

China Network Public Opinion Guidance Research Hotspots and Development Situation Analysis-Quantitative Analysis Based on CiteSpace Knowledge Map

Yanfang Liu and Pengyao Wang

School of Management, Harbin Normal University, 309 Social Science Building,
Harbin Normal University, No. 1 Shida Road, Limin Development Zone, Harbin
Email: c_lyf@163.com, wangpengyao1229@163.com

Abstract. Through the quantitative analysis of related literatures, it reveals the research hotspots of china network public opinion to guide this research field, and provides theoretical research for the further development of academic research in this field and the improvement of China's network public opinion guidance work level. Using CiteSpace software to use 2009-2018 as the specified time period, the Chinese literature on the theme of "Network Public Opinion" in China Knowledge Network (CNKI) is used as the source data, based on CiteSpace's visualization technology, the key Word clustering maps, research organization timing maps, and institutional and author cooperation networks are analyzed. It is concluded that the focus of China's network public opinion guidance research mainly focuses on the four aspects of the main body, object, carrier and content of the network public opinion.

1. Introduction

With the development of information technology, network public opinion, which is based on the network for information exchange and dissemination, has begun to enter the public's attention. Network public opinion is a collection of public opinions and opinions on public events expressed through network platform [1], network public opinion is diverse and coexists with accumulation and elimination, Positive and positive network public opinion helps to build a harmonious network environment, negative network public opinion is very easy to cause the formation of network crisis. Therefore, for the healthy operation and development of the network as an information exchange platform, while fully guaranteeing the public's enthusiasm for participation in social affairs, do a good job of guiding online public opinion.

The guidance of network public opinion is a dynamic process that makes the attitude of network public change to the correct direction of network public opinion. In 2016, General Secretary Xi Jinping emphasized the need to improve the guiding power of news and public opinion at the Party's Symposium on news and public opinion work [2], in the latest report of the Nineteenth Congress, General Secretary Xi Jinping stressed once again the importance of strengthening content construction, establishing a comprehensive Network governance system [3]. Thus it can be seen, the guidance of network public opinion is an indispensable link in the development of network public opinion. it has its inevitability to become the focus of academic discussion and research.



2. Data Sources and Research Methods

2.1. Data Sources

In order to have a more comprehensive understanding of the research results on the guidance of network public opinion in China, this paper collects CNKI journals with the theme of "Network Public Opinion Guidance" from 2009 to 2018 as initial data. Search the topic "Network Public Opinion Guidance" in the column of journals, the designated period is from 2009 to 2018, a total of 2808 valid literatures were obtained through further screening. The selected literature covers a wide range and has a large number of representations, which can be used in this study.

2.2. Research Methods

Compared with other visual analysis software, CiteSpace can intuitively display the basic general situation and information of the research and development guided by network public opinion; it is more suitable for observation and analysis of a research topic [4]. Previous reviews in this field mostly analyzed and commented on the relevance and difference of related topics from the individual judgment of scholars, this way is easily influenced by the subjectivity of scholars themselves [5].

This study uses CiteSpace software to set Time Slicing as from 2009 to 2018. In node type, keywords, institutions and authors were selected and the top 50 variables were screened to generate associated maps. It can clearly show the research hotspots in this field, and understand the degree of influence and cooperation of network theory of institutions in recent years by observing charts.

3. Basic Survey of Research on Network Public Opinion Guidance

In this paper, Citespace is used to make a detailed econometric analysis from the annual volume of papers, disciplines, classification and influence of research institutions, cooperation between institutions and authors, keyword clustering and compactness.

3.1. Annual Volume of Papers Analysis

The number of publications is the primary indicator of research development in a field, the change of the number of publications with the years can clearly describe the hot issues and different stages of development in this field. Combining with Figure 1, we can divide the research into three stages: 2009-2012 is the high-speed development stage of our country's network public opinion guidance research, at this stage, the focus of network public opinion is more, for example, the events of Wukan and Guo Meimei in 2011 and the controversy between Fang Zhouzi and Han Han in 2012, these hotspots have aroused the interest of many scholars, which makes the volume of publications in this stage show a rapid growth trend. The second stage is from 2013 to 2014, during this period, the annual number of papers was maintained at about 300, which shows that the upsurge of research on the guidance of network public opinion has not yet receded. The third stage is from 2015 to 2018, at this stage, the volume of publications continues to grow but at a slower pace, but it also shows that the guidance of network public opinion in this field is still valuable and we need further attention and research. The research on the guidance of network public opinion in China is very fruitful, the attention received is also high, from the content of published articles, on the basis of the existing theory of network public opinion, experts and scholars began to pay more attention to the impact of network public opinion on people's social life, and began to emphasize that the government should adopt the necessary guiding means and effective guiding measures to help network public opinion develop healthily.

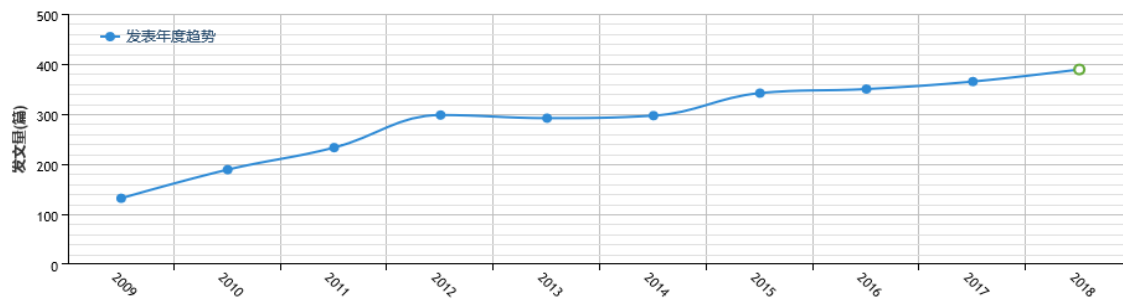


Figure 1. The Trend Map of the Number of Research Documents on Network Public Opinion Guidance in China from 2009 to 2018

3.2. Subject Analysis

Based on 2808 Chinese documents retrieved, this paper uses co-occurrence analysis to calculate the top ten subject names and the number of publications of the key word " Network Public Opinion Guidance", as shown in Table 1. Network public opinion guidance is a cross-disciplinary research area. Combined with Table 1, we can easily see that the subject of Journalism and communication occupies a considerable advantage in this research area. The number of publications of literature accounts for 72.90% of the total number of publications, which is far higher than that of other disciplines, followed by education and public management, which accounts for 16.42% and 9.47% respectively. It can be seen that at present, the research of network public opinion orientation in China mainly focuses on the fields of news, education and public administration (accounting for 98.79% of the total number of publications), while other disciplines do not pay enough attention to the research of network public opinion guidance, and the proportion of publications in the total number of publications is less than 2%. This kind of research situation makes our view on the guidance of network public opinion incomplete. To this end, scholars from other disciplines should be encouraged to enter the research field of guidance of network public opinion and put forward some views and suggestions from their own disciplinary point of view.

Table 1. Major Disciplines of Network Public Opinion Guidance Research in China

serial number	subject	number of documents	percentage /%
1	journalism and communication	2047	72.90%
2	education	461	16.42%
3	public management	266	9.47%
4	political science	154	5.17%
5	sociology	129	4.68%
6	public security	67	2.10%
7	law	59	1.78%
8	Marxism	48	1.78%
9	military science	41	1.45%
10	economics	26	1.13%

Experts and scholars in China conduct research on network public opinion guidance based on the theory of different disciplines. Through reading and sorting out a large number of documents, the research in this field can be divided into the following categories according to different disciplines:

Firstly, the relevant research based on the theory of news communication. Some scholars have explored the research of network public opinion guidance from the perspective of interrelated multi-disciplines [6]. It emphasizes that the government should correctly guide the role of network public opinion leaders in network public opinion, and plays a positive role in creating a healthy public opinion environment for society [7]. They also suggest that the network media should guide the network public opinion by establishing democratic interest expression [8].

Secondly, on the basis of educational theory research. In recent years, there have been many negative public opinion incidents in universities. It is very important for the harmonious development of campus environment to grasp the guidance of network public opinion in universities. Based on the public opinion environment of universities to analyze the current situation of guidance and explore guidance strategies, explore the practical guidance of network public opinion in Colleges and universities is the current research hotspot in this field [9]. At the same time, guiding the harmonious and healthy development of network public opinion is also a new problem faced by colleges and universities in psychological and ideological education for students [10].

Thirdly, relevant research based on public management theory. Improving network governance and strengthening the guidance of network public opinion are the important subjects of strengthening social management at present [11], each scholar and Research Institute firmly grasps the existing hot spot network public opinion event, proceeds from the realistic case, follows the intrinsic law of the system, carries on the research to the hot spot network public opinion dissemination characteristic and its guiding mechanism [12].

3.3. Classification of Research Institutions and Analysis of Their Impact

In order to find out the core research institutes of network public opinion guidance research in China, the number of papers published by various research institutes in this field between 2009 and 2018 is counted, among which the top ten are shown in Figure 2. These research institutes can be roughly divided into four categories: The first category is media colleges and universities, which mainly study how to guide network public opinion under different media. The second category is normal colleges and universities, which mainly study the management and guidance of campus network public opinion. The third category is comprehensive institutions of higher learning, which study the guidance of network public opinion from various angles such as sociology, economics and Library and information science. The fourth category is political and legal institutions of higher learning, which mainly studies the security issues in the dissemination of network public opinion and the legal norms of the guidance of network public opinion. Among them, China Media University takes the first place in the amount of publications with its great advantages, which fully demonstrates that this institution has a strong strength in the research of network public opinion guidance, and indirectly reflects its influence in the research of the direction of guiding news communication.

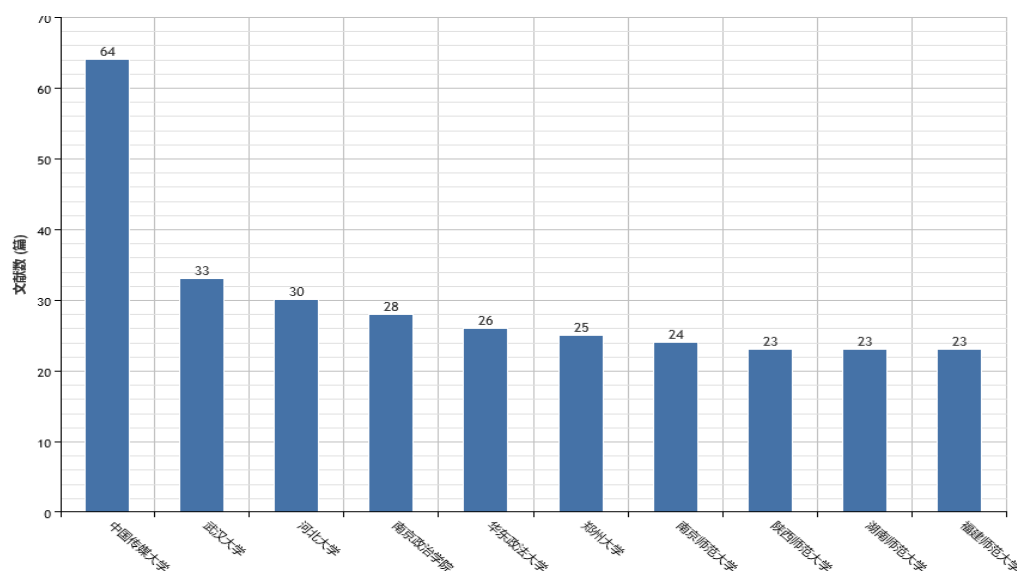


Figure 2. Top 10 Research Institutes in the Number of Papers Published between 2009 and 2018

To statistics the cooperation among research institutions in this field, the cooperation diagram of research institutions shown in Figure 3 is generated. The size of the circle is positively related to the number of articles sent. The larger the circle is, the more articles sent by the organization in that year.

It can be seen from the figure that the research institute of journalism and communication of Hebei University ranks first in the volume of publications in this field. The results in the upper left corner of the graph show that there are 178 related research institutions in the cooperative network, but the number of links indicating these inter-agency cooperative relationships is only 21, and the overall density of the network is only 0.0013. This shows that the research team of network public opinion guidance in our country is relatively scattered, and there is little cooperation research between the team and the team. In the future, research institutes in this field should strengthen their cooperation, further expand their disciplines, and conduct cooperative research of interdisciplinary and joint discussion, and on the basis of cross-disciplinary research, we should strengthen the integration of multi-disciplinary research ideas and research methods, and create more and better research results through multi-party collaboration for the frontier issues in the field of research.

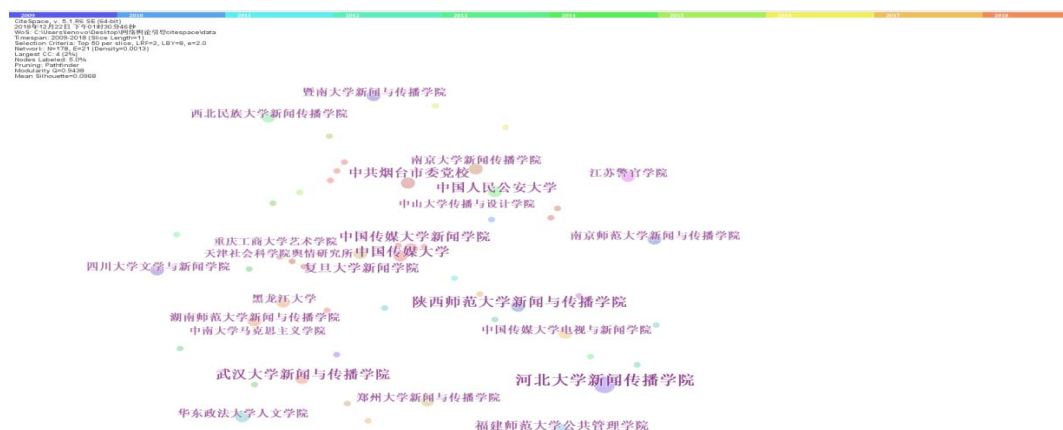


Figure 3. Research Institution Cooperation Diagram

3.4. Formatting Author Names

Authors who have published more than three times are regarded as leading authors in the field of research. From 2009 to 2018, The top three authors in this field are: Fan Jinshan (The CPC henan provincial party committee party school), Jiang Shenghong (Institute of Public Opinion of the Tianjin Academy of Social Sciences), Lin Ling (East China University of Political Science and Law). These authors are the main research force of their organizations in this field, and they have made a lot of contributions to the research of network public opinion guidance. Looking at the data in the author's cooperative map in Figure 4, we can find that the author's cooperative network contains only 40 connections, and the overall density of the network is only 0.0029, which is at a very low level of cooperation. This shows that most of the research in the field of network public opinion guidance in China is done by the author alone, and few scholars conduct cooperative research, which makes the research in this field more decentralized, which largely limits the development of research in this field. In the context of the prosperity of a large number of researchers, it must be clearly recognized that the lack of scientific research cooperation "follow the trend" research is difficult to produce a leading figure with sufficient academic influence. In this regard, the state, universities and academic groups should build a platform for learning and communication for scholars of different institutions and disciplines, and provide some support for research funds, so that these scholars can break the barriers between institutions and disciplines, establish scientific cooperation and create more innovative research results.

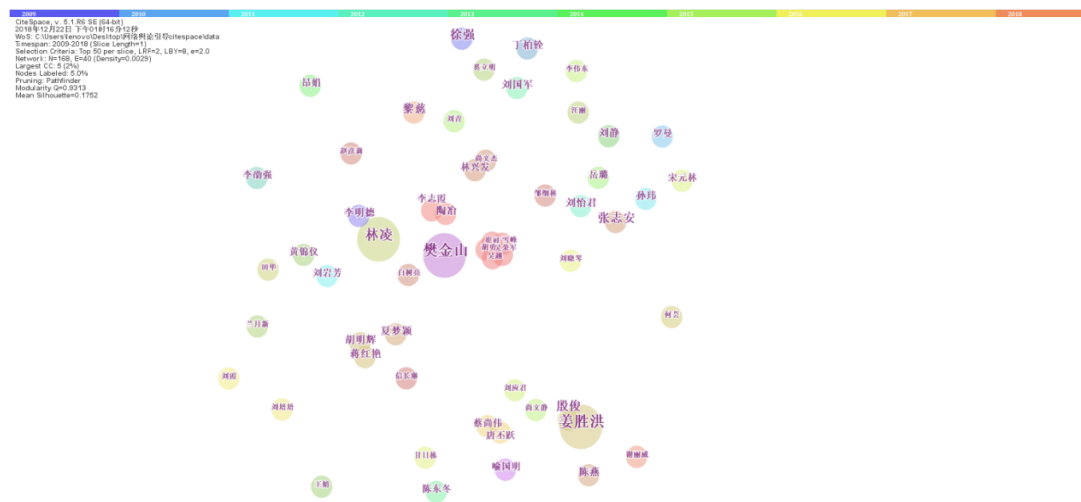


Figure 4. Author's Cooperative Diagram

3.5. Keyword Co-occurrence Clustering Analysis

In order to observe the location and objective law of keywords in social network, analyze the research hotspots in the field of network public opinion guidance, and conduct co-occurrence cluster analysis of keywords through CiteSpace. After filtering out the smaller clusters, only the main ones are displayed, there are 14 clusters as shown in Figure 5, the number of clusters is between 0 and 13. The smaller the cluster number, the larger the cluster size. The large-scale clustering mainly includes clustering 0 "emergencies", clustering 1 "network media", clustering 2 "network public opinion", clustering 3 "public opinion guidance", clustering 4 "emerging media" and clustering 5 "micro-era". These clustering results show that in the past ten years, the research focus of network public opinion guidance mainly concentrates on the following aspects: analysis of network public opinion on emergencies, the role of public opinion guidance in network media, guidance of colleges and universities to college students' network public opinion, how opinion leaders play their role in network public opinion guidance, how to make good use of the micro-era in the guidance of public opinion.

Figure 5 The calculation results in the upper left corner show that the number of network nodes in the keyword coexisting network is 227, the number of connections is 225, the overall density of the network is 0.0107, the modularity of the network is 0.8085, and the homogeneity of the network is 0.7369(The reliability will be reduced when the internal members of the cluster are smaller). Overall, the network density of keyword co-occurrence is not high, and the overall structure is still relatively scattered, which makes it difficult to form a systematic research system. Therefore, researchers need to calm down, take full account of the frontier research hotspots in this field, and concentrate more on the research topics.

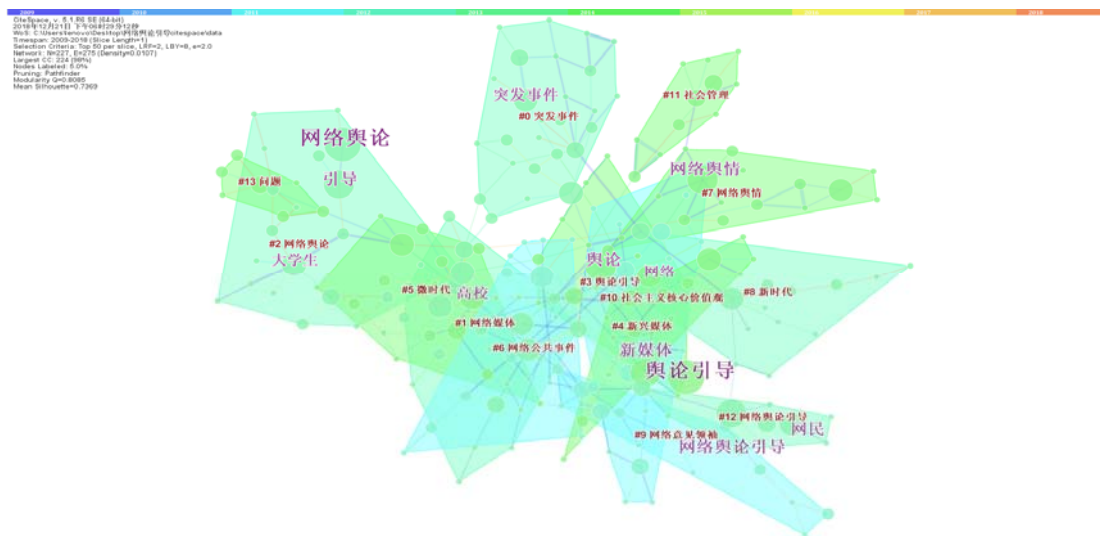


Figure 5. Keyword Co-occurrence Clustering Diagram

3.6. Closeness Analysis of Keyword Clustering

Through clusters operation and Export operation in CiteSpace, we get the data of keyword clustering compactness as shown in Table 2 and statistics of keyword clustering frequency over 100 times in 2009-2018 as shown in Table 3. From the data in these two tables, we can find that there is no positive or negative linear relationship between the size of clustering scale and its compactness (centrality). That is to say, the frequency of keywords with strong clustering compactness is not necessarily high, and the degree of clustering compactness of keywords with high clustering frequency is not necessarily strong. The compactness of clustering mainly depends on the correlation of content. The deeper the color of the clustering blocks, the higher the compactness. From the overall characteristics of research hotspots, the research topics of network public opinion guidance are rich, but the clustering characteristics between different topics are not obvious enough. Although there is a certain correlation between research hotspots, there is no representative clustering structure, and its research is still not concentrated and in-depth.

Table 2. Keyword Clustering Compactness Table

cluster number	clustering compactness	cluster number	clustering compactness
0	0.849	7	0.891
1	0.818	8	0.905
2	0.923	9	0.917
3	0.903	10	0.928
4	0.885	11	0.973
5	0.785	12	0.940
6	0.844	13	0.968

Table 3. Key Words that Appeared more than 100 Times in 2009-2018

frequency of occurrence	key word	subordinate cluster number
848	network public opinion	2
759	public opinion guidance	3
238	network public opinion guidance	12
228	guide	2
224	network public opinion	7
192	new media	3
169	public opinion	3
135	netizen	12
134	emergencies	0
117	universities	5
107	network	3
102	university student	2

4. Research Prospect of Network public Opinion Guidance

From the following aspects, this paper discusses and analyses the future research trends in the field of network public opinion guidance in China.

4.1. Research on the Subject of Network Public Opinion Guidance

The hot labels of this research direction mainly include: government, local government, colleges and universities, leading cadres of Party and government and public prosecution organs, etc. The characteristics of network anonymity, information fragmentation and the increasing number of netizens make the environment of network public opinion more complex and disorderly. Cyber rumors and violence, netizens' emotional speech and other phenomena occur from time to time. As an authoritative subject oriented by network public opinion, the government encounters many difficulties in the administrative control of network public opinion [13]. Therefore, the research on the challenges and Countermeasures of the guidance of government network public opinion has become a hotspot of current research on the guidance of network public opinion. The widespread popularization and application of the network in university campus obviously makes the campus network a magnifying glass of students' ideology and culture in public opinion, and highlights the function of public opinion [14]. Universities are the main position to receive and disseminate network public opinion. As the backbone of social development, students' value orientation and recognition of society are the important basis for future social evaluation. Therefore, how to effectively guide college students with immature social cognition and network standardization ability is the focus of college students' work [15]. Most of the scholars who study the network public opinion guidance for college students are university teachers or administrators. Their research can be operated and operated in schools, and the results have more practical guiding significance.

4.2. Research on the Object of Network t Public Opinion Guidance

The main hot tags in this research direction are: information publishers, network opinion leaders and college students. The information publishers mentioned here are netizens. Netizens are a bounded rational group with complex elements and huge numbers. As of June 30, 2018, the number of netizens in China was 802 million, and the network penetration rate was as high as 57.7% .In the network public opinion, the netizen is both the subject and the object. As the subject, the netizen is the producer, publisher and judge of information, while as the object, the netizen is the guided object [16]. From the visual analysis of the hot keywords, we can see that the two most important groups in the research of online public opinion guiding object are the online opinion leaders and college students. Individuals or organizations with certain influence in the network platform or a certain network community are called network opinion leaders. These network public opinion leaders express their

subjective opinions on hot social events through the network platform. In a short time, these comments can affect the emotional views of ordinary netizens in a wide range, and then guide the overall trend of network public opinion. However, we should clearly recognize that the role of these "leaders" is not always positive, sometimes too radical and emotional views will make the network unreasonable expression and Conformity Phenomenon and other negative effects are infinitely magnified. At present, the research on online opinion leaders mainly focuses on exploring more positive roles of online opinion leaders and consciously cultivating online opinion leaders with social responsibilities. In addition, due to the unstable values and social cognition of College students, there is often a strong personal subjectivity in the network expression, so the guidance of network public opinion of college students has become a hot topic for researchers.

4.3. Research on the Carrier of Network Public Opinion Guidance

The hot tags of this research direction are: mainstream media, traditional media, network media, new media, self-media, university new media, government official website, micro-era, micro-blog, BBS, micro-letter, etc. The network public opinion, which takes the emerging network media as the main carrier, breaks the monopoly of social information by the government and the traditional mainstream media, and makes everyone in the network become the participants of social events. The wide and rapid dissemination of new media has brought many difficulties to the government's guidance of network public opinion. Therefore, using the advantages of new media to solve the new problems arising from government guidance under the new situation is not only the focus of government work, but also the research hotspot reflecting the needs of the times [17]. Weibo and Weixin have now become indispensable tools for people to communicate and obtain information, the emergence of government microblogging provides a new way for government management. Strengthening the guidance of network public opinion has become the necessary work of government management.

4.4. Research on the Content of Network Public Opinion Guidance

The hot tags of this research direction are: sudden public events, unconventional events, network public events, network group events, natural disasters, network rumors, network public opinion, network violence and so on. Most of the incidents that need the guidance of network public opinion are unhealthy ones that have negative effects or can cause heated discussion among netizens. The abrupt and unconventional events are the beginning of the network public opinion, and the network public opinion is the driving force of the expansion of these abrupt events, which affects the trend of these events. Because of network anonymity and fragmentation of information, it may cause the generation and dissemination of negative network public opinion, and it may also lead to anomie phenomena such as network rumors and network violence. Therefore, in order to create a healthy network environment, we must adhere to the guidance of network public opinion, explain the truth in time, and strangle the bad network public opinion in its infancy. It can be seen that the guidance of network public opinion generated by sudden social events and the guidance of network anomie phenomenon have become a common concern of scholars.

In the future, the development trend of the research field of network public opinion guidance in China will be a comprehensive study of the characteristics and ways of network public opinion guidance in various environments from the specific reality. The ever-developing new media is gradually influencing the formation and development of network public opinion in its unique way, and the research on the guidance of network public opinion is becoming more and more important.

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