Advances in Social Science and Culture
ISSN 2640-9682 (Print) ISSN 2640-9674 (Online)
Vol. 7, No. 3, 2025
www.scholink.org/ojs/index.php/assc

Original Paper

Secondary Public Opinion Network Sentiment Analysis of Public Events Based on Social Network Analysis: Taking the Weibo topic # Huang Yangtiantian's Father Under Investigation # as an Example

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Received: April 24, 2025 Accepted: May 22, 2025 Online Published: June 09, 2025

doi:10.22158/assc.v7n3p93 URL: http://dx.doi.org/10.22158/assc.v7n3p93

Abstract

In the digital era, the "secondary" public opinion phenomenon in public events is becoming more prominent. Original events can lead to new issues due to improper official responses or conflicting social sentiments, worsening public opinion crises. This study focuses on the Weibo topic #Huang Yangtiantian's Father Under Investigation#, using social network analysis to build a public opinion dissemination network based on Weibo retweets. It explores the characteristics of secondary public opinion spread. Results show the network has high sparsity, core node dominance, strong community differentiation, and flat transmission. Information spreads rapidly but rational discussion is limited, increasing governance difficulty. The study offers a social network analysis perspective for public opinion management, stressing the importance of optimizing information dissemination paths, guiding core nodes, and breaking community barriers to enhance guidance effectiveness and maintain social stability and government credibility.

Keywords

Secondary public opinion, Social network analysis, Weibo, Public opinion governance

1. Introduction

The deep development of the digital age is changing the environment of public opinion dissemination. The popularity of mobile Internet and social media has enabled everyone to become an information disseminator, and the traditional media-dominated public opinion field is gradually transforming into

an open space with multiple participants. While this change has improved the efficiency of information dissemination, it has also increased the complexity of the public opinion field: information about hot events often spreads across the Internet in minutes, and self-media often use exaggerated headlines to attract traffic, making emotional content more likely to spread; Algorithmic recommendations, on the other hand, reinforce the "information cocoon", leading to growing differences in perception of the same event among different groups. Against this backdrop, the evolution of public opinion in public events shows a significant "subbiochemical" feature - original events often give rise to new issues due to improper official responses, one-sided interpretations by opinion leaders, or social sentiment opposition, triggering a secondary public opinion crisis. The "sky-high price earrings" incident involving Huang Yangtiantian in 2025 is a typical example: the celebrity Huang Yangtiantian's wearing of what seemed to be 2.3 million yuan worth of Graff earrings sparked original public opinion, and netizens initially questioned how ordinary families could afford luxury goods and the authenticity of the earrings; Later, it was revealed that her father was a former civil servant in Ya 'an, and that he registered a business during his tenure as a civil servant, embezzled earthquake relief funds by using public power and started a biotech company to make money from the national disaster during the pandemic. The focus of public opinion shifted from the earrings themselves to the integrity of public officials. On May 22, the city of Ya 'an announced that his father had "engaged in illegal business and concealed his second child", but did not specify the source of the funds for the earrings and other core issues, which sparked widespread dissatisfaction among netizens, accusing the announcement of "evading the main issue". Not only did the announcement fail to quell the doubts, but it also sparked secondary public opinion - the public raised more questions about the content of the announcement and created a crisis of trust in the fairness of the local government's self-examination, and the focus of the discussion shifted from individual incidents to widespread doubts about the connection between government and business. This case validates the core contradiction of secondary public opinion in the digital age: strategic deviations in official responses (such as selective disclosure of information) not only fail to dispel doubts but also act as a catalyst for the fission of emotions, highlighting the new paradigm challenge in public opinion governance.

This study focuses on the secondary public opinion triggered by the announcement of the test results of Huang Yangtian's father, analyzing its dissemination characteristics from the perspective of social network analysis. This helps to more comprehensively grasp the complex dissemination laws of online public opinion. The research also has significant practical value. Currently, online public opinion events occur frequently, and the public opinion response capabilities of government departments face many challenges. This study can assist government departments in identifying potential risk points and key links in the dissemination of public opinion in advance, thereby enhancing the efficiency of public opinion response and strengthening government credibility. At the same time, it also provides useful references for online platforms to optimize management strategies and create a healthy online public opinion environment, so as to better cope with the complex online public opinion situation at present.

2. Literature Review

2.1 Social network Analysis

System Network Analysis (SNA) is a quantitative analysis method based on mathematical theories such as graph theory, used to study social relations and network structure (Otte & Rousseau, 2022). Social network theory has been widely applied in the study of public opinion events. By constructing a social network system based on objects and relations, it can objectively present the complex connections among netizens (Liu, 2013). From a macro perspective, SNA can be used to explore issues such as the network structure characteristics, density, propagation speed, and evolution and evolution process of information dissemination in emergencies, thereby grasping the overall situation of public opinion; At the micro level, SNA can study the topological characteristics of online network platform users, discover online opinion leaders, and predict the online behavior of each individual opinion with algorithms such as machine learning (Zhang, Zhang, Li et al., 2023).

A large number of empirical studies have been carried out in the academic community using social network analysis. Zhao and Wang (2018) used the social network analysis method to study the identification of key nodes of online public opinion in emergencies. Through the analysis of network community graphs and other means, key nodes such as opinion leaders in the public opinion dissemination network were identified, and the internal structural characteristics and evolution patterns of public opinion dissemination were explored. Qiu (2013) used the complex network analysis tool Gephi to construct a microblog public opinion network map, then observed the composition and network structure of microblog user relationships under a certain hot topic, and based on this, proposed strategies and suggestions for guiding and controlling the dissemination of microblog public opinion information. Yang et al. (2022) took microblog emergencies as an example, constructed a microblog public opinion dissemination network for emergencies, identified key nodes and dissemination paths using quantitative methods, and proposed corresponding intervention and guidance strategies. Li, Zhang et al. (2022) selected Sina Weibo's "2018 PyeongChang Winter Olympics" as an analysis case, combined with the Zhiwei big data analysis platform to select the three most popular topics of this event, used Java to obtain all Weibo posts and retweets and comments related to the topic on Sina Weibo, and processed the data to make it analyzable. Then Gephi was used to draw a network graph and perform related metric analysis.

From academic research on the social network analysis of microblog public opinion, it can be seen that most of these studies were conducted by domestic scholars, and the main tools used in the research were Gephi and Ucinet. Researchers take the authors and netizens who follow hot events on Weibo as nodes and the reposting relationships among them as edges, and introduce them into the tools. Through methods such as centrality analysis and agglomerative subgroup analysis, they identify the key nodes and faction distribution in public opinion events, thereby promoting public opinion guidance and management. This paper will also obtain the nodes and edges and use Gephi for social network analysis to guide public opinion in a positive direction by controlling the social network.

2.2 Secondary Public Opinion

The subgeneration of public opinion in the digital age brings many new challenges to the field of public opinion governance. Its connotation and characteristics have been analyzed from multiple dimensions by the academic community. At the level of characteristic cognition, Sun (2019) pointed out that secondary public opinion has the characteristics of "complexity" and "derivatization", which is manifested as the fission and intersection of the original event issues; Liang et al. (2023) emphasized secondiousness, relevance and contingency from the perspective of practice, revealing its dual attributes of being both dependent on the original event and triggered by external variables. Liu et al. (2016) based on the case of the Tianjin Port explosion, found that secondary public opinion often has a "tortuous" fluctuating trajectory and a "rumor-ridden" information environment, reflecting its unpredictability risk, which reflects the new form of public opinion evolution in the digital age.

Most of the research on the evolution of public opinion in China belongs to the procedural school, focusing on the steps of public opinion formation. Earlier studies focused on the comparison of formation mechanisms, such as Zhao et al. (2017), by comparing new media with traditional media, pointed out that the former formed a "decentralized cycle" pattern due to the decentralization of communication; Kuang (2014) constructed a three-stage model of "incubation period - outbreak period - dissolution period" to reveal the parabolic pattern of public opinion energy shifting with public attention. However, as the emotional attributes of new media become more prominent, there is an important shift in the research perspective: Wang (2016) proposed the essential change that "social sentiment is the dissemination of information", and Yu et al. (2018) further introduced the framework of the sociology of sentiment, attributing the internal driving force to the resentment sentiment accumulated by the tension of social structure and the external driving force to multimedia mobilization and the trust crisis of public power, both of which jointly drive the explosive evolution of sensitive public opinion.

The current academic analysis of the causes mainly focuses on the continuous spread of social sentiment, the concentrated spread of online rumors, the imbalance of social order and the weak response of the public sector. (Liang et al., 2023) Zhang et al. (2021) summarized the causes of secondary public opinion in online politics into five reasons: the hype in cyberspace, the pollution at the source of political information, the impact of media dissemination methods on the authenticity of political information, the impact of Internet users' dissemination methods on political security, and the psychology of Internet users.

The external effects of digital media and Internet technology, the chaos of pan-entertainment and social tension have led to a tense and disconnected state of public secondary public opinion in the multi-layered structure of technology, culture and space, and the subgeneration of public opinion is facing the challenge of structured governance of "technology - culture - space". (Liang et al., 2023) The governance of secondary public opinion has also become a key topic of discussion in the academic circle. Establishing a communication mechanism for online secondary public opinion, improving the

supervision mechanism for online secondary public opinion, perfecting the response mechanism for online secondary public opinion, and fostering a healthy online secondary public opinion field have become the common consensus in the academic circle in terms of public opinion governance. Regarding the governance of public opinion on online hot events, Liu (2024) proposed that it is necessary to grasp the characteristics of theme evolution and achieve precise information response; Smooth information dissemination networks and build multi-party governance entities; Strengthen the guidance of netizens' emotions and create a clear and clean cyberspace.

3. Summary of Public Opinion Event

3.1 Overview of the Original Public Opinion Event

On May 11, 2025, actress Huang Yangtiantian posted photos of her coming-of-age ceremony on social media, and the earrings she wore were accused by netizens of being classic emerald diamond earrings from luxury brand Graff, with a market reference price of about 2.3 million yuan. Due to her limited popularity as a young actress but abundant acting resources, and the exposure of her father Yang Wei's background as a civil servant in Ya 'an City, Sichuan Province, public doubts have been raised about her family's spending power and income sources. Some netizens further disclosed that Yang was in charge of the bidding for the post-disaster reconstruction project in Ya 'an during his public service, and pointed out that he "spent 5 million yuan to set up a film and television company the year after the disaster (2014)" and "registered a biotech company during the pandemic in 2020", questioning whether he "made money from the national disaster" or profuded from his power.

In response to the growing public opinion, Yang responded via Weibo on May 16, denying that the earrings were genuine, saying they were counterfeits and willing to be appraised. He also clarified that he had resigned from public office in 2017 and had not participated in the bidding for post-disaster reconstruction projects or charitable donations during his tenure, and claimed that the online accusations were false. However, netizens later discovered that Yang Wei's affiliated companies (such as Shenzhen Shuicimu Beauty Trade Co., LTD.) had urgently changed their legal representative, shareholder information and business scope after the incident escalated. This move was interpreted by public opinion as "cutting the chain of interests", which instead exacerbated public doubts.

On May 17, the Commission for Discipline Inspection and Supervision of Ya 'an City responded that it had paid attention to the matter and intervened to handle it. On May 22, a joint working group in Ya 'an issued an official announcement confirming two investigation conclusions: First, Yang Wei was suspected of running a business in violation of regulations and deliberately concealing the illegal birth of a second child during his public office from 2011 to 2017, and the supervisory authorities have lawfully initiated an investigation; Second, his work was not related to the approval and management of funds for post-disaster reconstruction in Ya 'an and charitable donations. After the announcement, the topic # Huang Yangtiantian's father under investigation # quickly topped Weibo's trending list, with 610 million views, marking the peak of public opinion.

3.2 Overview of Secondary Public Opinion Events

Although the notification confirmed that Yang Wei, his father, had engaged in illegal business during his public office and concealed the issue of his second child and initiated an investigation, it did not respond at all to the core disputes such as the authenticity verification of the earrings and the legitimacy of the source of the family's huge wealth. The public regarded the notice as "evading the main issue" and questioned the fairness of the Ya 'an government's self-examination. A large number of netizens criticized it as "picking it up high and putting it down lightly", demanding that the provincial or central commission for Discipline inspection intervene in the investigation.

The content of the notice has raised more doubts. The notice mentioned that Yang Wei had served as the "contact person for the development project of Yunfeng Mountain Scenic Area in Yingjing County, which is estimated to cost 700 million yuan," and although the project failed to attract investment, netizens questioned whether he was using his position to pave the way for subsequent business. At the same time, doubts were raised about the motives behind his sudden resignation in 2017 under the pretext of "taking care of his family", suggesting it might be related to evading supervision. The Ya 'an investigation team's announcement not only failed to quell public anger and dispel public concerns, but instead sparked further public discontent. While dissatisfied with the official announcement of the investigation results, netizens have spontaneously sorted out the timeline of the incident, delved into more detailed personal experiences of Yang Wei, the father, and even turned suspicious eyes to his mother and grandmother. There are more and more doubts behind the case, and the public's demand for a thorough investigation is growing.

4. Research Content and Methods

4.1 Research Methods

This study takes the secondary public opinion topic # Huang Yangtiantian's father is under investigation # of the "Huang Yangtiantian sky-high price earrings" incident on Weibo as the research object and conducts a social network analysis of it. The social network analysis focuses on the diffusion structure and key actors of secondary public opinion, with microblog authors (source nodes) and forwards (target nodes) as the main network subjects, constructing directed edges based on the forwarding relationship, drawing a dynamic social network map to reveal the information flow path, and using Gephi to calculate indicators such as node average, network diameter, and modularization. Locate the core disseminators and community clustering characteristics in the diffusion of public opinion, and compare the changes in network topology to analyze the phased structural differences in the diffusion of secondary public opinion.

4.2 Data Acquisition

All the data for building social network relationships came from Sina Weibo. Through the Qingbo Public Opinion platform, we crawled the authors and retorers of Weibo posts related to the "Huang Yangtian sky-high Price earrings" incident at each stage from May 22 to May 28. For the convenience

of directly crawling their ids, if there were retorers, they were crawled; if not, they were removed. If there were multiple retweets under the same Weibo author, the crawled data showed that the same Weibo author corresponded to different retweets. Consider the Weibo author and the forwards corresponding to the Weibo author as nodes. If there is a forwarding relationship between them, there is an edge between them; if not, there is no edge. Summarize all the nodes and edges in one excel sheet to form an edge table in csv format. Import the edge table into Gephi, draw a visual graph of the social network, count the number of nodes and edges, and run the relevant metrics in Network Overview, Community Test, Node Overview, Edge Overview in the statistics area to analyze the characteristics of the social network graph at each stage.

5. Social Network Analysis

5.1 Basic Network Structure and Node Degree Distribution

The initial network constructed after importing the data contains 5,314 nodes (microblog users) and 5,321 directed (forwarding relationships), as shown in Figure 1., the network structure shows significant sparsity characteristics.

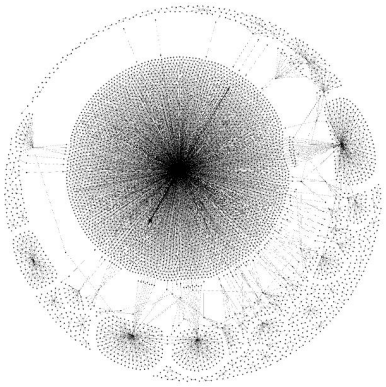

Figure 1. Initial Node Relationship Diagram

Perform the degree operation on the data imported into Gephi, and the average degree of the network is 1.055, indicating that the overall connection density of the network is extremely low. As can be intuitively seen from the distribution of node degrees in Figure 2., 93.83% of the nodes in this microblog network have a degree of 1, that is, the probability of connection with other nodes is very small, and only a very small number of nodes have a large degree, so these nodes with a large degree are the core nodes in the dissemination of public opinion in this network.

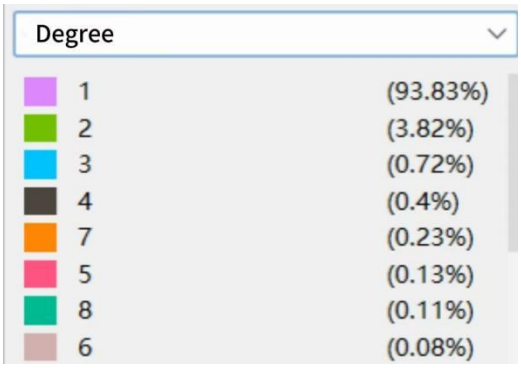

Figure 2. Node Proportion Distribution Map

About 97 percent of the nodes in the network have a low degree of connectivity, that is, only one edge connected in or out, and only a very small number of nodes have multiple connections. This is in line with the "scale-free" nature of many online social networks, where a few nodes have a large number of connections while the vast majority have few connections.

Some of the high-out-degree nodes listed in Table 1., such as Xinhua News Agency with an out-degree of 3597 and CCTV News with an out-degree of 194, have typical "source of information" characteristics. The connection degrees of these nodes are generally 0, indicating that they mainly play the role of information publishers, and the microblogs they post are widely retweeted, but they rarely retweet content from other users themselves. In contrast, a large number of nodes in the network with a degree of 1 are mostly "information receivers" or "edge participants", and they may have retweeted the content of the core information source only once (with a degree of 1 and a degree of 0).

Table 1. In-degree, out-Degree and Degree (Partial) of Nodes

ID	In-degree	Out-degree	Degree
the Xinhua News Agency	0	3597	3597
Peanut Youngster	0	238	238
CCTV News	0	194	194
People's Daily	0	131	131
Capital Orange	0	101	101
1X1X	0	46	46
Azinan	0	45	45
Beijing Youth Daily	0	40	40
Egg Yolk Pie Y	0	34	34
E-Sports Trendsetter	0	34	34
Reborn Star B King	0	25	25
Gossip Circle	0	23	23

Playful Noble Guo	0	23	23
Observer Network	0	21	21
Little Fortune from the M78 Nebula	0	20	20
mulixiaojinbao	0	20	20
Cinema Judge Malena	0	19	19
Big-eyed Sleeping Beauty	1	17	18
Melon Eater CJ	0	17	17
Phoenix Network	0	17	17
Global Times	0	17	17

The degree distribution of this network reveals the high concentration of information dissemination. The spread of secondary public opinion mainly relies on the initial release of a few core media accounts (such as Xinhua News Agency, CCTV News, People's Daily) and some high-influence self-media users (such as Peanut Xiaoshenghua, Capital Yiqi, etc.). The vast majority of ordinary users are on the fringes of the Internet, and their actions contribute little to the wide spread of information, mainly by receiving or forwarding core information in one go. This structure implies that controlling the content and dissemination of core information sources is crucial for guiding the overall direction of public opinion.

5.2 Community Structure and Modular Analysis

Modularization analysis of network data using Gephi, as shown in Figure 4., yields a modularization value of 0.512, indicating a strong community structure in the network. A higher modularization index indicates that nodes tend to form dense connections within communities, while connections between communities are relatively sparse. Figures 5 and 6 further show that there are seven relatively large major communities in the network.

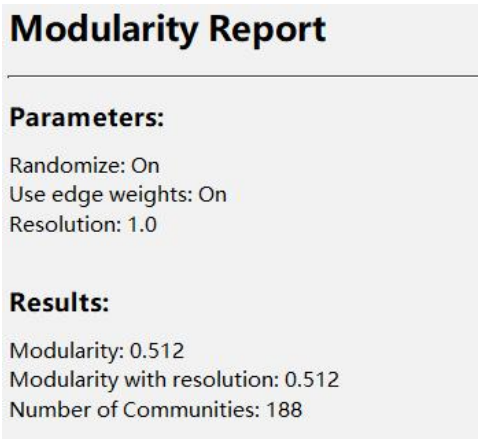

Figure 4. Modular Report

The algorithm identified 188 communities, and Gephi visually demonstrated the modular nature of the

network by using different colors to represent different modules. It is evident in Figures 5.and 6. that the network has seven larger modules, with a central node in the middle of each colored module, which has a high degree of out-connection and a low degree of in-connection, and is the core driver of information diffusion within the community. In the public opinion storm of the investigation and notification of Huang Yangtiantian's father, several major nodes play a dominant role in the network. Grasping the information dissemination of major nodes is the key to controlling the direction of public opinion.

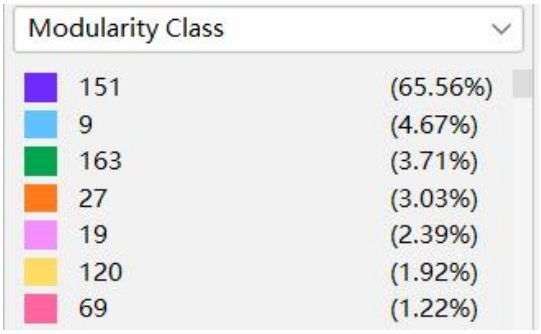

Figure 5. Modular Hierarchical Node Degree Ratio (partial)

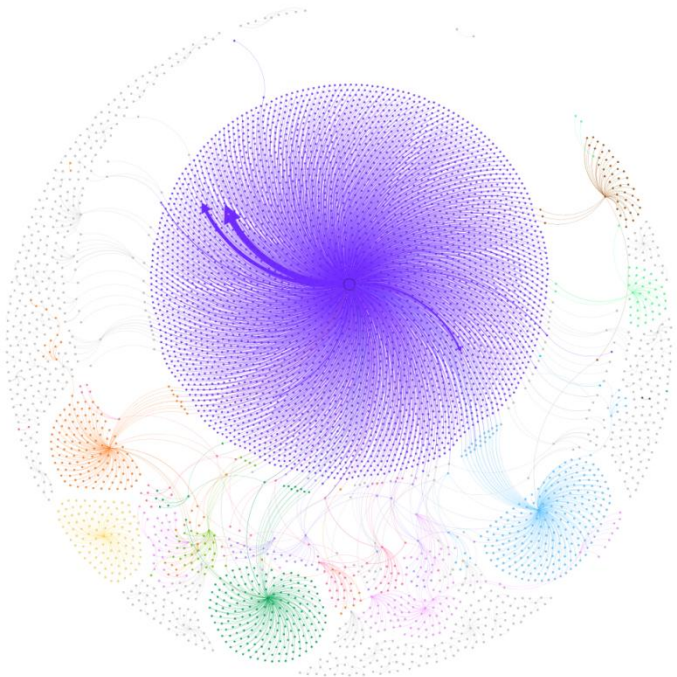

Figure 6. Modular Distribution Structure of the Network

The modularization index of 0.512 confirms that the secondary public opinion network is not completely randomly connected but has formed multiple "small groups of public opinion". These seven major communities may represent different groups of users who are concerned about the event. The

topics discussed by each community mainly depend on its central node, namely opinion leaders or core media. This structure indicates that the secondary public opinion is spreading in a multi-centered and fragmented manner within the microblogging network.

5.3 Analysis of Information Dissemination Efficiency and Node Centrality

As shown in Figure 7., the average path length of the network is calculated to be 1.003 and the network diameter is 2. This means that the average distance of information from one node to another is close to 1 step, and the longest path only takes 2 steps. This reflects that the depth of information dissemination is not great and the network as a whole is not strong in terms of hierarchy.

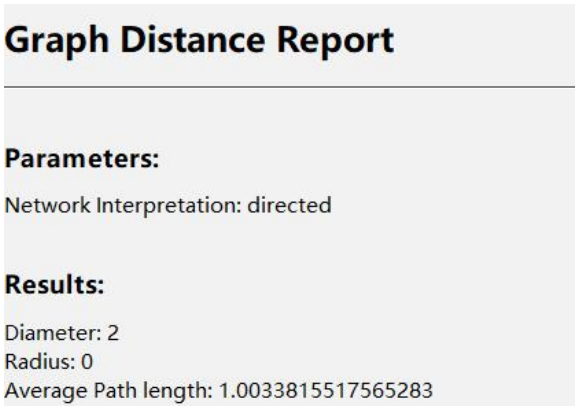

Figure 7. Figure Distance Report

The BetweennessCentrality and proximity centrality of each node were analyzed by Gephi software. The betweenness centrality measures how often a node appears on all the shortest paths in a network. If a node has a high degree of mediation centrality, it means that the node plays the role of a "bridge" or "mediator" in the network, through which a lot of information is passed.

According to the data shown in Table 2., among the 5,314 nodes, only two have an intermediate centrality greater than 0, namely ids "Big Eye Sleeping Beauty" and "Xu Ji Observation", while the majority of the remaining nodes have an intermediate centrality of 0. Such a small number of non-zero nodes indicates that nodes playing the role of "bridge" or "intermediary" in the network are very scarce, and information dissemination mainly occurs between the information source node and the direct forwarder, or only passes through specific nodes in very few paths, such as "Big Eye Sleeping Beauty".

Table 2. Centrality Data (Partial)

Id	Closeness Centrality	Betweenness Centrality
Big-eyed Sleeping Beauty	1.0	17.0
Xu's Observer	1.0	1.0
World Kiwi	1.0	0.0

----------18506	1.0	0.0
1X1X	1.0	0.0
24k Gold Manatee	1.0	0.0
Blood Flag	1.0	0.0
Teacher B Loves Beauty	1.0	0.0
Bloomsbury2012	1.0	0.0
Emo Mouse	1.0	0.0

Proximity centrality measures the average distance from one node to all the other nodes in the network. If a node has a high degree of proximity centrality, it means that the node can quickly access all the other nodes in the network. Table 2 shows that 236 nodes in the network have a proximity degree greater than 0, accounting for 4.44% of the total number of nodes, indicating that the vast majority of nodes are relatively isolated in the network and have difficulty quickly accessing most of the other nodes in the network, that is, the vast majority of nodes have difficulty forwarding hot topics in the first place.

In summary, the extremely short average path length and network diameter, combined with the extreme scarcity of nodes with high mediation centrality, reflect the "flattening" and "one-step diffusion" characteristics of information dissemination in this secondary public opinion network. The information mainly spreads directly from the core information source to the forwarder, with very few cases of multi-level forwarding or cross-community dissemination. This limits the depth and breadth of information dissemination, but it also means that information spreads very quickly. The analysis close to centrality further emphasizes the high concentration of information dissemination: only a very small number of nodes have the potential to quickly reach some of the other nodes in the network, and there are many structural holes in the network. Therefore, monitoring and guiding these few core nodes with high connectivity and high proximity to centrality can effectively influence the process of information dissemination and the direction of public opinion throughout the network.

5. Conclusion

Through a social network analysis of the secondary public opinion reported by Huang Yangtiantian's father, the study found that the public opinion network presented three typical characteristics: high sparsity, core node dominance, strong community differentiation, and flat dissemination. Specifically, the network has 5,314 nodes and 5,321 directed edges, with an average degree of only 1.055, indicating an extremely low overall connection density. Further analysis reveals that 93.83 percent of the nodes have a degree of 1 and are at the edge of information dissemination, while a few core nodes, such as Xinhua News Agency and CCTV News, have become the core engines of public opinion diffusion. These core nodes are mostly official media or top self-media, and they have the characteristic of "high

out-degree, zero in-degree" of information sources, that is, they usually release information one-way and rarely forward others' content, highlighting their key control over the direction of public opinion.

In further analysis of the network, it was found that the network's modularity index reached 0.512, forming 188 independent communities, including seven larger ones. These communities are closely connected internally, but the connections between them are very sparse, creating a typical "islands of opinion" phenomenon. Each community relies on a single core node to drive the internal flow of information, a structure that can easily lead to secondary issues reinforcing themselves within closed groups.

Looking at the analysis of the efficiency of information dissemination again, it reveals a flattened diffusion mechanism. The average path length of the network is only 1.003, the network diameter is 2, and it has the characteristics of extremely short paths, which indicates that information can reach the target node in an average of just one step, and multi-level forwarding is almost non-existent. The centrality metric further validates this mechanism. Only two nodes have an intermediate centrality greater than 0, and 99.96% of the nodes do not act as a bridge, resulting in an extremely scarce flow of information across communities. At the same time, only 4.44% of the nodes (236) have a proximity centrality greater than 0, indicating that the vast majority of users have difficulty accessing the entire network quickly. While this "one-step diffusion" pattern speeds up the coverage of information, it suppresses the hierarchical deepening of rational discussion and encourages emotional expression.

Overall, the essence of secondary public opinion dissemination is that a few core nodes dominate the diffusion of information, strongly modular communities sever the formation of consensus, and short-path dissemination weakens in-depth discussions. The one-way diffusion of the core nodes mechanically spreads the notification content, but fails to absorb netizens' doubts about core issues such as "the source of the earring funds" and "where the disaster relief funds go", resulting in a mismatch of information supply and demand. The highly modular community reinforces cognitive bias in a closed environment. When notifications only respond to "illegal business" and avoid political-business connections, different communities develop their own interpretations, leading to derivative topics such as "collusion between officials and businesspeople" and "family scandals". The flat path and the absence of intermediary nodes have blocked the rational dialogue, causing the unclarified doubts in the notification to be distorted into the label of "local asylum" within two steps of dissemination. The "evasive" of the notification was magnified in the microblog network structure, the core node solidified the framework of questioning, the community fragmented the consensus base, the short path accelerated the contagion of emotions, and ultimately triggered the collapse of credibility. This also reflects that when the official response is combined with the flaws in the network structure, the risk of the original event going viral will increase geometrically.

This research, by integrating social network analysis methods, offers a new approach to analyzing secondary public opinion dissemination, contributing to the enrichment and improvement of the theoretical framework of public opinion dissemination. It also deepens our understanding of the

characteristics and mechanisms of secondary public opinion dissemination in the new media era. Compared with previous research results, this study focuses more on the microstructure of the secondary public opinion dissemination network and the interactions among different nodes. While previous studies might have emphasized the macro-level features and trends of public opinion dissemination, this research delves into specific network structures, such as the "high out-degree, zero in-degree" characteristics of core nodes and the modularity index of the network. This provides a more detailed and in-depth analysis of secondary public opinion dissemination.

However, the study also has limitations. For instance, the data source might be relatively limited, mainly focusing on the secondary public opinion triggered by Huang Yangtiantian's father's report, which may affect the universality of the research conclusions. Additionally, the research methods could be further diversified. Incorporating methods such as content analysis and case studies might yield more comprehensive conclusions. From a practical application perspective, this research can provide more valuable references for relevant departments and institutions in managing and guiding public opinion. By identifying core nodes, understanding the community structure and dissemination mechanism of secondary public opinion, effective public opinion guidance strategies can be formulated to enhance the accuracy and timeliness of information release and prevent the escalation and spread of secondary public opinion. This can also accumulate practical experience for the construction and optimization of social media platforms.

Future research can be expanded and deepened in several directions. Firstly, expanding the data sources and conducting comparative studies of multiple cases to enhance the universality and reliability of the conclusions. Secondly, combining advanced technologies such as machine learning to further explore the dynamic evolution patterns of secondary public opinion dissemination networks. Thirdly, conducting in-depth research on the psychological and social factors behind secondary public opinion dissemination to provide a more comprehensive theoretical explanation. In terms of research methods, the integration of multiple methods needs to be continuously optimized and improved. In the future, it is hoped that more scholars will pay attention to the research on secondary public opinion dissemination, continuously explore and innovate, and provide stronger theoretical support and practical guidance for the healthy development of public opinion dissemination.

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