



'Digital Going to the Countryside': A Visual Analysis of China's Digital-Enabled Rural Governance Research

Jing Yan* and Gongjing Gao

School of Political Science and Law, University of Jinan, Jinan, Shandong, China

*1621384419@qq.com, sl_gaogj@ujn.edu.cn

Abstract. Rural governance is an important part of the modernization of national governance system and governance capacity, and it is also a key link to realize rural revitalization. In recent years, with the rapid development and popularization of digital technology, digitally empowered rural governance has become a new research hotspot. This paper takes 223 literatures on China's digital inclusive finance collected by CSSCI sub-database of CNKI from 2019 to 2023 as samples, and uses CiteSpace to carry out knowledge map visualization analysis to present the prospect of digital rural governance research in the context of China's big data era. The study found that the research on China's digital rural governance has shown a steady upward trend; the research topics are gradually diversified, cross-cutting and comprehensive; the research hotspot is mainly to study the construction path of digital rural governance from the perspective of rural revitalization strategy. Therefore, this paper summarizes the development trend of China's digital rural governance under the strategy of 'rural revitalization', and hopes to provide useful reference for the follow-up study of China's digital rural governance.

Keywords: rural governance; digital village; rural.

1 Introduction

This paper uses bibliometric methods such as knowledge map technology and descriptive statistical analysis to analyze 223 selected articles on rural governance in China from the CSSCI sub-database of China National Knowledge Infrastructure (CNKI), so as to describe the research hotspots, frontier fields, research methods and scientific research cooperation in the field of digital rural governance in China, and clearly show the prospect of digital rural governance research in China. Through the analysis of the development trend of digital rural governance, we hope to explore the entry point and breakthrough point of future research on digital rural governance in China, further enrich the theoretical system of digital rural governance in China, and promote the research on digital rural governance in China, so as to provide suggestions and ideas for the realization of rural revitalization and high-quality development in China.

2 Data Sources and Research Methods

2.1 Data Sources

In this paper, the CSSCI sub-database of China National Knowledge Infrastructure (CNKI) is used as the retrieval platform. The keyword is selected as 'digital rural governance', and the time is selected from 2019 to 2023. After eliminating the literature unrelated to the research of digital rural governance in China, a total of 223 documents are retrieved. The reason for the selection of research samples is: on the one hand, the timeliness of research. With the continuous change and development of the times, China's digital rural governance has been constantly adjusted in all aspects, which has the characteristics of advancing with the times. Therefore, through the descriptive statistical analysis of CSSCI papers published in CNKI database in the past five years, we can grasp the latest development status of digital rural governance research in China. On the other hand is the representativeness of the sample. This study selects the literature used in this paper from the CSSCI sub-database of the China National Knowledge Infrastructure database because the research results included in the CSSCI sub-database have certain authority and represent the frontier field of Chinese humanities and social sciences research.

2.2 Research Methods

Mainly uses the literature measurement method. With the help of visual analysis software CiteSpaceV, this paper analyzes the high-frequency keywords, keyword co-occurrence, burst words and author cooperation network in the research field of digital rural governance in China, so as to draw a knowledge map on the research field of digital rural governance in China. Through the knowledge map drawn, it reflects the development history, research hotspots and research trends in the field of digital rural governance research in China. With the help of Excel, the descriptive statistical analysis and chart drawing of high-frequency keywords and burst words are carried out to reflect the basic situation of the research field of digital rural governance in China.

3 The Age Distribution of the Number of Research Literature

From 2019 to 2023, the number of research papers on China's digital rural governance generally showed a steady upward trend. In 2023, it reached the peak of research in the past five years. According to the analysis, there are two main reasons that affect the development trend of the number of papers in the field of digital rural governance research in China.

On the one hand, the impact of national macro-policy. The country's top-level design has strongly promoted the research and development of China's digital rural governance.^[1] With the guidance and support of policies, more and more scholars and research institutions have begun to pay attention to the field of digital rural governance

and actively explore the application of digital technology in rural governance. This not only promotes the development of digital rural governance theory, but also provides useful guidance and support for practice.

On the other hand, rural practice repercussions. With the popularization of the Internet and the continuous progress of digital technology, the application of digital technology in rural governance is becoming more and more extensive.^[2] In rural practice, the advantages of digital rural governance have gradually emerged, which has further promoted the enthusiasm of academic research on digital rural governance.

4 Co-occurrence Analysis of Themes and Areas

4.1 High Frequency Keywords

The word frequency analysis method is to analyze the distribution of keywords or subject words that can express the core content of the literature in the literature information, and judge the development trend and research hotspot of the research field. The top three keywords of betweenness centrality are 'digital village', 'rural revitalization' and 'rural governance'. The development of digital rural governance research in China can be demonstrated by analyzing the initial year of high-frequency keywords and their changes.

4.2 Keywords Co-occurrence Map

The basic principle of co-word analysis is to count whether any two words in a group of keywords appear together in a certain article in this group of documents, and then count the number of co-occurrences and construct a symmetric keyword co-occurrence matrix. Through co-word analysis, we can understand the research frontiers and research hotspots in this field. After counting the high-frequency keywords in the literature of digital rural governance, it is analyzed.

The research field of digital rural governance in China involves a wide range of topics. There are not only the research on the overall structure, policy system and development path of digital rural governance at the macro level, but also the discussion on the employment, education, pension and health services of rural residents at the micro level. It involves not only political and economic research, but also research on rural environment and culture. There are both subjective factors such as individual participation behavior and objective factors such as social support. The map shows more clearly the hot topics in the field of digital rural governance research in China.

4.3 Keyword Clustering, Timeline Knowledge Graph

Through CiteSpace software, keyword clustering analysis is carried out to generate keyword clustering knowledge graph. These clusters reflect the current status of hot issues in the field of digital rural governance research in China, including 'digital village', 'digital economy', 'digital governance', 'rural revitalization', 'digitization',

digital empowerment ', ' governance effectiveness ', ' digital technology ', ' rural governance ', ' community ' 10 cluster labels.

4.4 Emergent Keywords

In CiteSpace, the more burst nodes a cluster contains, the more active the research field (ActiveArea) is, which is a new trend of research (EmergingTrend).

In recent years, the hotspots in the field of digital rural governance research are constantly evolving and deepening. From 2019 to 2020, as a new trend of research, public service and Internet + highlight the importance of digital rural governance in public service and information construction. Subsequently, digitization and social governance have become the focus of research in 2020-2021, reflecting the profound changes in rural society and the wide application of digital technology in rural governance. Since 2021, the emergence of new keywords such as villagers ' autonomy, common prosperity, intelligent agriculture and digital finance has shown the diversification and deepening of the research field of digital rural governance. As an important part of rural governance, how to realize the effectiveness and sustainability of villagers ' autonomy in the digital context is becoming a new direction of research. At the same time, smart agriculture and digital finance, as emerging fields, provide new paths and means for digital rural governance. ^[3]In addition, as the infrastructure supporting digital rural governance, the security and stability of network technology is very important to ensure the smooth progress of rural governance.

Based on the rural revitalization strategy and digital rural construction, digital technology was formally introduced into rural governance in 2019, which marked the beginning of a new era of digital rural governance. Since then, digital rural governance has gradually become a research hotspot, and its research field has been expanding and the depth of research has been increasing. As an important means of rural revitalization and governance modernization, digital rural governance has a wide and in-depth research field. In the future, with the continuous development of digital technology and the continuous improvement of rural governance, digital rural governance will continue to maintain an active and diversified trend, providing strong support for promoting rural revitalization and realizing the modernization of rural governance.

4.5 Hot Topics

Based on the analysis of high-frequency keywords, keyword co-occurrence maps and emergent keywords, it is determined that from 2019 to 2023, China 's digital rural governance research mainly focuses on four parts: digital economy, digital governance, digital technology and common prosperity.

(1) Digital economy: With the rapid development and popularization of information technology, digital economy is gradually becoming an important engine to promote the modernization of rural governance and the overall revitalization of rural areas. First of all, smart agriculture supported by modern information technologies such as big data and the Internet of Things has greatly improved the efficiency and quality of agricultural production. It brings convenience to farmers and greatly increases their income.

Secondly, as a product of Internet development, e-commerce platform has been gradually applied to agricultural activities in recent years, and has played an irreplaceable role in poverty alleviation. It not only transcends the physical space obstacles and expands the sales channels of agricultural products, but also drives farmers to pay attention to the brand effect of products and promote the transformation and upgrading of agriculture. Third, economic development has increased people's demand for a better life, and tourism has become an important part of people's lives. Under the guidance and support of policies, rural areas in many places rely on their unique location advantages, customs and culture, and characteristic products to vigorously develop tourism. Diversified digital means have greatly promoted the spread of news, expanded the scope of the market, and improved the quality and efficiency of services. To better meet the needs of tourists and promote sustainable development.

(2) Digital governance: As the core content of digital rural governance, digital governance requires the participation of multiple subjects such as government, enterprises, social organizations, online communities, and individual villagers. ^[4]On the one hand, with the help of modern information technology, rural managers have improved the accuracy of rural governance and the intelligence of decision-making, and better served the villagers; on the other hand, the formation of digital platforms has strengthened the openness and democratic supervision of rural government affairs, guaranteed the dominant position of villagers, stimulated the enthusiasm of villagers' autonomy and community participation, and promoted the fairness, justice, harmony and stable development of rural society.

(3) Digital technology: Digital technology is an important support and guarantee for digital rural governance. With the rapid development of the Internet, digital technologies such as big data, artificial intelligence, Internet of Things, and artificial intelligence have been more and more widely applied to rural governance. ^[5]Practice has proved that whether it is the development of rural government affairs, agricultural economy, folk culture, or the grass-roots construction of health care, employment and entrepreneurship, pension and parenting, it has greatly benefited from the application and popularization of digital technology.

(4) Common prosperity: As the essential requirement of socialism, common prosperity is one of the important goals of digital rural governance. In the process of modernization, in order to achieve high-quality development in rural areas, we must narrow the gap between urban and rural areas. As an innovative governance model, digital rural governance is helpful to break the urban-rural dual structure, promote the flow and rational allocation of resources, technology, talents and other elements between urban and rural areas, promote the upgrading of agricultural industry, strengthen the construction of rural infrastructure, improve the level of public services, create more employment opportunities and income sources for farmers, and enhance the sense of gain, happiness and security of farmers, so as to promote the modernization of rural governance system and governance capacity and the early realization of common prosperity.

5 Conclusions

In short, digitization brings both opportunities and challenges to rural governance.^{[6][7]} Based on the above analysis, this paper puts forward the following four suggestions:

(1) Strengthen top-level design, actively play the macro role of government guidance and support, and promote the balance between supply and demand.^[8]

(2) Integrate multiple service forces, give full play to the role of each subject, and encourage active participation in cooperation.

(3) Promote the integration of resources, narrow the gap between urban and rural areas, and fundamentally improve the quality.

(4) Improve the level of digital technology, promote its popularization and application, and devote to technical realization.

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