

# The Evolution and Trend Analysis of Rural Planning Research Hotspots under the Background of Territorial and Spatial Planning

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## ABSTRACT

Under the background of the new round of land and space planning, the research on rural planning in China is undergoing positive changes. Based on the past emphasis on engineering thinking and planning technology, it has entered the field of planning strategy and planning guidance. The extended development trend shows a research trend of intensified integration with public management disciplines and government governance theories. The intervention of government regulation research will provide a solid theoretical guarantee for the rural revitalization strategy that focuses on planning and planning first. In order to study the rural planning hotspots and trends in the context of territorial and spatial planning, using CiteSpace software to map rural areas from the perspectives of the number of articles, authors, publishing organizations, keyword co-occurrence networks, keyword clustering analysis, hotspot evolution, prominent word analysis, etc. The knowledge map was planned and visualized comparative analysis was carried out.

## 1. Introduction

In the 19th National Congress of the Communist Party of China in 2017, General Secretary Xi Jinping put forward the strategy of rural revitalization. He pointed out that the strategy of rural revitalization is a grand strategy of the party and the country, and planning must go ahead and strengthen the leading role of planning. Rural planning has gradually received extensive attention from

scholars. The weak vision of rural planning under the long-term “urban-rural dualization” system has led to difficult, mismatched, unreasonable, and lack of theory in rural planning; slow rural development, deteriorating ecological environment, “one thousand villages”, lack of regional characteristics, and public Many problems such as imperfect and unbalanced service facilities and municipal infrastructure have brought great obstacles to the realization of the rural revitalization strategy.

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Urban planning is one of the important public policies for the government to regulate urban spatial resources, guide urban and rural development and construction, maintain social equity, and protect public safety and public interests<sup>[1]</sup>. At the “Symposium on the Integrated Development of Urban-Rural Planning and Public Management Disciplines” in June 2016, Professor Huang Yan, then Deputy Minister of Housing and Urban-Rural Development, took the lead in pointing out that “if you look at complex urban issues using engineering. It has exposed the shortcomings of ineffective methods and inappropriate tools, and will not use public policies, management systems, social construction and other methods to solve complex urban problems.”<sup>[2]</sup> Also pointed out many problems based on literacy, concepts, and talent training methods. It is very difficult to explore the expansion of urban planning to public policy and public management<sup>[2]</sup>.

In May 2019, the State Council issued the “Several Opinions of the Central Committee of the Communist Party of China and the State Council on Establishing a Territorial and Spatial Planning System and Supervising Implementation” (hereinafter referred to as the “Several Opinions”), stating that: It is also possible to prepare township-level territorial and spatial planning for several townships as a unit<sup>[3]</sup>, which not only enhances the overall planning and policy flexibility of town-level territorial and spatial planning, but also because of the introduction of national governance and public regulations into the territorial and spatial planning system. The concept of public management has brought great challenges to the study of rural planning. The in-depth integration of urban and rural planning disciplines and public management, national governance and government regulatory tools are a new topic facing the territorial and spatial planning system, and it is also the ultimate goal of its development.

With the implementation of “Several Opinions”, this research aims to sort out the changing trends of research hotspots in the field of rural planning under the background of land and space planning, and focus on the changes in the perspective of government regulation and public management.

## 2. Research Methods and Data Sources

Using the Citespace software based on the JAVA platform as a visual analysis tool for the “rural planning” literature research, using the principle of co-word analysis to draw a key word co-occurrence map in the field of rural planning, and through keyword cluster analysis to obtain the research topics in this field The relationship between. Nowadays, domestic Citespace research usually uses the literature in CNKI as the research data source. However,

due to the small sample of core literature literature, there is a general lack of analysis of core journal data, which reduces to a certain extent. The scientificity and persuasiveness of the conclusion.

In order to enhance the scientificity and persuasiveness of the research conclusions, this paper selects the core documents in the China Knowledge Network (CNKI) as the data source; because the relevant documents and documents after the national spatial planning are mainly concentrated after 2010<sup>[4]</sup>, combined with The background conditions for the new territorial and spatial planning of the “Several Opinions”, this article sets the publication time of the retrieved documents to 2010 to 2020, and the retrieval time to May 19, 2020.

The search criteria were “Subject=‘Country Planning’” for advanced and precise search, and 1051 document samples were obtained. After excluding invalid documents such as newsletters, conference introductions, newspapers, and documents that are not very relevant to the research topic, while retaining the words “village planning” “beautiful village” “rural revitalization” “rural landscape planning”, and “rural landscape planning” A total of 470 valid literature samples were screened for the research topics such as “ecological planning”.

## 3. Overall Characteristics of Rural Planning Research

The amount of articles published is an important indicator reflecting the amount of information in a publication. It is usually also a measure of the level of subject development, scientific and technological output and scientific research achievements<sup>[5]</sup>. Professor Li Hongyi believes that the research and analysis of the amount of articles represents this The depth and breadth of a subject research<sup>[6]</sup>. An in-depth analysis of the number of 470 sample documents of “Rural Planning”, as shown in Figure 1, shows the overall evolution law: low-level equilibrium → sudden increase → stability → rapid increase.

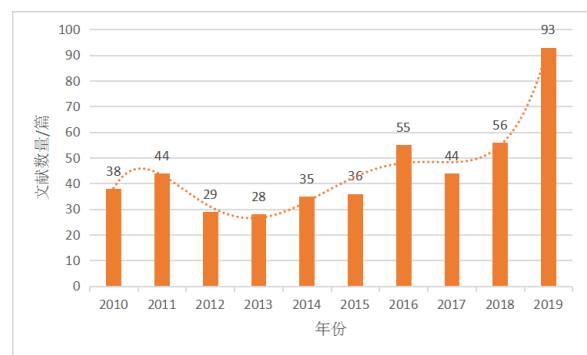


Figure 1. Trends in the amount of articles published (2010-2019)

In the context of “dualization” of urban and rural development, the amount of rural planning publications from 2010 to 2015 was in a low-level equilibrium stage; there was a large increase in 2016, which is similar to Zhao Hongjuan<sup>[7]</sup> using the period from 2004 to 2018 as the time period. The conclusions drawn from the research on all the literature data of CNKI under the same search conditions are consistent. Zhao Hongjuan believes that the 2015 Ministry of Housing and Urban-Rural Development’s “Guiding Opinions on Reform and Innovation to Promote Rural Planning Work in a Comprehensive and Effective Way” was released, highlighting the importance of rural planning. Attracted more practitioners to participate in the thinking of rural planning<sup>[8]</sup>. The author of this article analyzes the mutation map (Figure 8) and evolution time zone map (Figure 6) of Citespace, and believes that it is the result of the policy guidance and attention increase of the “beautiful countryside” in 2016.

In 2017, when the rural revitalization strategy was proposed, Zhao Hongjuan’s publication volume doubled and surged. The reason for the surge was that the deployment of the national strategy for rural revitalization made rural planning attract unprecedented attention from the planning academia<sup>[7]</sup>; and the core literature in this article in 2018. However, it remained stable and did not show any growth. The reason is that the unprecedented focus on the long-term weak background of rural planning before the lack of accumulation of theory and experience, so that the research on the “planning first” and “strengthening planning guidance” proposed in rural revitalization will be conducted in the short term. Lack of corresponding support and insufficient depth.

The number of publications in 2019 showed a doubling and a sharp increase. At this stage, through the accumulation of research on rural revitalization and the background of the issuance and implementation of the “Several Opinions”, the number of authors who conducted research in the field of rural planning under the background of the new land and space planning increased, and rural planning The field is gradually being valued by scholars and has become a hot spot of current research and attention.

## 4. Research Hotspots and Trend Analysis

### 4.1 Keyword Co-Occurrence Analysis

Research-centric, high-frequency keywords can reflect the research hotspots of a certain subject area for a period of time. Based on the viewpoint of knowledge theory research<sup>[9]</sup>, keywords reflect the author’s main point of view, and also highly condensed and condensed the author’s article content. Generalize. Through the analysis of key words in the literature related to rural planning, research hotspots in this field can be better discovered. In the Citespace parameter setting, set Node Types to “Key Word”, and the other parameters remain unchanged, perform visual analysis, and obtain the rural planning keyword co-occurrence knowledge map. Keywords are represented as nodes in the graph. Each keyword corresponds to a node. The centrality of the node is used to measure the connection effect of network nodes in the overall network. The higher the centrality, the larger the node, which means it is a staged research hotspot<sup>[10]</sup>. Sorting statistics according to centrality and word frequency, according to the frequency of keyword appearances and intermediary centrality ranking results show that keywords such as rural planning, rural revitalization, urban-rural planning, rural tourism, beautiful villages, and rural landscapes appear most frequently in the past decade. Research hotspots are concentrated; it can be seen how to realize the rural revitalization strategy through the research on rural planning. The core goal of research in the field of rural planning in the future.

According to the statistics of centrality and word frequency, the distribution table of high-frequency keywords in rural planning research is obtained (as shown in Table 1). The keywords of urban and rural planning and Rural Revitalization in Figure 1 have the highest frequency in Table 1, which are 76, 27 and 27 respectively, and the centrality reaches 0.61, 0.33 and 0.29 respectively, which is the most critical node and turning point in the field of rural planning research, It is a hot research topic at present.

**Table 1.** Top 10 key words of rural planning research

Serial number	key word	frequency	Centrality particular	year	Serial number	key word	frequency	Centrality particular	year
1	Rural planning	76	0.61	2010	6	Rural landscape	18	0.19	2010
2	rural vitalization	27	0.33	2018	7	rural	15	0.09	2011
3	Urban and rural planning	27	0.29	2010	8	Overall planning of urban and rural areas	14	0.19	2010
4	rural tourism	24	0.17	2010	9	New countryside	11	0.01	2010
5	Beautiful countryside	22	0.15	2015	10	Rural Governance	10	0.05	2015

## 4.2 Keyword Cluster Analysis

The research topic of the paper highlights the keywords of academic literature. The distance between keywords is studied by clustering algorithm, and keywords with similar content are clustered and classified, and cluster groups of different topics can be found to characterize academic research in different periods. Appearance, the dynamics of academic research in a certain period of time can be captured through a specific focus point<sup>[11]</sup>. Studies have shown that the Q value is generally in the [0,1) interval, and Q>0.3 means that the divided community structure is significant. When the S value is 0.7, the clustering is highly efficient and convincing, if it is 0.5 Above, clustering is generally considered reasonable<sup>[12]</sup>. The module value Q=0.5948 and the average contour value S=0.5494. The results show that the keyword clustering structure shown is significant and the classification is reasonable.

According to the cluster name and the main keywords contained in the cluster, we can further study the specific connotation of specific topics (Table 2). According to the analysis of Figure 2 and table 2, the research on rural planning since 2010 is mainly based on the theory of urban and rural planning. Under the strategy of “Rural Revitalization”, it has been carried out around rural tourism, beautiful countryside, rural governance and other aspects.

According to the analysis of Table 1 and table 2, the study of rural planning from 2010 to 2020 did not pay attention to the study of land spatial planning. In the same way, the hot keywords of land and space planning (Table 3) do not appear high-frequency words of rural planning. The weak relationship between rural planning and land spatial planning means that there is a lack of integration of land use planning, regional planning and Urban-Rural Planning in rural planning research for a long time.

**Table 2.** Key words clustering table of rural planning

Cluster number	Cluster name	fre-quency	Contour value	Main keywords included
#1	Overall planning of urban and rural areas	100	0.590	Urban rural integration, rural tourism, beautiful countryside and village planning
#2	rural vital-ization	72	0.500	Rural revitalization, planning strategy, rural and pastoral complex
#3	plan	48	0.470	Planning, evolution, urban and rural land use, land development rights
#4	landscape planning	49	0.250	Rural landscape, new countryside, ecological civilization and landscape planning
#5	sustainable develop-ment	26	0.070	Rural governance, rural construction, public goods and sustainable development

**Table 3.** Top 10 key words of land spatial planning research

Serial number	key word	fre-quency	Cent-rality	Serial number	key word	fre-quency	Cent-rality
1	Land space planning	157	0.54	6	Space Governance	12	0.11
2	spatial planning	47	0.29	7	Special planning	12	0.10
3	Multi planning in one	36	0.47	8	Ecological Civilization	11	0.10
4	Territorial space	27	0.22	9	Use control	10	0.09
5	Spatial planning system	27	0.18	10	rural vital-ization	9	0.03

The six clusters of rural planning, rural tourism, rural revitalization, rural areas, beautiful villages, and urbanization constitute the main research sections of rural planning in the past ten years. Compared with the clustering done by Zhao Hongjuan<sup>[7]</sup> in 2018, this paper are more rural revitalization clusters. The main keywords of this cluster include: planning guidance, planning paths, planning strategies, rural development, rural revitalization, land and space planning, use control, etc. It can be seen that after 2018, under the background of rural revitalization strategy, rural planning research has begun to undergo transformation, and more attention has been paid to the guidance, path, strategy, and regulation of rural planning, which are strategic and government regulatory research fields with strong public management attributes. It also indicates that under the new background of land and space planning, in order to deal with new opportunities and challenges, break the single barrier of engineering thinking, and integrate planning research with public management and government regulation is the transformation and evolution direction of rural planning research.

## 5. Research Hotspot Evolution and Trend Analysis

Through the hot spot evolution and frontier dynamic analysis of the retrieval data, we can get the specific evolution path of the key points of rural planning research in each period, as well as the generation node, peak node and cooling node of the hot spot, so as to more intuitively summarize the hot spot evolution law of rural planning. Although the research of Zhao Hongjuan<sup>[7]</sup> (2018) and Sun Ying<sup>[13]</sup> (2017) did not draw the timeline map of CiteSpace, their research evolution rules obtained



through literature research and field research, such as Sun Ying's research conclusions on public participation, rural governance, new urbanization and planners; Zhao Hongjuan's research conclusions on foreign planning experience and rural landscape characteristics are in line with the linear law presented in this paper, which proves the scientificity and reliability of her research. The rural planning from 2018 to 2019, starting from the Rural Revitalization node, will be the research hotspot of land and space planning, planning strategy, targeted poverty alleviation, big data, etc., and the prospect of Sun Ying's planning method of paying attention to practice, exploring multiple needs, and constructing the theoretical method of rural Planning<sup>[13]</sup>; Zhao Hongjuan's proposal that rural planning becomes the driving force of Rural Revitalization and is suitable for implementation is consistent with the prediction of evolution trend, which confirms the scientificity and feasibility of CiteSpace in the field of hot spot analysis and evolution trend prediction of rural planning.

According to the time dimension, the evolution of rural planning hotspots is analyzed: rural planning → rural tourism → beautiful countryside → Rural Revitalization → planning guidance and planning strategies are the main evolution trends in this research field. This evolution law reflects the promotion of the public policies proposed by the state for rural areas to the research hotspots in the field of planning. With the establishment of the land and space planning system in the new era, the research focus of rural planning has evolved from the Rural Revitalization in the National Rural Revitalization strategic plan (2018-2022) put forward by the state in 2018 to the planning strategy and planning guidance after the release of several opinions in 2019, which has more public management policy nature. It also brings a lot of pressure and challenges to the rural planning which is still in the traditional thinking mode of "planning on planning" and "technology on technology".

## 6. Dynamic Analysis of Research Frontiers

Research front (Research front) shows the new progress and new trends in scientific research, and is the subject and direction of research with innovation, development and interdisciplinary<sup>[14]</sup>. Kleinberg believes that Burst Detection is suitable for identifying emerging research frontier concepts, and it can dig out keywords with low frequency but high frequency change rate<sup>[15]</sup>. Using Burst Terms to detect mutation words, the frontier research fields of rural planning in each period of mutation words, their strength and mutation time are shown in Figure 2.

### Top 8 Keywords with the Strongest Citation Bursts

Keywords	Year	Strength	Begin	End	2010 - 2019
New rural construction plan	2010	3.0819	2010	2011	
Overall planning of urban and rural areas	2010	4.2802	2010	2012	
rural tourism	2010	4.6947	2010	2013	
New countryside rural landscape architecture	2010	3.7307	2010	2012	
Beautiful countryside	2010	5.7374	2010	2011	
rural landscape architecture	2010	2.5416	2014	2016	
Beautiful countryside	2010	2.7481	2015	2016	
Beautiful countryside	2010	5.2402	2015	2019	

Figure 2. Major mutations in rural planning

Burst Detection shows that the Burst intensity of rural tourism is relatively insufficient, but the mutation time is the earliest and the duration is the longest. It is the main component of my country's rural planning research before 2015; the strongest mutation word is the new rural and Beautiful Country, New Countryside and New Countryside Construction are the main lines of research before 2012, and Beautiful Country is the main line of research that has continued since 2015. The theories and empirical cases are relatively mature. However, the frequent occurrence of "rural revitalization" in the key words did not show a sudden change, indicating that with the deployment of the national strategy for rural revitalization, rural planning has received extensive attention from planning scholars, but the long-term disadvantaged background of rural planning has made scholars think about rural areas. The research on "planning first" and "strengthening planning guidance" proposed in the revitalization process lacks scientific theoretical support and experience accumulation. It needs to be further strengthened in terms of how to transform traditional thinking, break professional barriers, and embody strategic planning strategies and planning guidance. The depth of research. At present, the research of rural planning is entering a new era of land and space planning led by rural revitalization, fully integrating the theory of public management disciplines and government control tools, improving the sustainability and operability of rural planning strategies, and firmly planning ahead in the rural revitalization strategy. The theoretical foundation of the plan and strengthening the leading function of planning are the top priorities for future rural planning research.

## 7. Conclusions and Prospects

Through the visual analysis of the knowledge map of Citespace, it is concluded that the current rural planning research has not formed a core author group, and there are more independent research among scholars and little overall contact; the overall cooperation of the publishing

organization is less, the subject area is single, and the professional departments and majors of universities are concentrated. Planning and Design Institute: Urban and rural planning and rural revitalization are currently the most critical nodes and turning points in the research field of rural planning. How to realize the strategy of rural revitalization through research on rural planning is the core goal of research in the field of rural planning in the future; After 2018, the research on rural planning has begun to undergo transformation, paying more attention to the guidance, path, strategy, and regulation of rural planning in strategic and government regulatory research fields with strong public management attributes. It also indicates new developments in land and space planning. Under the background, in order to cope with new opportunities and challenges, the planning concept of single engineering thinking to solve problems represented by “planning on planning” and “technology on technology” is gradually being broken, exploring the depth of urban and rural planning and public management disciplines Integration, the use of public management related theories and government control tools to implement the goals of “planning first” and “strengthening planning guidance” proposed in the rural revitalization strategy, and improving the sustainability and operability of rural planning strategies are the future of rural planning research The research hotspots and evolutionary trends of rural planning are also the top priority of future rural planning research. We believe that with the release of the “Several Opinions” and the introduction of public governance concepts, the development context in the field of rural planning will surely become clearer and effective, the planning leading role of the rural revitalization strategy.

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