

## Common interest or shared empathy: Comparison on social network structure of two neo-tribes

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**Abstract:** Different from European and American cultural context, subculture groups in China are closer to neo-tribe due to their fragmentation and mobility. However, the difference between cultural and media context requires the neo-tribal theory to recontextualize to adapt to the communication mechanism in the context of Chinese SNS. In the past, Chinese research on subcultures mostly chose a single tribe as the object. Few studies have done a descriptive comparison of tribes formed in different ways. Therefore, the research divided neo-tribes into two types: interest-based & empathy-based tribes, and made a compare research of network structure analysis between them. By adapting SNA from the macro, meso, and micro level, the study found that empathy-based tribes have weaker cohesion than interest-based tribes, the overall willingness of tribal members to establish contact with others is weaker, and the distribution of opinion leaders is more dispersed, but small-scale support among members is more frequent.

### 1. Introduction

Sub-culture theory has been widely accepted since its introduction into China in 1984 (Feng, 1984). However, the specificity in different cultures requires a discussion of the adaptation of foreign cultural theories in other political or national contexts (Turner, 2013). This discussion is particularly necessary in the context of the differences between Eastern and Western (Tao, 1998), because unlike Anglo-American subcultural studies with its overtones of anomie, marginality, and resistance, subcultures in Asian contexts tend to appear as niche tribes (Chen, 2014). This participatory, open, fluid and fragmented cultural form is highly similar to the neo-tribe theory proposed by Michel Maffesoli in 1996, and subcultures in the Chinese context are also breaking through the cultural barriers through the free, equal and convenient Internet platform (Zeng, 2020), so the relationship between subcultural and ideology is blurring (Lin, 2016): subcultures are acting collectively through the Internet, through cooperation with mainstream discourse in order to actively seek its own popularity (Peng, 2020), and can be equipped with the potential for politicization(He, 2018) through action strategies that are both rational-emotional and gamified (Wang, 2016). Therefore, the recontextualization of the new tribe can reach better understanding of Chinese youth culture as well as provide assistance for the governance of Chinese online culture.

However, the problem of recontextualization of sub-culture theory in China were not only caused by difference between cultural, but also caused by changes in the media environment. Although scholars such as Gore, Malbon, Bannet, and Hodkinson have focused on the "tribes and communities that formed through assembly, interaction, and exchange" in online virtual communities such as Gothic (Hodkinson, 2002), changes in the communication environment have led re-contextualization necessary. In addition, in the current neo-tribal studies in China, most of the studies adopt exploratory study or explanatory study, mainly use the method of depth interview to explore the mechanisms of tribal members' interactions, in which tribes are regarded as an indivisible whole, and few studies have made comparative analysis of different tribes. In summary: In the current Chinese network environment, further subdividing neo-tribes and analyzing the network structure of different tribes

formed based on different association methods through descriptive study is important for targeting the governance and guidance of online culture.

## 2. Literature

The neo-tribal theory proposed by Maffesoli and introduced into cultural studies by Bennett (Bennett, 1999; Maffesoli, 1995) originated in the context of the reality of individuals' renewed desire for social bonding after postmodern extreme individualism. In this context, loose, ephemeral social networks called neo-tribes are formed, which are maintained in a way that departs from traditional structural factors such as class, gender, religion, etc., and instead generate links through, for example, geography, kinship, emotions, etc., and individuals can appear in different tribes with different identities, genders, even roles in order to satisfy the need of individuals and small groups to establish social connections (Johnson & Ambrose, 2006), such as *rave* culture (Malbon, 1999; Straw, 1991), popular music tribe (Bennett, 2000), experiential digital tribes (Wang, 2019), and so on. Neo-tribal study tend to adapt concepts like scenes, lifestyle and so on (Wang, 2005), and neo-tribe are constructed through consumption (Muggleton, 2000), but current research ignores to some extent that factors of class, gender and ethnicity remain, and therefore suffer from overkill (Carrington & Wilson, 2002; Hetherington, 1998), and there is still a necessity to discuss the adaptation of neo-tribes (Sweetman & Aaron, 1999).

Unlike subcultural groups under the Chicago School such as the *Punks* (Hebdige, 2012), the *Mods* (Hebdige, 2012), and the *Disco* (Chen, 2011) that transgress the parental culture and dominant culture and symbolically resolve class conflicts (Cohen, 2007), and different from the Birmingham School theory through style, resistance, and incorporation (Hu & Lu, 2006) placed in a "smaller, more localized, and more differentiated subsystem" between the mother culture, dominant culture, and popular culture (Hall, 1993), the "fluid field" The linkage of interests or empathies established by "fluid fields", "purely social" and "shared emotions" is becoming a key feature of the new circling tribe in the Chinese context (Chen, 2002; Chen & Li, 2021; Chen, 2014).

Afterall, the key to the formation of neo-tribes of subcultures is no longer resistance to the political system or adult culture since 1980s (Chaney, 2002), but empathies (Maffesoli, 1995) and shared interests (Chen & Li, 2021). "In the age of social media, the vocal approach to group politics fades, but groups that gather in groups remain active, and individual Internet users can gain a sense of belonging in neo-tribes" (Chen, 2002). If the traditional youth subculture is formed on the basis of "the existence of a certain number of actors who face the same adaptation problems and interact effectively" (Cohen, 1955), the new tribe is formed on the basis of "the existence of a certain number of actors who share a unified emotion or the same type of The basis for the formation of neo-tribes can be understood as "the existence of a certain number of actors who share a common empathy or interest and who interact effectively". In short, neo-tribes are transient, fluid alliances formed by shared interests and emotions (Sweetman, 2001). Regarding the division of specific interests and empathies, some scholars believe that collective emotions in neo-tribes are the key to collective bonding and belonging, while similar interests perform the aggregation function of re-embedding in society (Jiang & Lin, 2017), where the former provides symbolic identity and the latter provides identity (Chen, 2019). In short, shared experiences and shared emotions are the key to understanding neo-tribes (Lin, 2014).

Although several scholars have argued that empathy or interest is the basis for understanding the current Chinese online neo-tribes, no literature has yet explored the differences between the network structures within interest-based and emotion-based tribes, such as overall cohesion, cohesive group, and centrality of opinion leaders. Therefore, using social network analysis methods, a descriptive comparison of interest-based and empathy-based formation of online neo-tribes is conducted with the help of the network analysis tool UCINET 64 (Borgatti et al., 2014) to fill the relevant research gap and provide a basis for the interpretive research on the contextualization of neo-tribal theory and the development of online cultural guidance strategies.

### 3. Methodology

#### 3.1 Empathy and interest-based tribe in Chinese SNS

From a focus on primary groups based on family, extended friends and colleagues, to the rise of interest and emotional groups, the channel for maintaining relationships is changing (Zhang, 2016). Social network sites (SNS) are where this shift in the channel of maintaining relationships is taking place. As a Chinese typical SNS, Douban was built in March 2004. Starting by allowing users sharing their views on books, movies, and music, Douban gradually shifted to a social media supported by groups, discussion boards, personal homepages, and onsite communication. Douban users could form groups (a small forum), and each group has a separate homepage. Group members could post and reply, and non-group members could browse posted content.

Tribes in Douban are close to the concept of neo-tribes: groups do not rely on a central structure to maintain, and membership and group composition are fluid; they have a relatively clear style or theme, and clear boundaries with a certain threshold of entry. Specifically for the two types of tribes, the study concludes that interest-based tribes and empathy-based tribes are similar in that they both form, coalesce, grow, and form a group with boundaries based on basic ties; users within the group build ties based on weak ties. The difference lies in the way the ties are formed, with users in the former forming ties based on common interests or exchange of specific values, and users in the latter meeting based on similar experiences.

Therefore, a typical tribe, *Small-town swot* (empathy-based tribe) and *Han clothing discussion* (an interest-based tribe), were selected for the study. The two tribes are close in size and formation time, but the topics and expressions of their posts are very different. For example, in the 61-word post "Do beautiful women with short hair and less than shoulder length wear accessories in Han clothing" posted by user "Cui Hina" on May 12, 2021, she asked other tribe members about choosing right accessories for Han clothing and exchanged ideas with each other about matching earrings, hair bands, hats, ear clips, etc.

However, in the empathy-based tribe *Small-town swots*, the communication is related to experience sharing and career counseling. In the 1,457-word post "We come from a small town, we have high scores and low ability, we are paranoid" published on June 18, 2020 by "Seeing the world through reading", the author, who dropped out of the Chinese Academy of Sciences, introduces his own experience and that of his classmate "Zhao Wei", and in the post, the author, who dropped out of the Chinese Academy of Sciences, introduces his own experience and that of his classmate "Zhao Wei", and mocks the plight of young students who "come from a small town, study hard, are good at test-taking, and lack certain vision and resources" and "think their future is bright, but reality can give you a direct blow to the head". Most of the respondents interacted with each other by sharing similar experiences and discussing in a linguistic way. Therefore, in terms of posting themes and interaction methods, "*Small-town swot*" as a tribe of common interest and *Small-town swot* as a tribe of empathy have shown great differences.

Table 1 Basic information of the research subject (Douban group)

Group Name	<i>Han clothing discussion</i>	<i>Small-town swot</i> <sup>1</sup>
Category	Interest-based Tribes	Empathic Tribe
Group size	3756	3647
Build time	July 8, 2020	June 4, 2020
Main themes	Wearing sharing; purchase consulting	Experience sharing; career inquiries

#### 3.2 Method & Hypothesis

The study uses social network analysis to compare the social network structure of two types of tribes in terms of macroscopic overall network cohesion, small-scale support, opinion leader distribution respectively.

a. Macro: centralization. The central potential is used to measure the overall network cohesiveness. The centralization potential reflects the extent to which network ties are aggregated to a small number

of individuals rather than equally dispersed across all network members (Sparrowe et al., 2001), it mainly measures the degree of connectivity and cohesion in the network as a whole (Borgatti & Foster, 2003). It is calculated as the sum of the difference between the centrality of the most central node and the centrality of the other nodes, divided by the maximum possible value (Freeman, 1978). In other words, when the variance of the number of network relationships per member is low, no member can enjoy more connectedness than the others, and therefore no group member is more central than the others.

b. Meso: triad. Triads are used to analyze the smaller-scale support behavior in networks. A triad is a type of cohesive group, which is a sub-structure of a network. A basic triad consists of three nodes, where two individuals are connected to each other and each is connected to the same third party. Thus, on the one hand, it is easier to establish a connection between two individuals indirectly connected by a third party; on the other hand, the binary relationship in a triad is more solid and durable.

c. Micro: centrality. Centrality indicates the structural importance of a node to the overall network and can be measured in various ways, such as degree centrality, betweenness centrality, and eigenvector centrality. In this study, we choose the degree of point centrality, which measures the number of connections that exist between a node and other nodes.

Based on the above theoretical and conceptual background, three sets of research hypotheses are proposed.

Table 2 Hypotheses

H1	Tribes based on common interest (interest-based tribe) have weaker point-degree centralization potential than empathic tribes, and therefore weaker cohesiveness.
H2	Empathic tribes have more intensive small-scale support than small groups of interest-based tribes (more cliques).
H3a	Interest-based tribes have higher ndegree-centrality than empathic tribes, so the secondary opinion leaders are more evenly distributed.
H3b	The number of nodes with high ndegree-centrality of interest-based tribes is less than that of empathy-based tribes, so the distribution of the first-level opinion leaders is more concentrated.

### 3.3 Data

In the data acquisition process, we use a crawler to crawl all the posts of the *Han clothing* group and the *Small-town swot* group on Douban since the creation of the site, and obtain data such as post subject, author nickname, respondent nickname, reply time, and number of likes. For every n interactions between the nodes, we define n correlations.

In the data preprocessing session, the crawled network data was imported into the social network analysis software Ucinet 64, and a multi-valued matrix was generated after transposing the table into matrix format to remove duplicate postings and invalid responses. Considering the two-way interaction between the responders and the original posters, the matrix was symmetrized and exported to ##D, ##H, and CSV file formats. After the process of data, the *Small-town swot* group and *Han clothing discussion* groups had 611 and 1566 valid node-to-node data respectively.

In the data analysis session, UCINET 64 was used to calculate network size, average degree, number of ties, network density, network diameter, average path length, average path length, and normalized degree centrality data for both tribes. Deg centralization, triad number, degree centrality, and normalized degree centrality data.

## 4. Findings

### 4.1 Comparison of overall difference in network structure (H1)

Based on the derived matrix data, the basic characteristics of the two networks (size, connectivity, density, diameter, mean path, etc.) were calculated as follows.

Table 3 Basic characteristics of the two networks (size, ties, avg-degree, density, diameter, avg-length)

	<i>Small-town swot</i>	<i>Han clothing discussion</i>
Category	Empathy-based tribe	Interest-based Tribes
Network size	271	366
Avg degree	2.346	4.197
Density	0.017	0.016
Diameter	13	7
Average length	4.431	3.424
Deg Centralization	0.200	0.189

From the basic network data, the average path length of the empathic tribe (4.431) is significantly larger than that of the interest-based tribe (3.422), so the empathic tribe communicates messages faster on average; the difference in network diameter also supports this assertion, with the diameter of the *Small-town swot* group being much larger than that of its counterpart. The difference in network diameters also supports this assertion, with the *Small-town swot* group having a much larger diameter than the *Small-town swot*, reflecting more difficult member-to-member interactions. The analysis of average degree supports that each node in the *Small-town swot* group is connected to an average of 2.35 nodes, while the *Han clothing* discussion group has an average of 4.20 nodes, reflecting the willingness of members of the empathic tribe to This shows that members of the empathic tribe are less willing to establish connections with other tribe members, and the flow of information is relatively weak, so members of the empathic tribe are less inclined to establish connections with other members.

However, a contradiction emerges: in the analysis of the degree centralization, the centralization potential of the *Small-town swot* is higher than that of the *Han clothing discussion* tribe, indicating that the former has a higher degree of cohesion. Thus, in the macro network analysis, the mean degree and mean path data indicate that the empathic tribe members are less willing to establish ties with each other than the interest-based tribe, but it is more cohesive, so it is necessary to move to the analysis of the sub-groups that make up the two networks and look for answers in the triad statistics.

#### 4.2 Small-scale support comparison of tribal members (H2)

For a directed binarized network, there exist 16 different triadic relations that can be distinguished according to the number and direction of directed ties they include (Wasserman et al., 1994). Since this is a symmetrized undirected network, only four triadic relations exist in UCINET after using the triad census. It can be found that the *Han clothing discussion* has more unconnected triads, while the *Small-town swot* has more fully connected triads.

Table 4 Triad analysis

	Empathy-based	Interest-based
Number of Close Triads	2323	1160
Number of Open Triads	4202	11953
Number of Connected Pair	150869	307858
Number of Unconnected	3123061	7783489

The contradiction between activity level and network cohesiveness was answered. Although the average degree and network size of empathic tribes were lower compared to interest-based tribes, relational tribes had a higher number of triads, indicating stronger mutual support of actors at their small-scale level. Compared to interest-based tribes, although empathic tribe members are less willing to establish ties with others, they are more likely to establish closely supported small group support relationships.

#### 4.3 Comparison of the distribution of opinion leaders in the tribe (H3)

The n-degree centrality is used to compare the distribution of high influence individuals in different networks horizontally, i.e., the point degree of a node is divided by the number of potential neighbors

that the node may have, in order to eliminate the error caused by different network sizes through normalization operations and make different networks horizontally comparable. If a node has a high centrality, the higher its tendency to influence other nodes.

Table 5 Characteristics of the point degree centrality list of the two networks

nDegree	Empathy-based tribe	Interest tribe
maximum	0.021296296	0.035844751
minimum	0.00308642	0.0022831
average	0.01047788	0.01393567

The *Han clothing discussion* group has an extremely strong standard point degree centrality node, with the point degree centrality of 0.03584 for the Douban user "Sen Shang Miao", which is much higher than the second most influential user "Cui Eina" with 0.02078. In the *Small-town swot* group, it is an extreme opinion leader that differs greatly from other opinion leaders. According to the extreme value observation, the interest-based tribe has an exclusive and monopolistic opinion leader; the extreme value difference of the empathy-based tribe is small.

However, these findings only explain the extreme part of the two networks, but not the distribution of high-impact individuals. To understand whether the high impact individuals are more evenly distributed, the top 10% of the nodes in each of the two networks are defined as high-impact individuals. The first-level opinion leaders are more concentrated in empathy-based group, while in the interest-based group, the distribution of opinion leaders is relatively even. In the interest-based tribes, the head opinion is concentrated in very few users, but the secondary opinion leaders are more evenly distributed.

## 5. Conclusion and Discussion

This study compares the social network structures of different Chinese empathy-based and interest-based neo-tribes through social network analysis methods, from overall network cohesion (degree centralization), small scale support (triad), and opinion leader distribution (n-degree centrality), respectively. The social network structure of neo-tribes based on empathy and interest-based social media networks was compared. It is found that empathy-based tribes are less cohesive than interest-based tribes, tribal members have less overall willingness to connect with others, and opinion leaders are more dispersed, but small-scale support among members is more frequent.

Social network measurement of neo-tribes is the basis for developing localized guidance strategies. For example, the first-level opinion leaders of the empathy-based tribe are more evenly distributed, and there are no outstanding individual opinion leaders. However, since the small-scale support among the members of the empathy-based tribe is stronger, the guidance for the empathy-based tribe can focus on the grassroots level and exert influence on the small groups (cliques).

Although the study has considered the difference between two tribes in sample selection by choosing tribes with similar number of users and establishment time, and standardized networks of different sizes by using n-degree centrality and deg-centralization, the study only adopts the n-degree centrality in the measurement of opinion leaders, which can be further distinguished by the betweenness centrality and Eigenvector centrality in the future. For example, users with high betweenness centrality often represent the "gatekeeper" to a certain group, and showing how to locate and influence the "gatekeeper" of neo-tribes is also important for youth guidance.

In summary, the practical significance of this study lies in the fact that the recontextualized new tribe theory is an important component of youth culture, and therefore revealing its mechanism is a prerequisite for interpreting Chinese youth network culture and formulating differentiated network governance and cultural guidance strategies; the methodological innovation lies in introducing the social network analysis method into the study of network tribes, and pointing out the macro, meso, and micro network structure differences among different tribes formed based on interest and empathy. Therefore, the theoretical significance lies in the subsequent interpretive research to analyze the specific reasons for its differences so that more detailed and microscopic youth cultural guidance

strategies could be launched. For example, depth interview can be used to explore why empathic tribes are less cohesive while small-scale support is stronger. In addition, the significance of revealing the differences of two kind of neo-tribes can be explored by placing them in a larger social context, for example, helping further research understanding the differences performance of empathy-based tribes and interest-based tribes in cyber nationalism.

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