns and live ammunition". The Internet has undoubtedly become an important means of competition between countries under the international system. How to prevent major risks in Internet competition, comprehensively build China's digital governance security system to cope with the fierce international "data war" situation, and avoid the penetration and destruction of vulnerabilities in digital systems in other countries is a major issue of practical significance. From a micro perspective, the multi-agent collaborative participation of digital governance and the "end-to-end" data communication characteristics of the

Internet have caused every citizen to influence the construction of a digital governance security system. Second, China's research on security and risk issues in digital governance practices focuses more on technical risk issues such as data and information security. However, there are few researches on public opinion risks such as political identity issues of Chinese citizens, conflicts of values and national identity of ethnic minorities in the practice of digital governance. In recent years, the Chinese government has actively promoted the development of e-government services such as online deliberations and online questioning, and has played an increasingly important role in the government's governance and operation mechanism. At the same time, with the rapid development and wide application of self-media such as Weibo and WeChat public accounts, the public rumors and other public opinion risks brought about by the free speech of citizens have become potential risks in the process of digital governance practice. Once large-scale social repercussions such as online rumors and other public opinion risk issues will inevitably lead to major problems such as conflicts in citizen values and lack of political identity, forming a "butterfly effect" in the Internet. Therefore, the establishment of a sound network public opinion supervision system is an important guarantee for the government in the process of digital governance practice. Third, there is relatively little research on how to prevent risks in the practice of digital governance and maintain the security of network data and information in China, especially involving the maintenance of network data in the practice of digital governance in natural disciplines such as computers and automation. There are few specific studies on information security and the prevention of digital risks, and studies in related interdisciplinary areas need to be filled. Combining the above analysis with relevant research by Chinese scholars, China's research on security and risk issues in digital governance practices has achieved certain results, but related research has the characteristics of single vision and single subject. Further research is needed to comprehensively control the security and risk issues in digital governance practices.

Conclusion

The development of information technology and the advent of the era of networking and dataization are unstoppable like the wave of globalization. Digital governance theory is not only a collision between traditional governance theory and the Internet era, but also a collision between humanities, social sciences and natural sciences. To some extent, it is both the need of the times and the inevitable of the times. As one of the western frontier governance theories, digital governance theory is translated, introduced and carried out by Chinese scholars in China's localization development. Related research has achieved periodic results in the combination of practice and theory. However, the development of China's digital governance theory is still in its infancy, and Chinese scholars have not yet formed a complete theoretical system for the definition, characteristics, and role of digital governance. And the research on the major issues of digital governance in practice has not yet had a relatively complete control. Throughout human history, every technological revolution will surely bring about reform and innovation in the government's governance system. Therefore, the development of China's digital governance theory should not only focus on the establishment of the theoretical system, but also improve the application of digital governance in the government governance operation mechanism. Guide practice through advanced theories and practice development theories to promote the development of China's national governance capabilities and governance system modernization.

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