

Review and Prospects of Domestic and International Collaborative Governance Research: Based on Visualized Knowledge Map Analysis

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Abstract: This paper systematically reviews the research progress and trends in collaborative governance both domestically and internationally, aiming to provide theoretical guidance and practical direction for addressing complex issues in China's social development and promoting long-term sustainable development. [Method/Process] A visual knowledge mapping analysis was conducted on articles containing the term "collaborative governance" in their titles from the Web of Science Core Collection and the CNKI database. [Result/Conclusion] The study found that international research primarily focuses on using collaborative strategies to address specific issues such as the performance, efficiency, and innovation of collaborative governance, policies and strategies of collaborative governance, participants in collaborative governance, and cross-departmental collaborative governance. Theoretical models are often constructed in the process. Domestic research typically adopts a theoretical approach, leveraging synergetic theory from natural sciences or incorporating international collaborative governance frameworks to analyze and address prominent issues in areas such as public crisis response, Beijing-Tianjin-Hebei collaborative governance, rural governance, ecological civilization construction, higher education, and vocational education. In terms of research methods, international studies predominantly utilize diverse qualitative research, while domestic studies lean towards qualitative analysis and are gradually incorporating quantitative tools. Future research should aim to establish a localized theoretical system that aligns with Chinese characteristics and enriches the theoretical boundaries in the field of nature reserves.

1. Introduction

Collaborative governance emerged as an interdisciplinary governance theory in Western society in the late 1980s and early 1990s, originating from the organic combination of synergetics in natural sciences and governance theories in social sciences. The theory of synergetics was first proposed by the renowned German physicist Haken in his work **Synergetics: The Mystery of Natural Formation** [1]. For a long time, the terms "governance" and "government" were used interchangeably until they were clearly distinguished in the 1980s and 1990s. The concept of "governance crisis" appeared for the first time in a World Bank report in 1989, and since then, governance has been widely applied across various disciplines such as political science, sociology, economics, and public administration [2]. In the field of public administration, the advent of globalization has increasingly blurred the boundaries of administrative jurisdiction, making it difficult for government agencies alone to address complex public issues, thus rendering traditional management models insufficient [3]. This led to the emergence of collaborative governance theory.

Foreign studies on collaborative governance define it on macro, meso, and micro levels. The macro level emphasizes the government's inclination to collaborate with various sectors and actors in different fields [4,5], the meso level focuses on specific policy-making and management processes [6], and the micro level clarifies the characteristics and participants of collaborative governance [7]. Chinese research suggests that the connotation of collaborative governance can be explained from the dimensions of the policy-making process, the establishment of sound relationships, and the methods of achieving good governance [8]. In the face of prominent contradictions and issues in

China's current social development, such as ecological degradation, environmental pollution, urban-rural disparities, an aging population, and the digital divide, collaborative governance—as an approach and model that consolidates multiple stakeholders, resources, and expertise—holds significant practical value in addressing cross-boundary issues and achieving sustainable social development. This paper employs the research method of a visualized knowledge map, utilizing bibliometric visualization software VOSviewer to systematically review the research progress and future trends of collaborative governance in China and abroad, aiming to identify directions for further in-depth research in collaborative governance in China.

2. Data Sources and Research Methods

The cut-off date for the literature search in this paper was set as June 10, 2024. The domestic literature data on collaborative governance was obtained from the CNKI database, including articles from core journals in Peking University, CSSCI, and AMI, as well as theses. The literature search was conducted using "collaborative governance" as a keyword in the title, followed by screening and deduplication, resulting in 3,448 articles. The timespan of the literature is from 2001 to 2024, with the earliest Chinese article dating back to 2001. International literature was collected from the Web of Science (WoS) Core Collection by searching the title "collaborative governance," limiting the literature type to "Article" and the language to "English." Articles with low relevance were manually removed, followed by screening and deduplication, resulting in a dataset of 805 English articles, spanning from 1991 to 2024. This paper uses VOSviewer software to generate knowledge maps of keyword co-occurrence and clustering, to systematically and objectively capture the academic development history and research trends in the field of collaborative governance both domestically and internationally [9].

3. Current Research Status of Collaborative Governance at Home and Abroad

3.1. Current Status of Collaborative Governance Research Abroad

3.1.1. Research Hotspots and Frontiers

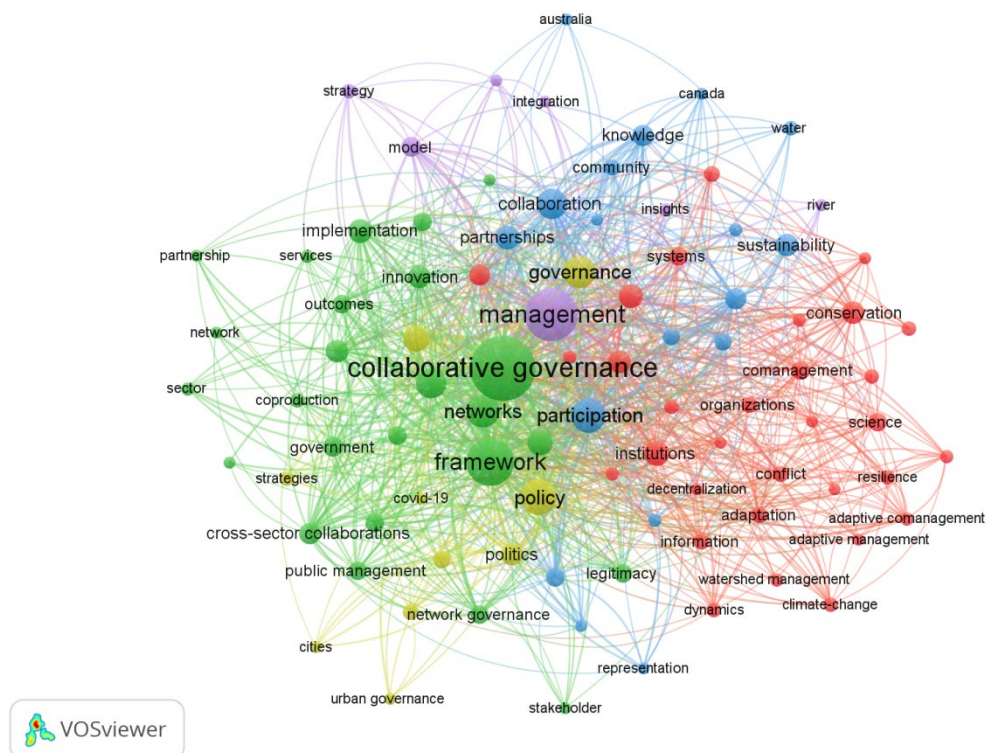


Figure 1 Co-occurrence and Clustering Map of Keywords in International Collaborative Governance Research

In the literature from the WoS database, high-frequency keywords in collaborative governance research include management, framework, policy, participation, network, performance, challenges, power, and implementation. Current research hotspots roughly focus on four aspects: the performance, efficiency, and innovation of collaborative governance; policies and strategies of collaborative governance; participants in collaborative governance; and cross-departmental collaborative governance (see Figure 1).

Collaborative governance, through adaptive governance structures and innovative strategies, enhances the performance of public services in multiple domains, while further research is needed on the driving forces of cooperation to address challenges. Collaborative governance has achieved success in overcoming financial constraints and balancing quality and efficiency in public service improvements through public-private partnerships, particularly in fields such as finance, education, and environment [10]. Governance mechanisms need to be adjusted according to the stage of the cooperation lifecycle, focusing on contracts in the initial phase and relationship management in the mature phase [11]. Collaborative networks have a positive impact on the performance of fields such as smart cities, international policy, education, public health, and resource management, although the adaptability of governance structures needs to be assessed [12]. Collaborative governance innovations strengthen service cooperation and network building [13], and the importance of strategies and structures cannot be overlooked [14]. During the innovation process, governance mechanisms must balance contractual and relational governance to address cooperation challenges [15]. Future research should further investigate the impact of cooperation dynamics on collaborative governance [16].

Collaborative governance requires collective learning and cooperation, with policy innovation and trust balance as key factors, while optimizing social capital supports sustainable development. Collective learning, cooperative implementation, representation, and governance experience are crucial for the success of collaborative governance. Policy learning, leadership, and the innovation of policy tools help stakeholders reach consensus and enhance efficiency in the governance process [17]. In healthcare and sports policy, network structure and governance coordination mechanisms significantly improve the effectiveness and efficiency of policy implementation [18,19]. The interaction between trust and power, the relationship between power and knowledge, and the role of authority in governance manifest in multiple dimensions, including conflict resolution and power dynamics, which significantly affect governance outcomes [20-22]. Enhancing social capital and optimizing governance strategies can effectively address complex challenges and achieve sustainable development [23].

The diversity of participants is key to the fairness and efficiency of collaborative governance, with particular attention to the participation of disadvantaged groups. Participant diversity has a significant impact on the effectiveness and fairness of governance, especially the influence of local politicians' and the public's motivations on outcomes [24]. Diversity helps clarify roles and responsibilities, promotes effective resource allocation, and drives political leadership and policy innovation [25,26]. Citizen participation is crucial for improving policy transparency and satisfaction [27], which can enhance support and reduce the influence of vested interest groups, particularly in the participation of indigenous and non-indigenous people [28]. In environmental governance and urban planning, the involvement of professional organizations and the public improves decision-making quality [29], and collaboration between the public and private sectors is effective in enhancing governance quality and promoting non-governmental organization (NGO) cooperation [30]. Innovative collaborative governance models provide opportunities for marginalized groups, but challenges remain in ensuring equity and efficiency for disadvantaged and marginalized populations [31]. Therefore, when pursuing comprehensive and fair governance goals, particular attention must be paid to the participation of disadvantaged groups.

Cross-departmental collaborative governance emphasizes social justice and sustainability, with multi-departmental cooperation being particularly critical in environmental governance. Collaborative governance achieves objectives in various policy and management fields through interdepartmental cooperation, with social justice and sustainability being key in the governance of protected areas, emphasizing multi-level participation and adaptive learning to address complex

socio-ecological systems [32]. In cross-departmental cooperation, collaborative governance must balance the efficiency of policy implementation with the diversity needs of participants [33]. In disaster management related to climate change, multi-departmental participation and social processes are especially important [34]. China's air pollution governance demonstrates the significant impact of market mechanisms, collaborative networks, and relationship quality on collaborative governance [35], with emission trading and evaluation and penalty mechanisms being crucial for improving governance efficiency [36]. Other successful cases, such as Chandigarh's solar city initiative [37], Mokpo's urban regeneration policy satisfaction study [38], BRAC's local governance strengthening project in Bangladesh [39], and the public innovation role of Spain's "Gipuzkoa Laboratory" [28], illustrate the potential of collaborative governance in enhancing the sustainability of decision-making.

3.1.2. Research Methods

In international research, both case studies and empirical studies are prevalent, with case studies being the most common. Mixed research methods, social network analysis, text analysis, thematic analysis, mathematical models, statistical analysis, and spatial econometrics are widely applied. However, qualitative research is generally more prevalent than quantitative research. Cross-case and multi-case studies are frequently discussed, reflecting an emphasis on analyzing commonalities and differences between different cases, which promotes theoretical development, experience sharing, institutional design, effectiveness evaluation, and interdisciplinary integration.

3.2. Current Status of Collaborative Governance Research in China

3.2.1. Research Hotspots and Frontiers

Keyword co-occurrence and clustering from the CNKI database (see Figure 2) reveal high-frequency keywords in Chinese collaborative governance research, such as collaborative governance, multiple stakeholders, ecological environment, SFIC model, governance, air pollution, social organizations, Beijing-Tianjin-Hebei, collaboration, community governance, food safety, evolutionary game, rural revitalization, local government, urban communities, and government. Domestic research primarily focuses on important national topics, including public crisis response, Beijing-Tianjin-Hebei collaborative governance, rural governance, ecological civilization construction, and collaborative governance in higher and vocational education.

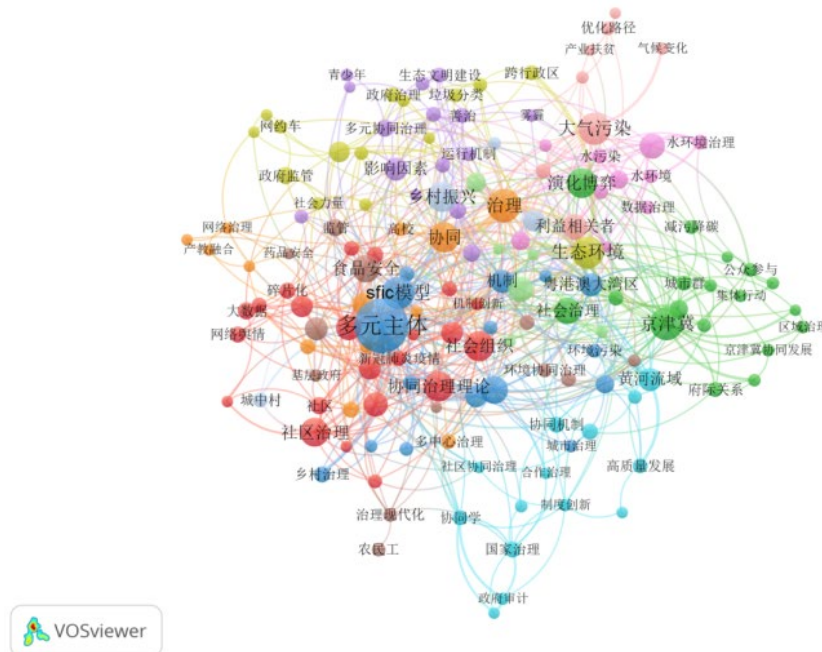


Figure 2 Co-occurrence and Clustering Map of Keywords in Domestic Collaborative Governance Research

Research on ecological civilization construction emphasizes the government's central role in

coordinating efforts across various stakeholders. River basin and cross-regional governance emphasize establishing effective cooperation models, with recommendations to enhance governance efficiency through multi-departmental supervision, information sharing, and policy improvement [40]. In environmental governance, especially in air and water pollution control, the need for multi-stakeholder cooperation and cross-regional coordination is highlighted, advocating for technological and institutional innovations. Solutions are suggested through legal frameworks, innovations in information sharing, and collaborative mechanisms to address environmental issues, emphasizing challenges like information asymmetry and conflicts of interest, and recommending optimization of governance structures and increased resource investment to overcome these challenges [41-43].

In the field of public crisis emergency response, studies stress the importance of collaborative governance. Wang Ying and Jin Zixin [44] argue that an emergency management system that integrates the government, market, and society can enhance response speed and effectiveness. Hu Jianhua and Zhong Ganghua [45] discuss the issue of collaboration in cross-regional public crisis governance, advocating for strengthening regional cooperation and coordination to enhance crisis response capabilities. Zhou Guangliang [46] highlights the importance of citizen participation, information sharing, and cross-departmental collaboration in food safety and emergency management to handle food safety crises more effectively.

Collaborative governance in the Beijing-Tianjin-Hebei region spans environmental governance and economic development, requiring collaboration among the government, enterprises, and social organizations to tackle challenges such as smog and water resource protection [47]. Industrial integration and transportation integration are seen as key drivers of coordinated regional economic development, achievable through industry chain integration and improvement of the transportation network [48,49]. Technological innovation is equally crucial for enhancing regional competitiveness and sustainable development, requiring cross-regional leadership mechanisms, refined benefit distribution, and active participation from multiple stakeholders to address governance challenges [48,50].

Research on rural governance emphasizes establishing collaborative governance mechanisms suitable for rural community development. The “government-society interaction” in Taicang, Jiangsu, and the practices in Chuxiong Yi villages highlight the significant role of local culture in community co-governance. The application of information technology has improved rural governance efficiency, though governance structures and processes still require optimization [51]. The multi-centered collaborative governance model underscores the importance of multi-stakeholder collaboration, addressing rural environmental governance challenges by fostering collaborative motivation and resource sharing [52]. To address issues such as the lack of collaborative concepts and inconsistent goals, institutional design improvements and leveraging local social capital are recommended [53].

In higher education and vocational education, collaborative governance practices are implemented across multiple areas, including research project management, professional title reform, internal auditing, and comprehensive education practices. These practices reflect an understanding of the complexities of university governance and a continuous need to optimize collaborative mechanisms. In vocational education, emphasis is placed on the joint participation of government, enterprises, and educational institutions through strategies like technological empowerment [54], improvement of school-enterprise cooperation [55], and enhancement of special education governance [56] to modernize vocational education and talent cultivation. Despite the pivotal role of collaborative governance in promoting industry-education integration and improving organizational efficiency, challenges such as insufficient execution and collaborative mechanisms remain, which need to be addressed by optimizing mechanisms and strategies.

3.2.2. Research Methods

In domestic research, qualitative methods predominantly include literature review, case studies, and deductive-inductive methods, while quantitative methods primarily involve social network analysis, difference-in-differences, thematic analysis, model simulation, and evolutionary game analysis. The research findings offer theoretical guidance and practical reference for deepening

understanding of the operational mechanisms of collaborative governance, clarifying its effects and influencing factors, proposing optimization strategies, exploring innovative practices, and advancing the localization of collaborative governance theories.

4. Research Conclusions and Future Prospects

4.1. Research Conclusions

In terms of research hotspots and frontiers, international studies primarily focus on using collaborative strategies to address specific issues such as the performance, efficiency, and innovation of collaborative governance, policies and strategies of collaborative governance, participants in collaborative governance, and cross-departmental collaborative governance, while also developing theoretical models. In contrast, Chinese scholars often approach from a theoretical perspective, utilizing theories of synergetics from natural sciences or introducing international frameworks of collaborative governance [57] to analyze and address prominent issues in areas such as public crisis response, Beijing-Tianjin-Hebei collaborative governance, rural governance, ecological civilization construction, higher education, and vocational education. In terms of research methods, international studies tend to employ case studies and empirical research, with extensive use of mixed research methods and social network analysis, where qualitative research is more prevalent than quantitative research. This approach has promoted theoretical development and interdisciplinary exchange but faces challenges such as selection bias, lack of consistency, and limitations in research subjects [57]. In contrast, domestic research mainly relies on qualitative methods such as literature review and case analysis, while also incorporating quantitative methods to some extent. This aids in the localization of theory and exploration of practical models, although there is a need to enhance methodological diversity, sample representativeness, and interdisciplinary research.

4.2. Future Prospects

4.2.1. Constructing a Localized Collaborative Governance Theory System Adapted to China's Characteristics

International collaborative governance research spans macro, meso, and specific theoretical definitions, with frameworks such as the SFIC model, collaborative governance integration framework, multi-centered collaborative governance model, and matrices assessing the effectiveness of collaborative governance institutions, providing a theoretical foundation for the understanding and implementation of collaborative governance. However, Western models often fall short in addressing China's unique political system, urbanization, and environmental challenges, making the localization of collaborative governance theory in China an urgent need. Chinese research generally adopts perspectives from theories such as goal management, stakeholder theory, actor-network theory, social capital theory, and synergy theory to construct relevant concepts and theoretical frameworks for specific research areas, analyzing and explaining key issues, influencing factors, mechanisms, and pathways in the collaborative governance process.

The effectiveness of collaborative governance is influenced by various factors, including community identity and cultural values, the autonomy and diversity of participants, local protectionism and urban-rural balance, neutrality and trust-building in governance processes, the motivations and capabilities of governance actors, governance network structures, the stability of interest alliances, social capital accumulation and enhancement, the design variability of accountability mechanisms, and organizational nature and hierarchy. The study of collaborative governance mechanisms and pathways can be divided into four logical themes: motivation and outcome, dynamics and drivers, actors and organizations, and management and efficiency. As governance modernizes, there is an urgent need in China to build a localized collaborative governance theoretical system tailored to Chinese characteristics. By addressing the pressing contradictions in China's social and economic development, upholding a "people-centered" and "Beautiful China" stance, fully discussing Chinese experiences, and forming a set of Chinese theories in collaborative governance using the Marxist views, concepts, and methodologies adapted to China, a comprehensive

system of concepts, categories, knowledge, and principles in collaborative governance can be established. Establishing a localized theoretical discourse system will respond to the call of the times.

4.2.2. Deepening the Application of Theory in the Field of Nature Reserves

The International Union for Conservation of Nature (IUCN) emphasizes the diversity of governance, the importance of management objectives, and the adaptability and flexibility of governance models in nature reserves, highlighting the importance of multi-stakeholder participation, cross-regional collaborative governance, adaptive co-management models, and international cooperation in the governance of nature reserves [58]. Research on collaborative governance in nature reserves has broadly covered areas such as management systems, legal frameworks, participatory empowerment, cooperative networks, and policy orientation, underscoring the significance of multiple stakeholders. However, exploration remains limited regarding the structural challenges in nature reserve construction. First, studies have not systematically considered the holistic nature of governance systems, overlooking the interconnections and combined effects among governance elements. Second, the analysis of governance actors is relatively singular, failing to fully capture the complexity of diverse actors and their interactions. Third, research on collaborative governance mechanisms is insufficient, lacking in-depth analysis of effective collaboration and coordination strategies among different stakeholders.

Future research should therefore deeply analyze the needs, behaviors, relationships, and interactions of diverse stakeholders; construct collaborative governance mechanisms inclusive of disadvantaged groups; and innovate governance policy tools to ensure a balance of interests and protection. From the perspective of collaborative governance theory, such efforts can inject new research vitality and practical guidance for the sustainable development of nature reserves. This will not only enrich the connotations of collaborative governance theory but also promote the realization of the concept of a "mountains, rivers, forests, fields, lakes, and grasslands life community," advancing the full progress of Beautiful China.

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