

Social Networks and Citizen Participation in the Collaborative Community Policing—A Case Study of S Community in Beijing

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It is of great significance to enhance collaborative community policing for crime prevention and better community-police relationships. Understanding the relational structure of collaborative community policing is necessary to pinpoint the pattern of interactions among key actors involved in community policing and improve the effectiveness of network governance. Based on 234 surveys of citizens of S Community in Beijing from April 2017 to May 2017, this paper empirically examines the characteristics of formal network and informal network of citizen participation in the collaborative community policing. Beijing is widely known for its active involvement of neighborhood volunteers in different types of community policing. We focused on four different types of interpersonal work relationships in this study: workflow, problem solving, mentoring and friendship, among resident committees, neighborhood administrative offices, media, police station, business security personnel, neighborhood volunteers, and security activists. The nature of relationships between individuals in networks can be treated as from instrumental ties to expressive ties. Expressive ties cover relationships that involve the exchange of friendship, trust, and socio-emotional support. We extended this intra-organizational insight into a community policing inter-organizational context. The collaborative network showed the trend of the distributed network. The clustering analysis showed that in the workflow network, we should make full use of the close interaction between the citizens and activists in the community. Meanwhile, in the problem-solving network, mentoring network and friendship network, interactions between citizens and neighborhood committee are weak.

Keywords: social networks, citizen participation, collaborative community policing

Introduction

The comprehensive management of community policing needs to enhance the function of community service and realize the effective interaction among government governance, social regulation, and citizen autonomy. People are increasingly aware of the importance of citizens participating in the comprehensive management of community policing. Through their participation in the comprehensive management of community policing, they are guided by the people to express their opinions and resolve disputes. At the grassroots level, the comprehensive management of community policing started from the vertical model to the horizontal model. In the process of multi-participatory change, it is of crucial importance for citizens to participate in the comprehensive management of community policing for maintenance of social stability and the basic security needs of the people. Using social networks to study the participation of citizens in the

comprehensive management of community policing is consistent with the concept of shared governance. The comprehensive management of community policing means that the transformation started from the traditional management of community policing to multi-participations in the comprehensive management of community policing.

This article investigates the comprehensive management of community policing based on the social network method. Taking S community citizens in Beijing as an example, this paper observes the role of citizens in S community in Beijing in comprehensive governance, and studies the role of workflow network, problem-solving network, mentoring network, and friendship network.

Citizen Participation in the Collaborative Community Policing

The participation of citizens in the field of comprehensive management of community policing is being paid growing attention. It is generally accepted that citizens are one of the governance subjects of community policing. Extensive discussions have been carried out on the role of citizens in community policing and their relationship with other subjects. The discussion on citizen participation in community policing shows the following characteristics: First, the research trend is changing from qualitative research to quantitative research; second, in the research method, gradually from single subject research to cross-disciplinary research; thirdly, in the scope of research, gradually from the government-led community policing research to the multivariate collaborative social governance research. The advantage of social network analysis lies in the fact that it is possible to study the relationships between subjects and the attributes of these relationships from a computable and visual perspective.

The concept of social network was originally proposed by Barnes (1954). Barnes believed the traditional analysis of structure and function of the organization theory explanation strength was not strong, but the concept of social network could reflect the social connections among members of any small group in society and clearly analyze the impact of the relationship on the behavior of various actors in the group. Social network theory holds that the world is a network structure composed of social actors and relationships. Through the network of relationships, actors find opportunities, exchange resources and utilize resources. Wellman and Berkowitz (1997) summarized five characteristics of social network analysis: First, social network analysis is based on social structure to explain the behavior, rather than by its internal factors to explain; second, it focuses on different social members rather than the individual's intrinsic attributes or essence; thirdly, it focuses on the influence of network forms formed by multidimensional relationships on social behavior, not confined to two-dimensional relationships; fourthly, the modules constituting social network structure do not necessarily have strict group boundaries; fifth, the social network analysis method complements and even replaces the traditional statistical method, and no longer isolates the individual analysis units, but studies the overall relationship attributes. Based on the definitions of Barnes' definition of social relations and Wellman's definition of social structure, Freeman (2004) argued that social network analysis includes four characteristics: One is to consider the overall network structure of community policing; the other is to demonstrate the influence of network structure on the behavior of community policing; third, the use of diagrams to represent social networks; fourth, the use of mathematical models, statistical techniques, and other forms to represent social networks. Social Network Analysis (SNA) provides a rich and systematic approach to assessing informal networks by mapping and analyzing relationships among employees, teams, departments, and even entire organizations.

Some scholars believed that the comprehensive management of community policing was related to the relationship between the subjects in community policing. Wybo and Lonka (2003) believed that the security governance of the community was an interactive process between government and other stakeholders, especially citizens. Waugh (2006) proposed that it was hard to cope with the crisis of public security by relying solely on the government. He emphasized the importance of mobilizing the enthusiasm of various forces such as citizens, social groups, and non-profit organizations, and advocated the collaboration between Federal Emergency Management Agency and local state. Liu Chengzhong (2008) argued that community emergency messengers were the most basic and broadest way to obtain emergency information, and the community citizens were the first insiders who have an emergency. Yuan Zhenlong (2009) conducted a survey on two communities in Beijing. The results showed that the higher the level of community participation, the better the public security situation in the community. At the same time, the levels of participation of the two communities in political participation such as “decision-making participation” and “expression of opinions and suggestions” were generally low. Chen Zhouwang and Shen Jianmin (2011) summarized the main models and trends of public security governance theories. He divided the security theories into three models: transition theory, broken window theory, and rational choice theory. He contended that the central topic of community security theory will be returned community policing and encourage grass-roots community forces to actively participate in community public security management. Miehl and Miehl (2011) claimed that communication between community citizens and other organizations could promote the effective implementation of community emergency plans and improve the security governance of the community. Connolly (2012) pointed out that community should be called on citizens to help at the beginning of emergency, and he also proposed the community should form and train Community Emergency Response Team (CERT) so as to make full use of the resources of the first responders.

Some scholars believed that social network analysis could be used for community policing in the main body of resource exchange and interaction. Based on community policing of social network analysis, research on community policing indicated that coping with large-scale public security threats required good cooperation between individuals and organizations. Information delivery and network management are the keys to coping with public crises. Jaeger, Shneiderman, Fleischmann, Preece, Qu, and Wu (2007) pointed out that community grid management provided a platform for citizens and crisis responders to share information, exchange and coordinate activities through Internet and mobile communication devices. Eisenman, Glik, Gonzalez, Maranon, Zhou, Tseng, and Asch (2009) conducted a study on the level of public security preparedness of community citizens through social network analysis, pointing out that enhancing communication between citizens could help improve the level of public security in the community. From the perspective of civil society, Zhu Wuxiong (2010) claimed that we should strengthen the construction of civil society to promote citizen participation, perfecting the internal management of civil society organizations, establishing a cooperative network of civil society. From the perspective of social capital, Zhang Xue (2015) asserted the importance of citizen participation in community policing and it was important to construct citizens’ participation in community public safety governance by improving the public spirit, trust, regulation, and the positive functions of social capital.

Although scholars have paid increasing attention to the important role of citizens’ participation in the comprehensive management of community policing, the current research has limited discussion on the interaction between citizens and other stakeholders in the network of community policing. Therefore, taking the

community participation of S community citizens in Beijing as an example, this paper empirically examines the characteristics of formal network and informal network of citizen participation in the collaborative community policing.

Research Methods

Location and Sample

In this paper, the method of random stratified sampling was used to investigate. First, the questionnaire was compiled based on the 2016 New Mexico Nonprofit Social Network Questionnaire, and the pre-research invited experts to revise and adjust the terms to construct the content validity of the scale. The questionnaires based on pre-research feedback were not included in the final statistical analysis. Finally, the survey was conducted with the revised questionnaire. Based on 234 data of S community in Beijing from April 2017 to May 2017, this paper employs the method of SNA to empirically examine the characteristics of formal network and informal network of citizen participation in the collaborative community policing. The surveyed community citizens in the comprehensive management of community policing are mainly involved in the team, i.e., anti-pick-pocket patrol, neighborhood patrol, residential apartment building security chiefs, residential post-prison-release visitation organizations and propaganda teams. The main demographic variables investigated are shown in Table 1.

Table 1

Investigation Table

| Classification index | Working time in the community | 1-5 years | 6-15 years | 16-25 years | Above 26 years | Total | Effective percentage |
|----------------------|-------------------------------|-----------|------------|-------------|----------------|-------|----------------------|
| Gender | Male | 48 | 4 | 11 | 2 | 65 | 27.8% |
| | Female | 88 | 58 | 9 | 14 | 169 | 72.2% |
| Education | Master or above | 25 | 2 | 1 | 3 | 31 | 13.2% |
| | Undergraduate | 15 | 15 | 8 | 5 | 43 | 18.4% |
| | College and below | 96 | 45 | 11 | 8 | 160 | 68.4% |
| Age | Below 25 years | 21 | 7 | 11 | 4 | 43 | 18.4% |
| | 26-40 years | 22 | 9 | 5 | 7 | 43 | 18.4% |
| | 41-60 years | 63 | 17 | 2 | 3 | 85 | 36.3% |
| | Above 60 years | 30 | 29 | 2 | 2 | 63 | 26.9% |

Research Methods

Following a structural/relational approach, we looked into four different types of intraorganizational networks in this study: workflow network, problem solving network, mentoring network and friendship network. Formal networks are prescribed networks that consist of formally defined relationships between superiors and subordinates, and people from different functional departments interacting to perform a particular task. Informal networks are “more discretionary patterns of interactions, where the content of relationships may be work-related, social or combination of both” (Ibarra, 1993). Instrumental ties include exchanges of job-related resources, information, expertise, career direction, and guidance. The nature of relationships between individuals in networks can be treated as from instrumental ties to expressive ties. Expressive ties cover relationships that involve the exchange of friendship, trust, and socio-emotional support.

The Comprehensive Management of Community Policing of S Community in Beijing

Through the use of UCINET6.0 software, the article conducts a comparative study of data from 234 citizens surveyed in the S community. The comprehensive management of community policing involves the relations among resident committees, neighborhood administrative offices, media, police station, business security personnel, neighborhood volunteers, and security activists.

Network density. The overall density of the network is commonly used to measure the degree of tightness between the various actors in the social network. The overall network density of community policing network of S community in Beijing refers to the ratio of the number of associations actually owned and theoretically owned in the network of S community in Beijing. The term is “ $D = 2L/n(n-1)$ ”, where L represents the number of actual relationship lines included in the network; n represents the number of nodes in the network; the value of overall network density is between 0 and 1. The greater the density of the network is, the greater the impact of the network on the attitudes and behaviors of the various subjects in the network is.

The degree of network. The degree of network refers to the number of relationships owned by a network member, which reflects the extent to which an individual or organization has an influence on a social network or reflects the degree to which subject is at a core position in a social network. The degree of network is the most direct measure of the center of the nodes. The higher the degree of centrality is, the more direct contacts between the actor and other individuals have. In the undirected figure, the degree is calculated.

$$C_D(n_i) = d(n_i) = \sum_j x_{ij} = \sum_j x_{ji},$$

Subgroup analysis of network cohesion. In addition to network density and the degree of network, attention is also paid to group studies in the comprehensive management of community policing of S community in Beijing. Subgroups are small groups in the network, including factions, n-factions, n-denominations, k-cores, and other types. If there is a relatively strong, close, and positive relationship among the members of S community in Beijing, they will form cohesive subgroups. We tried to find out how many kinds of network cohesion exist in the comprehensive management of S community in Beijing, in order to understand the impact of these cohesive subgroups on the overall network.

Findings

Visual Analysis of Community Policing Network of S Community in Beijing

Using UCINET 6.0 software, we analyzed the workflow network (Figure 1), problem-solving network (Figure 2), mentoring network (Figure 3), and friendship network (Figure 4). In this research, all the networks are undirected networks. The arrow indicates the cooperative support relationship between the main actors of community policing. The thickness of the connection represents the strength of the connection and the size of the node shape indicates the centrality. The result shows that the whole connected network is a decentralized network.

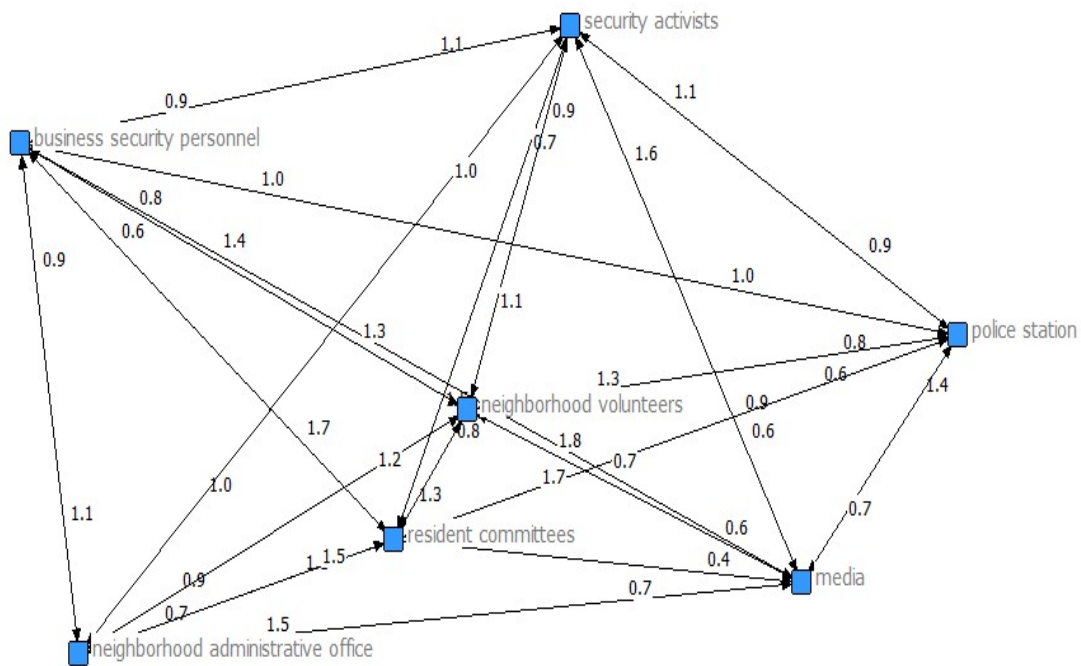


Figure 3. Mentoring network.

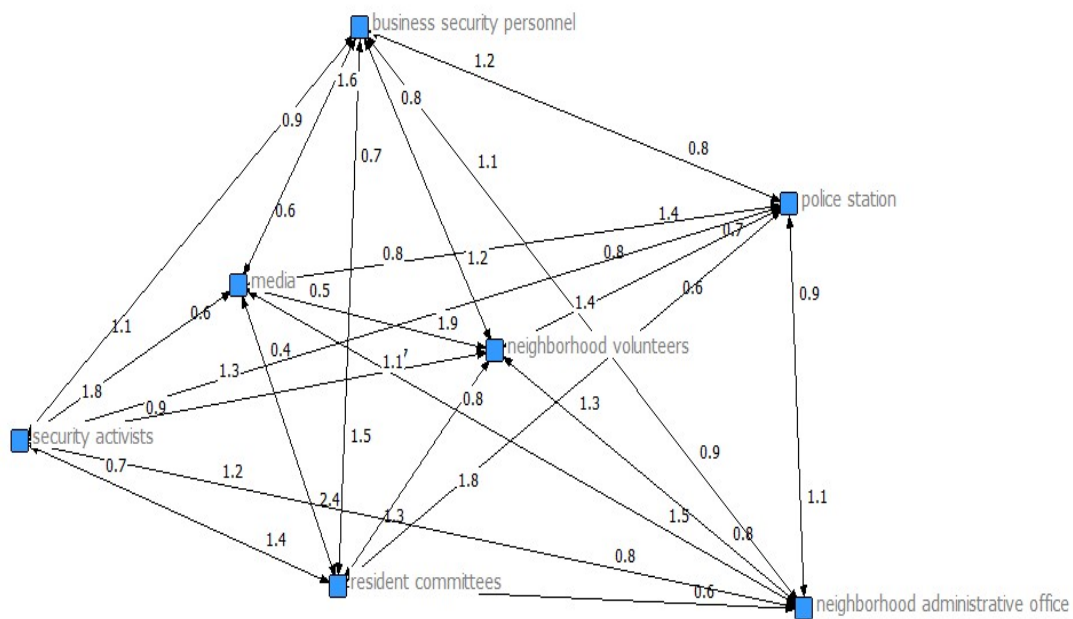


Figure 4. Friendship network.

Network Structure and Characteristics of Community Policing of S Community in Beijing

Network density of S community in Beijing. After the appropriate conversion of the multi-valued relational data, the density of the workflow network of S community in Beijing is 0.4748, which has a close degree of 47.48%. The density of the problem-solving network of S community in Beijing is 0.3531, which has a close degree of 35.31%. The density of the mentoring network of S community in Beijing is 0.3916, which has a close degree of 39.16%. The density of the friendship network of S community in Beijing is 0.4264,

which has a close degree of 42.64%. We can draw the conclusion that the workflow network is closely related while the problem-solving network is not close enough.

The degree of network of S community in Beijing. Network center degree of S community in Beijing reflects the balance of the overall network (Table 2). The degree of standardization of the workflow network of S community in Beijing is 22.17%; the degree of standardization of the problem-solving network of S community is 19.37%; the degree of standardization of the mentoring network is 16.77%; and the degree of standardization of the friendship network is 18.42%. We can see that network center degree of the workflow network, problem-solving network, mentoring network, and friendship network in S community in Beijing are low. The community policing network showed the trend of the distributed network.

Network center degree of S community of the neighborhood volunteers ranked third in the workflow network, mentoring network, and friendship network, respectively 8.000, 7.980, 8.170. Network center degree of S community of the neighborhood volunteers ranked fourth in the problem-solving network, which has a degree of 7.600, indicating that the neighborhood volunteers had moderate influence on the network. Resident committees and media have a direct and strong relationship with other actors, which are highly influential members of the network, thus occupying a strategic position of the network.

Table 2

Statistics Table of Community Policing Network of S Community in Beijing

| Workflow network | Degree | Nrm Degree | Share | Problem-solving network | Degree | Nrm Degree | Share |
|------------------------------------|--------|------------|-------|------------------------------------|--------|------------|-------|
| Media | 11.320 | 69.109 | 0.815 | Resident committees | 9.800 | 76.682 | 0.174 |
| Resident committees | 10.730 | 65.507 | 0.176 | Media | 9.140 | 71.518 | 0.163 |
| Neighborhood volunteers | 8.000 | 48.840 | 0.131 | Business security personnel | 7.680 | 60.094 | 0.137 |
| Police station | 7.920 | 48.352 | 0.130 | Neighborhood volunteers | 7.600 | 59.468 | 0.135 |
| Security activists | 7.770 | 47.436 | 0.127 | Police station | 7.410 | 57.981 | 0.132 |
| Business security personnel | 7.690 | 46.947 | 0.126 | Security activists | 7.300 | 57.120 | 0.130 |
| Neighborhood administrative office | 7.650 | 46.703 | 0.125 | Neighborhood administrative office | 7.290 | 57.042 | 0.130 |
| Mentoring network | Degree | Nrm Degree | Share | Friendship network | Degree | Nrm Degree | Share |
| Resident committees | 9.930 | 71.957 | 0.065 | Media | 10.450 | 72.873 | 0.174 |
| Media | 9.900 | 71.739 | 0.064 | Resident committees | 9.920 | 69.177 | 0.165 |
| Neighborhood volunteers | 7.980 | 57.826 | 0.064 | Neighborhood volunteers | 8.170 | 56.973 | 0.136 |
| Police station | 7.610 | 55.145 | 0.064 | Police station | 8.130 | 56.695 | 0.136 |
| Business security personnel | 7.590 | 55.000 | 0.064 | Security activists | 7.820 | 54.533 | 0.130 |
| Security activists | 7.480 | 54.203 | 0.064 | Neighborhood administrative office | 7.780 | 54.254 | 0.130 |
| Neighborhood administrative office | 7.450 | 53.986 | 0.064 | Business security personnel | 7.670 | 53.487 | 0.128 |

Subgroup analysis of network cohesion of S community in Beijing. Using the CONCOR method in UCINET6.0, we can use the iterative correlation convergence method to analyze the internal microcosmic structure of the innovation network of S community in Beijing, and obtain structure diagrams of the workflow network (Figure 5), problem-solving network (Figure 6), mentoring network (Figure 7), and friendship network (Figure 8). The clustering analysis here is not a realistic division of factions or small cliques, but to consider which actors within the S Community network have strong, close and frequent links.

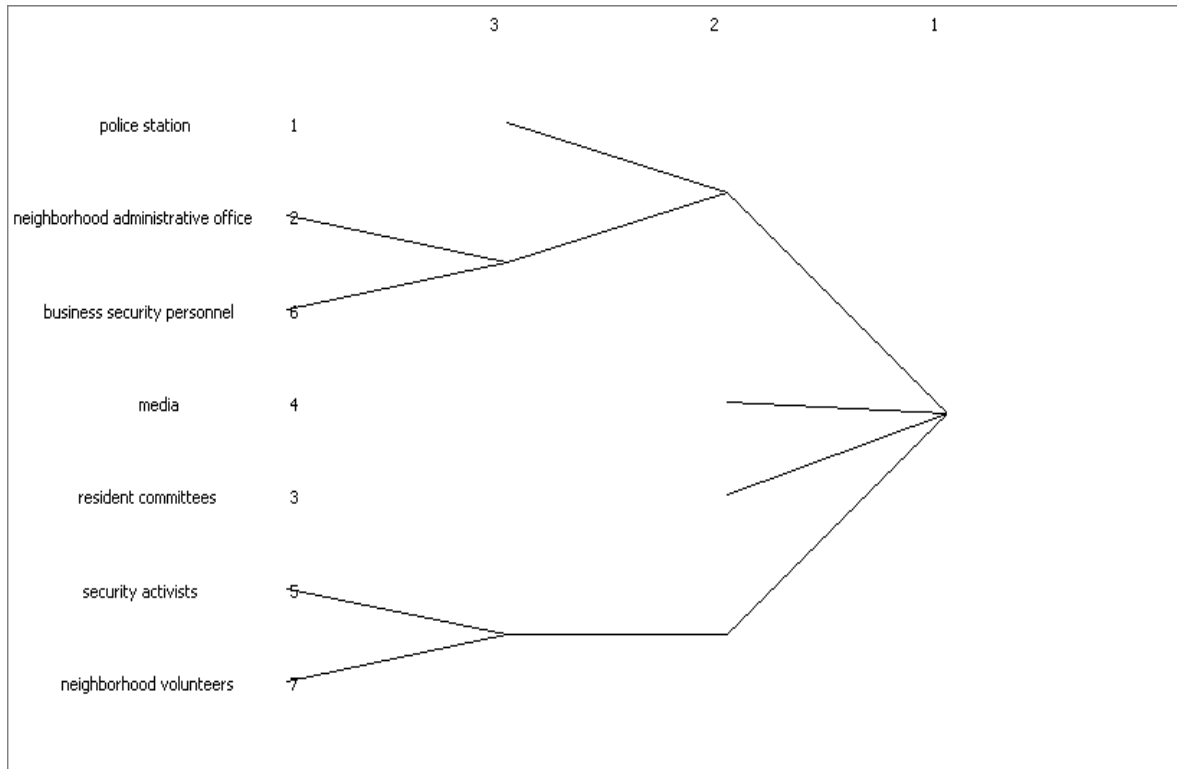


Figure 5. Workflow network.

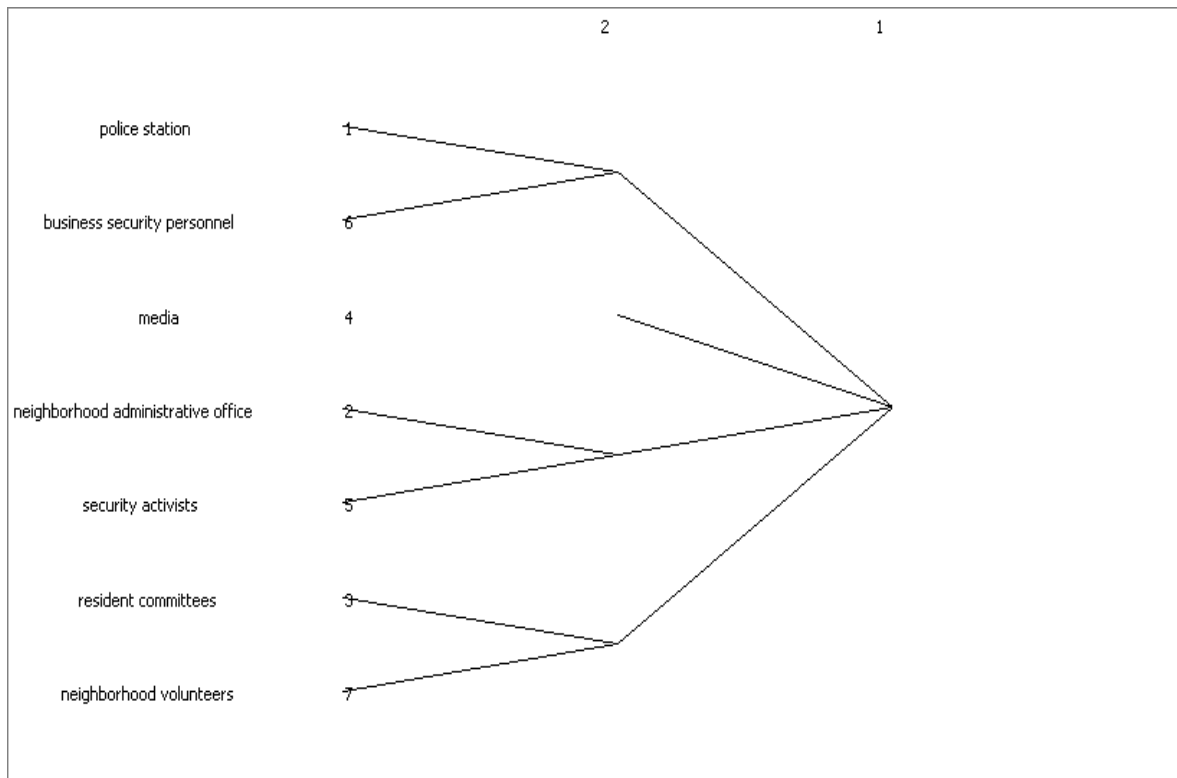


Figure 6. Problem-solving network.

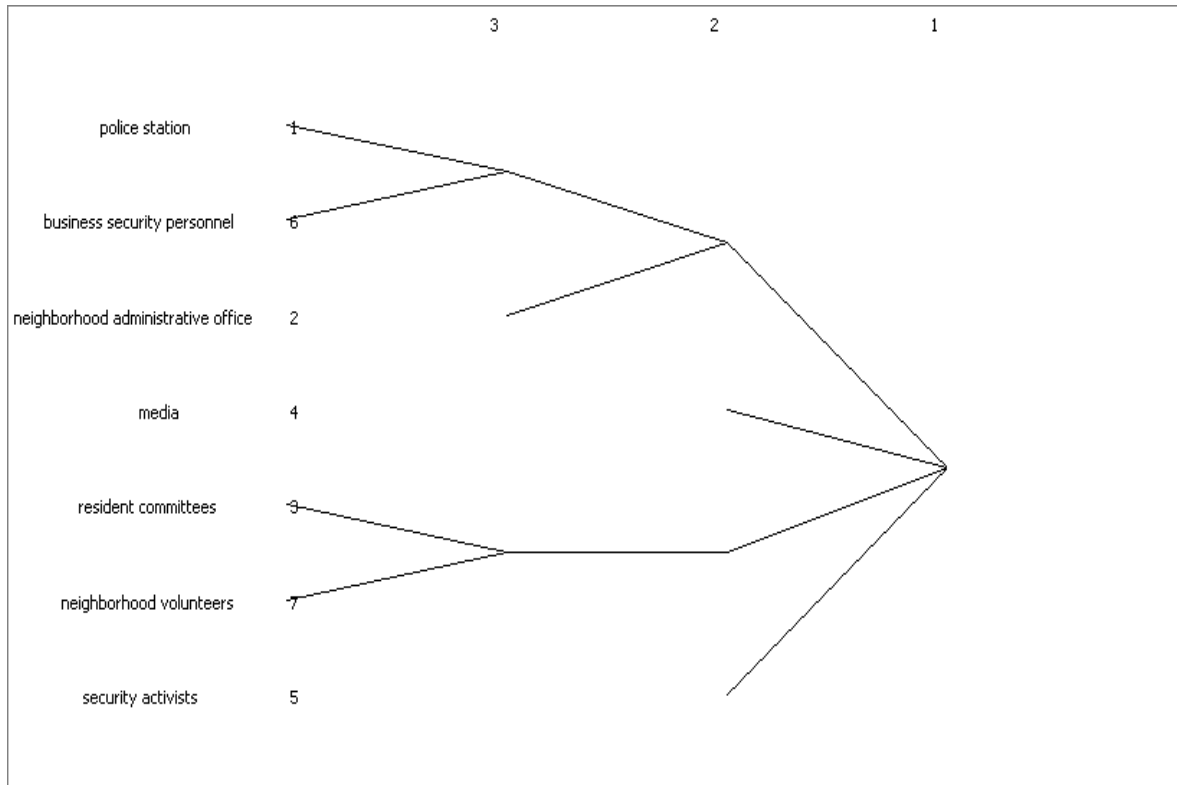


Figure 7. Mentoring network.

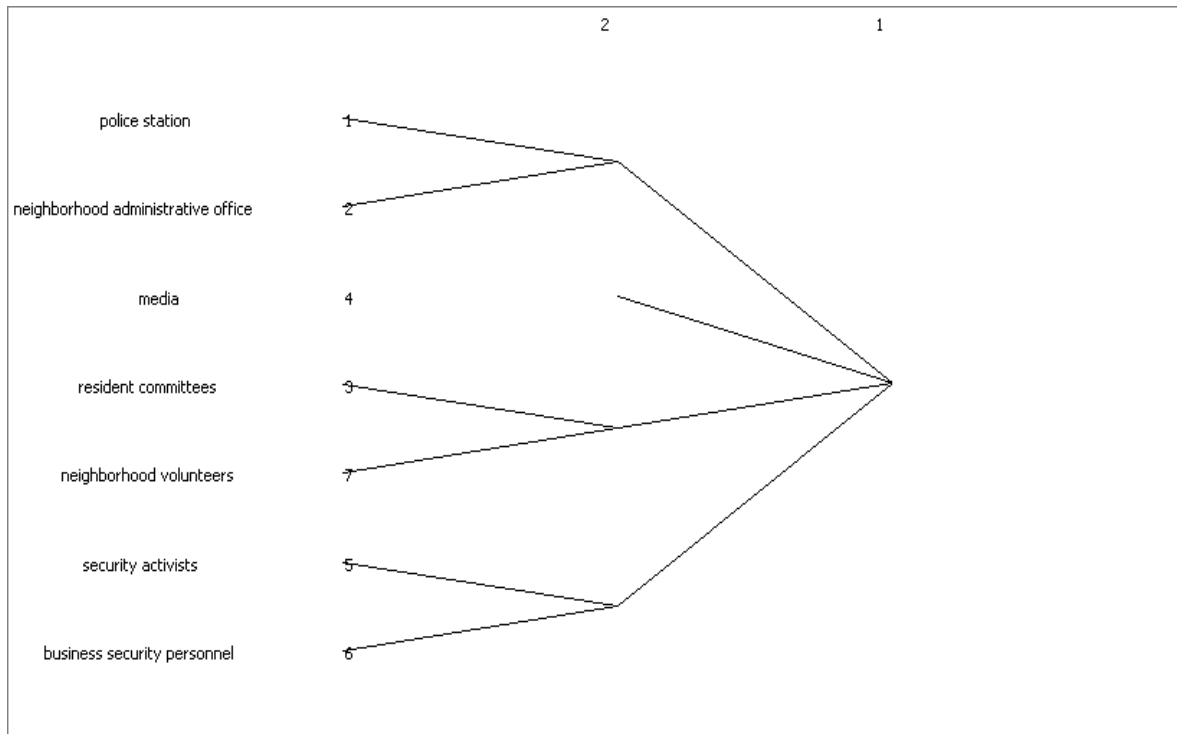


Figure 8. Friendship network.

From the practice of current community policing of S community in Beijing, the network cohesion is also gradually emerging among resident committees, neighborhood administrative offices, media, police station, business security personnel, neighborhood volunteers, and security activists. As can be seen from Figure 5, neighborhood volunteers and security activists form a cohesive subgroup in S community; from the problem-solving network (Figure 6), the mentoring network (Figure 7), and the friendship network (Figure 8), it can be seen that neighborhood volunteers and resident committees formed a cohesive subgroup in S community.

It shows that in the formal network (workflow network) of comprehensive management of community policing of S community in Beijing, the interactions between neighborhood volunteers and security activists are relatively close; in the problem-solving network and mentoring network, the interactions between neighborhood volunteers and resident committees are relatively close; in the friendship network, the interactions between neighborhood volunteers and resident committees are relatively close.

Conclusion

With the framework of SNA, we explored the relational structure of collaborative community policing among resident committees, neighborhood administrative offices, media, police station, business security personnel, neighborhood volunteers, and security activists from two aspects. On the one hand, it is to integrate actors into the framework of the same network, analyzing the overall properties of the network of citizen participation in the collaborative community policing; on the other hand, this paper focuses on analyzing the position of each actor and the relationship among network subgroups.

The Overall Characteristics and Management Practice of Community Policing Network

Citizen participation in the comprehensive management of community policing not only has a beneficial impact on the overall network structure, but also affects the role of individual actors. First of all, from the network density of S community in Beijing, the network of citizen participation in the collaborative community policing is less intensive. For one thing, the interaction is weak among resident committees, neighborhood administrative offices, media, police station, business security personnel, neighborhood volunteers, and security activists. For another, the formal network (workflow network) has a high density, indicating that there is a high degree of collaboration in advocating the promotion of changes in the comprehensive management of community policing. However, problem-solving network between formal networks and informal networks is at a low level, indicating that the relative resources and information involved in the comprehensive management of community policing are at a low level and lack of a sound financing mechanism for activities of community policing.

First, in the process of comprehensive management, the community should improve the supporting system, supervision system, and rewards and punishment system; second, it is necessary to enhance the sense of identity and belonging of community citizens, increase the participation of citizens, rationally and scientifically allocate the community resources and information. Thirdly, the degree of network of S community in Beijing reflects the trend of distributed network, which means that there is much room for improvement in community prevention and control.

The Position of Each Actor and the Relationship Among Network Subgroups

In the comprehensive network of community policing, each actor's ability to access and manipulate resources is also different, so the status and influence of the network are different. The status and influence of

actors (resident committees, neighborhood administrative offices, media, police station, business security personnel, neighborhood volunteers, and security activists) depend on the location of the node. Resident committees and media have a direct and strong relationship with other actors and are highly influential members of the network, thus occupying a strategic position of the network. Neighborhood volunteers rank third in the degree of workflow network, mentoring network, and friendship network, while ranking fourth in the degree of problem-solving network, indicating the impact of neighborhood volunteers in the comprehensive network of community policing. With an intention of enhancing the influence of neighborhood volunteers in the community and increasing the participation of resident committees in the comprehensive management of community policing, a management plan should be formulated for diversified management programs.

Build a Community Network to Maintain Community Safety and Stability

Building a community network to maintain community safety and stability means that it is possible for the community governance of citizen autonomy and citizen participation. Instead of the vertical model, a flexible horizontal network of governance is adopted to integrate and coordinate formal networks and informal networks in comprehensive management of community policing, including workflow network, problem-solving network, mentoring network, and friendship network. In the workflow network of formal network, close interaction between the neighborhood volunteers and security activists should be fully utilized; in the problem-solving and mentoring network, which lies between the formal network and the informal network, close interaction between neighborhood volunteers and resident committees should be fully utilized; in the friendship network of informal network, close interaction between neighborhood volunteers and resident committees should be taken into account. Communities should mobilize the enthusiasm of actors (resident committees, neighborhood administrative offices, media, police station, business security personnel, neighborhood volunteers, and security activists) so that the relationships are balanced and harmonious to improve the performance of network management. At the same time, communities should maintain openness to changes in the external environment and internal factors, in order to promote the governance capacity and efficiency of community policing.

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