



# Analysis of the germination mechanism of public opinion polarization from the perspective of stratification

Min Cai \*, JianHua Dai

Nanjing University of Science and Technology, School of Economics and Management,  
Jiangsu, 210094, China

\*Corresponding author Email:121107222871@njjust.edu.cn

**Abstract.** [Objective/Significance] This article aims to study the formation mechanism of circle opinion polarization, reveal the law of circle opinion, summarize intervention methods, and provide theoretical basis for better control of circle opinion polarization. [Method/process] Based on the theory of information system, this article summarizes the driving force and influencing factors of circle opinion polarization, establishes a generative mechanism model, and puts forward corresponding guiding measures to intervene in circle opinion polarization. [Result/Conclusion] This study clarifies the influencing force and 4 key influencing factors of opinion polarization from the perspective of circle, and proposes the basic ideas of guiding measures of circle opinion polarization from an operable point of view.

**Keywords:** network stratification; Opinion Polarization; Element Composition; Generative Mechanism; Guidance.

## 1 Introduction

In recent years, driven by the continuous change of media and the continuous progress of technology, the trend of "circle stratification" appears in the process of Internet groups participating in public opinion discussion. The circle circle social way appears in the interaction process of Internet users, forming different circles. "Network circle" is a social relationship network formed by connecting network users with the same interests, hobbies, cultural concepts and value pursuit. The core is the common values among circle members. Research on the polarization of public opinion has been carried out for a long time. In the field of public opinion, the spread of users' negative emotions, irrational conflicts and the formation of extreme opinions will aggravate the difficulty of governance of online public opinion space. At the same time, the polarization of public opinion is a pain point in the governance of public opinion. Currently, it is believed that the polarization of public opinion is mainly affected by the new media environment in China, and the polarization effect and performance of network public opinion events are studied from the perspectives of organizational communication [1], social media attributes [2] and information uncertainty [3], while the polarization phe-

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nomenon of public opinion is rarely studied from the perspective of "network stratification". Therefore, the research on the polarization behavior of network public opinion from the perspective of "circle stratification" can expand the research breadth of group polarization phenomenon in current public opinion communication, make up the theoretical gap between the phenomenon of "circle stratification" and public opinion communication, and enrich the theoretical basis of existing research on public opinion.

The interaction of network groups is an important form of the emergence and existence of network circles. The interaction and sharing of network users promotes the formation and evolution of public opinion, and accelerates the exchange, conversion and cross collision of circle members' opinions. Wu Jie and Xu Xiangdong believed that the value identification under intimate relationship and the "homogeneity within the circle and heterogeneity outside the circle" of public opinion boosted by media platforms together lead to the role of the circle in online public opinion [4]. Wang Qianru and Zhang Rong took bilibili video website as an example [5]. In the process of participating in the interaction, individuals on B website gradually formed various interest layers with certain regulations and norms, and the special interactive barrage and access threshold inside the circle gradually formed a circle structure with common value system. Interaction makes the network public opinion events show the trend of "circle". However, the "circle" under multi-party interaction often has the property of fragmentation, which is manifested by different social groups' opinions, attitudes, emotions and other aspects of a certain event or topic. Once these "different directions" develop towards the direction of polarization, it is easy for rumors to hang around and public opinion to get out of control, endangering the network public opinion environment and not conducive to the correct guidance of mainstream values.

Therefore, it is necessary to study the polarization of public opinion formed by interaction in the new media environment in the background of the circle. At the same time, the polarization of public opinion is produced under the influence of the phenomenon of "circle", and its formation mechanism may be influenced by various factors. Therefore, this paper will sort out the mechanism of public opinion polarization under the "circle stratification", and propose targeted intervention measures, in order to provide theoretical support for the research, judgment and control of circle public opinion.

## **2 Generative mechanism of public opinion polarization from the perspective of stratification**

### **2.1 Dynamics of group polarization from the perspective of stratification**

#### **2.1.1 Factionalism of the main body circle gives rise to extreme psychology.**

(1) Internal cognition leads to information selection bias. Cognitive graphics believe that the audience's behavioral preference is related to the solidified views generated in the interaction of similar events in the past. Influenced by this, the network audience has a certain preference when browsing information on social media platforms. Net-

work users will choose to pay attention to information or people according to their personal values, and form a circle layer. Within the circle layer, a large number of homogeneous views accumulate, which is prone to be one-sided.

(2) factionalization within the same group will intensify emotional identification. Group members in the same circle, often have a strong sense of belonging, identity and superiority. Similar information is constantly verified within the circle. When it conflicts with the views of other circles, group members often take extreme actions to refute the other party in order to safeguard their own right of discourse and interests of the circle, which will lead to the differentiation and polarization of views.

### **2.1.2. The characteristics of network media solidify the polarization tendency of public opinion in circles**

Social media big data tracking and information recommendation technology have promoted the circle and extreme of public opinion in the virtual field. Big data tracking and recommendation technology can identify a series of user groups with similar common characteristics, who are similar in interests, values, cognitive thinking and other aspects, forming various types of network social circles. Under the "echo chamber effect of the same circle" interaction, internal cognition is further strengthened, and the formation of group polarization in virtual field is more significant when communicating with different social circles.

### **2.1.3. Circle culture exacerbates opposition and conflict among circles**

Circle culture refers to a kind of interest culture formed due to different users' concerns, which makes users gather in different small social places. Common cultural identity enables people to establish close relationships with some people while alienating others. Due to close psychological distance, similar social background, interest demands and goals, some users form circles in the virtual field. Compared with a single form of culture, circle culture competes for more discourse space and strengthens the existence value of itself and the circle to which it belongs by building a contempt chain, which is manifested by criticizing others and speech conflicts. In order to win more groups' recognition and participation of circle culture, Such suppression and contempt for the difference of other types of circles in order to raise the way of public opinion is easy to have public opinion collision, conflict in the field.

## **2.2 Generative mechanism model of public opinion polarization from the perspective of stratification**

According to the information ecology theory, the interaction and influence of various elements within a certain range of time and space constitute the overall environment of public opinion [6]. Here, this is shown in Figure 1, we will analyze the generative mechanism of public opinion polarization from the perspective of circle stratification from four aspects, based on the differences in the power sources of public opinion polarization under circle stratification:

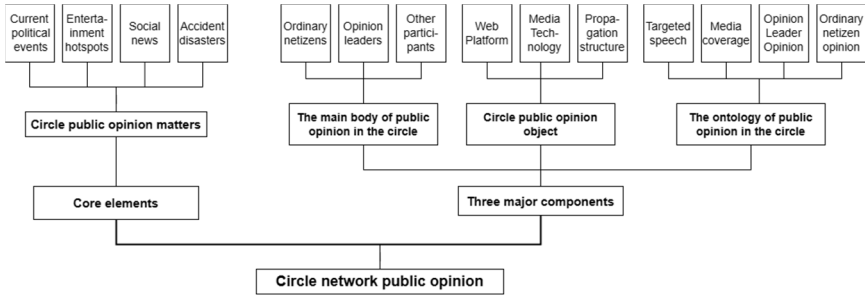


Fig. 1. Influencing factors of public opinion polarization in the network circle

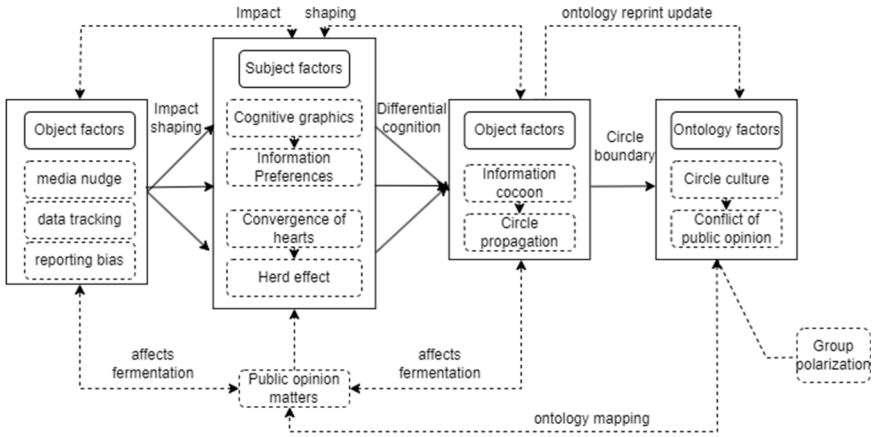
1) Matters of public opinion: In the circle of public opinion events, all events that can cause the outbreak of public opinion may cause the trend of "circle" and "extreme" of public opinion, including current politics and people's livelihood, cultural and entertainment hot spots, social news, accidents and disasters.

2) Subjects of public opinion in circles: including opinion leaders in circles with strong opinion guidance, opinion followers in circles who influence the fermentation of public opinion and silent people, mainly considering the role of subjects in the propagation of public opinion in circles.

3) The object of public opinion in circles: the object of public opinion in circles is regarded as the driving force of emotion formation and change of the subject and the support of opinion differentiation, including the network media and information technology that undertake transmission and communication tasks in circles of public opinion, as well as the circle communication structure that promotes the differentiation of public opinion.

4) The circle of public opinion ontology: the generally consistent beliefs and attitudes expressed by public opinion subjects in ways such as speech, emotion and behavior [7].

In the formation process of public opinion in circles, there are intricate connections among various elements, and the interweaving of various factors makes public opinion present the characteristics of circles in the communication. The mechanism of action of four constituent factors makes public opinion polarized from the perspective of circles, as shown in Figure 2.



**Fig. 2.** Generative mechanism model of public opinion polarization from the perspective of stratification

**2.2.1 The inner complexity of the circle public opinion subject, and the diverse objects shape the difference cognition**

The participants of public opinion represented by netizens, opinion leaders and those with silent opinions are of great complexity. Firstly, individuals have inherent cognitive graphics and information preference, which will be affected by the targeted recommendation of big data algorithms. The biased cognitive graphics of public opinion subjects affect the output of opinions and the evolution of public opinion, which may lead to the output of extreme opinions by the audience with extreme emotions, and become opinion leaders in the circle to guide the extreme trend of public opinion. Secondly, under the effect of psychological convergence, technology boost will produce herding effect, that is, when the circle subject looks for other audiences in the network environment with uncertain information, it is easy to form a herding effect, which makes the opinions within the circle have high unity and specificity. Finally, group amplifies and intensifies individual speech. At the same time, individuals experience a sense of belonging, identity and superiority, which drives group members to pay selective attention to information. It makes the opinions within the circle have extremely high unity and pertinence.

**2.2.2 Technological objects construct circle social interaction, and circle communication helps circle boundary display**

With the wide application of media technology platforms, media algorithms play an intermediary role in the circle of public opinion field. Big data algorithms promote the formation of circle socializing among subjects with certain cognitive limitations and information preferences. Driven by the multi-dimensional aggregation of "people and media" on network platforms, the intelligent technology connection of mobile terminal media promotes the circle behavior of subjects. Data tracking can analyze users' brows-

ing history, recommend information and opinions similar to their preferences, and promote the identification and aggregation behavior of network members. This leads to the phenomenon of the circle of Internet public opinion and promotes the trend of the circle of the whole society. Secondly, the circle communication form cultivated by network media helps the circle boundary to appear. In the circle communication, all the main members of the circle should rely on social media tools to access the information communication process, weaken the person-to-person communication structure in traditional communication [8], and attach importance to the social communication network connected by the internal members of the circle. Circle communication takes social media as the carrier. On the one hand, social media breaks the traditional structure of information transmission and allows all people to freely participate in information production and transmission anytime and anywhere. People in the circle can communicate and connect freely through interpersonal network, forming frequent circle public opinion interaction. On the other hand, in the mode of circle communication, media pursue more accurate information positioning and consensus cohesion, and relevant technologies can also more accurately locate and deliver to target groups, which strengthens the formation of cultural identity. As a result, network members with information preference have long been in the information content tailored by media technology in the circle communication, and the separation of information transmission is more and more obvious. This closed circular communication mode with frequent internal interaction and gradual external interaction accelerates the subject information interaction to show the characteristics of circle.

### **2.2.3 Circle culture influences public opinion space, and public opinion conflicts promote group polarization**

The compartmentalized culture is the accelerator of public opinion differentiation. The emergence of circle culture is accompanied by the change of circle communication and other social structures in the process of the emergence of circle communication of public opinion, and the individual ideology and existence perception in the process of information circle communication shows the characteristics of homogeneity within the circle and heterogeneity outside the circle. Once the circle relationship is formed, the organizational culture mechanism within the circle further consolidates the structure and cultural identity of the circle through the "hierarchical" cultural control power centered on the right of speech [9]. Therefore, compared with a single form of culture, circle culture competes for more discourse space and strengthens the existence value of itself and the circle to which it belongs by constructing a contempt chain, which is manifested by criticizing others and speech conflicts. In order to win more groups' recognition and participation of circle, This suppression and disdain of other types of circles of difference too high value way easy to produce public opinion conflicts in the field of public opinion. Secondly, the public opinion conflict under the circle culture promotes the polarization of public opinion. According to the research of CAI Qi [10], circles gathered due to similar interests (such as Quyuan culture) show a complex relationship structure in interaction, alliance, conflict and differentiation. Culture plays a key role in the dissemination of information in circles. It brings people with similar interests together and triggers their sense of identity in circles and themselves. At the

same time, the cultural differences among different circles will also lead to the polarization of public opinion in circles. In the circle of public opinion, under the influence of psychological convergence, network users are more willing to communicate with people similar to themselves. Circle groups with the same social background and the interests of "three views" have obvious differences and have certain group members. When different circles express their views on social media platforms, different circles with different cultural differences hold different views and opinions, which are easy to cause conflicts in the process of interaction, and eventually emerge in the form of polarization of public opinions.

### 3 Case Analysis

#### 3.1 Case Introduction

In order to further prove the generative mechanism of public opinion polarization from the perspective of circle circle, the case of "Xiao Zhan 227 event" is introduced. The case mainly explores the group polarization behavior brought by the event in the process of communication from the perspective of circle circle public opinion subject, circle circle public opinion object and circle circle public opinion ontology dimension. The A03 incident reported by Xiao Zhan's fans in February and March of 2020 was highly popular and influenced by public opinion, which triggered discussions on creator's voice loss, fan circle culture, Internet violence and other dimensions.

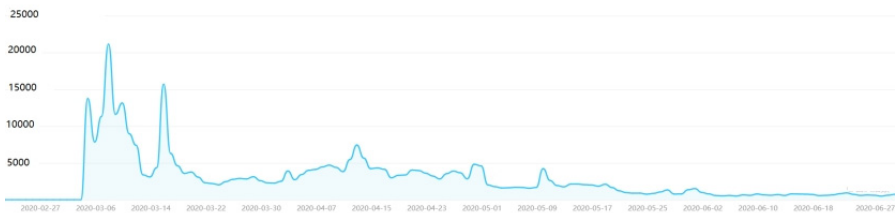
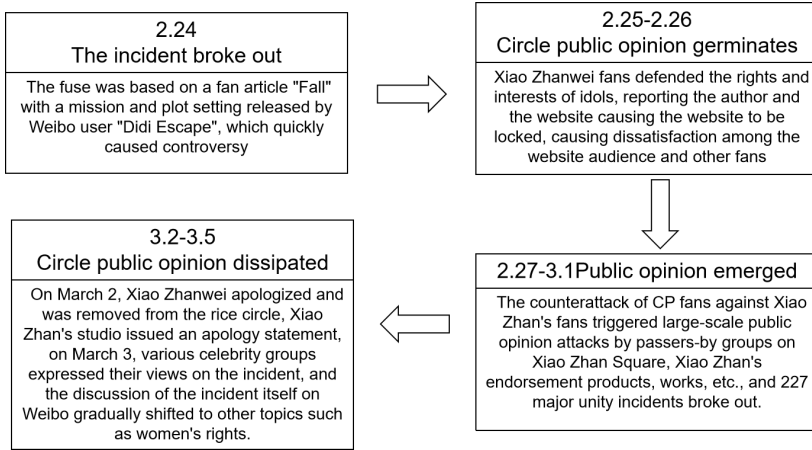


Fig. 3. Baidu search index of Xiao Zhan 227 event



**Fig. 4.** Main experience of "Xiao Zhan 227 Event"

This is shown in Figure 3, combined with the change of the Baidu search index of "Xiao Zhan 227 Event", the collection range of this case is determined to be 2020.2.24-2020.3.05, and according to the development process of this event and the changes of the media and the amount of media publication, The evolution of the online public opinion event of "Xiao Zhan fans report AO3 website" can be divided into the following four stages ,as shown in Figure 4 : (1) the fuse of the event (February 24); (2) The embryonic stage of public opinion in circles (February 25 to February 26); (3) The emergence period of public opinion in circles (February 27 to March 1); (4) The dissipation period of public opinion in circles (March 2 to March 5).

### 3.2 Data results and findings

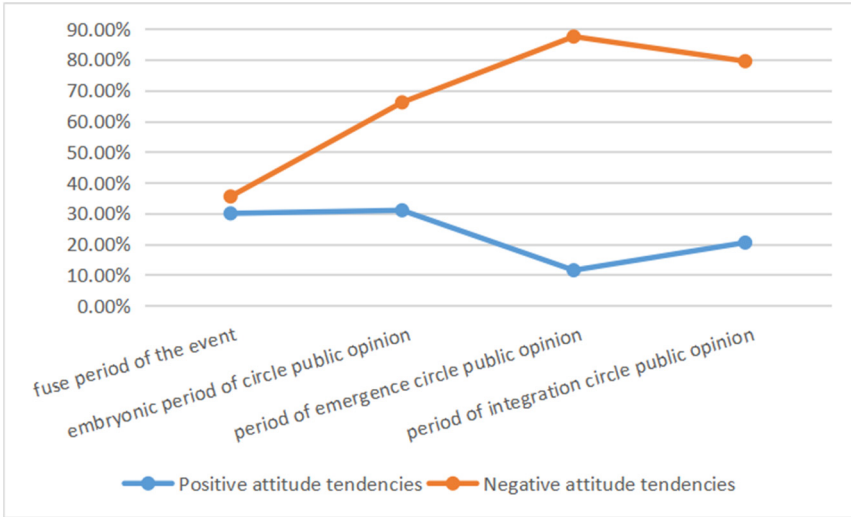
#### 3.2.1 Public opinion shows the trend of circles, and there are differences in emotional tendency among circles

**Table 1.** Subject stratification and distribution of attitude tendency

Discussant	inclined	reason	Number of comments	percentage
Xiao Zhan Rice Circle (Only Fans, Fan Support Association)	approve	Support idols	249	22%
CP powder ring	oppose	Refuse bundling	31	2.9%
AO3 and fandom layer	oppose	Creative freedom	524	47%
Passers-by circle layer (melon-eating masses, media drainage)	oppose	Fans apologize	233	21%
Pink to black group	oppose	omission	57	5.2%







**Fig. 7.** Comparison of percentage of positive attitude and negative attitude tendency

According to Figure 6 and Figure 7, in the whole public opinion event, netizens have obvious extreme attitude and attitude tendency. Since Xiao Zhan's fans reported fellow humanist authors and were involved in AO3 and humanistic websites, AO3 users and fandom began to oppose each other, and netizens' attitudes became extreme. Xiao Zhan's fans' reporting behavior was dissatisfied and angry, and fandom fans expressed their love and support for AO3. Until the emergence of public opinion, although the heat of public opinion decreased, the extreme attitude of netizens increased rapidly again, which was related to the change of AO3 users and passers-by 'attitude towards Xiao Zhan and his fans from temporary dissatisfaction to disgust and strong resistance. In this event, different groups had opposition, mainly showing positive attitude in support of Xiao Zhan and his fans and negative attitude against Xiao Zhan and his fans. Netizens with a negative attitude toward Xiao Zhan and his fans occupy an obvious dominant position. Especially, after Xiao Zhan's fans' report on AO3 website caused dissatisfaction among all groups, the negative attitude tendency rose sharply. With the fermentation of the event, all circles gradually participated in the discussion, and the negative attitude tendency showed an overall rising trend.

#### 4 Measures to guide the polarization of public opinion in the four circles

In short, public opinion has formed a unique circle evolution path in the process of evolution of public opinion. Among the elements of circle, the subject is both passive and active. Public opinion events and circle public opinion objects cross-affect the subject, and the opinions produced by the subject will affect the development trend of the whole public opinion events. Therefore, we can guide the polarization of circle public opinion from three aspects: subject, object and ontology.

**Subject Angle:** Focus on opinion leaders to highlight the value of the circle. It is necessary to prevent biased opinion leaders from contributing to the occurrence of one-sided, one-polarization and multi-polarization of public opinion, carefully screen all kinds of opinion leaders in the circle, establish an effective and stable communication mechanism, and grasp the ideological dynamics and latest public opinion trends of participants in the circle. Strengthen value guidance, cultivate the awareness and responsibility of opinion leaders as "gatekeepers" of circles and theories, encourage and guide inner circle members to engage in healthy dialogue and interactive communication with other circles, break down the "barriers" of circles of public opinion, and prevent the polarization of public opinion.

**Object perspective:** Assume social responsibility and improve platform rules. Attention should be paid to network media maliciously creating closed public opinion space and building circle barriers in order to obtain data traffic. Social media platforms should abide by relevant national laws and regulations, improve the communication rules within the circle, prevent any malicious gathering of data within the circle, rationally use recommendation algorithms, optimize content recommendation, and transmit multiple views to circle members, so as to help break the phenomenon of information cocoon. At the same time, the platform needs to establish a constraint mechanism, clarify the responsibilities of the leaders, and establish long-term and effective constraints on the active members and opinion leaders within the circle, so as to prevent the information pressure and group polarization caused by the "one call for all responses".

**Ontology perspective:** Respect the circle culture and realize the precise guidance of circle public opinion. To understand the internal rules of the circle, from the perspective of thinking of the circle subjects, grasp the needs and self-expression of all participants in the circle, make good use of the circle expression and communication methods for targeted and differentiated public opinion guidance and communication, so as to obtain the rational identity, emotional identity and value identity of the circle public opinion subjects with high internal identity.

## 5 Conclusion

Based on previous studies, this paper analyzes the evolution of public opinion and the mechanism of polarization phenomenon under the background of network circle stratification, and proposes corresponding control measures for circle circle public opinion polarization. Some theoretical ideas and methods are provided to improve the governance of network public opinion and the construction of network space security under the background of circle. However, this paper only discusses the composition of public opinion and the polarization phenomenon under the circle background from a theoretical perspective. In the future, it is necessary to study the applicability of individual attitudes combined with empirical data, so as to provide more realistic value of public opinion guidance countermeasures and suggestions.

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