A Case Study of Tibet's "3.14" Anti-terrorism Based on Social Network Analysis

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Abstract. In recent years, terrorism has emerged as the main feature of networking and decentralization. To understand the intrinsic link between terrorists and terrorist cases more accurately, social network analysis methods have received increasing attention from researchers. This article takes Tibet’s “3.14” terrorism as an example. It uses the acquired data as a data source to build a relationship matrix and build a relational network model. It uses UCINET software to perform network visualization analysis of events. The measured values can be applied to the formulation of China's anti-terrorism strategy.

Introduction

Since the "9.11" incident, the prevention and attack of terrorism has become the common goal of all countries in the world. The study on the relationship between terrorist organizations and terrorists is particularly important [1]. In the context of the continuous development of mathematical methods, graph theory and statistics, researchers have found better research methods to study the relationship between terrorist organizations and terrorists. This method is Social Networks Analysis (SNA) [2]. UCINET is one of the most used and most versatile social network analysis software [3]. When analyzing social networks, the density analysis can reflect the close relationship between nodes in the social network. At the same time, if the node has a particularly high centrality, it indicates that the node may be in the core of the leadership in the network and has a great influence [4]. This article takes Tibet’s “3.14” terrorism as an example. It uses the acquired data as a data source to build a relationship matrix and build a relational network model. It uses UCINET software to perform network visualization analysis of events and calculate the relevant measured values.

Event Background

On March 14, 2008, a group of lawless elements smashed and looted in the main areas of Lhasa, the capital of the Tibet Autonomous Region. This incident caused great loss of life and property of the local people and serious damage to the local social order. In addition, 18 innocent people were burned or hacked, and 382 injured people, including 58 seriously injured. Lhasa’s direct property losses amounted to 24,468.78 million yuan. The investigation revealed that the culprit of this serious violent crime was the domestic and foreign separatist forces led by the Dalai clique.

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Data Sorting

The data in this example is mainly derived from relevant information published by the network. Because the information in the event is highly uncertain, the basic elements are determined to be organizations and events based on relevant information collected from the Internet. The specific contents are shown in Table 1 and Table 2.
### Table 1. Organization and events

| Number | Organization and events                                   |
|--------|------------------------------------------------------------|
| S1     | Dalai Group                                               |
| S2     | "Tibetan Youth Club"                                      |
| S3     | "Tibetan Women's Association"                             |
| S4     | "Nine, Ten, Three Movements"                              |
| S5     | "Sishui Liugang"                                          |
| S6     | Tibetan government in exile                               |
| E01    | Commemorate the "49th Anniversary of Tibet's Anti-riot Uprising" in India |
| E02    | Incite about 300 monks from the Dazhao Temple in Lhasa, Tibet, to enter the Lhasa manufacturing incident |
| E03    | The Dalai clique held a meeting and decided to raise funds from the Ministry of Finance of the Tibetan Exile Government |
| E04    | Send people to the Tibetan colonies of India and Nepal, and teach them to encourage domestic family members to make trouble |
| E05    | Raise funds                                               |
| E06    | Advocate and plan for greater violence                     |
| E07    | Dissemination of information on "Tibet independence" in various places |

### Table 2. Resources and skills

| Number | Resources and skills                                      |
|--------|------------------------------------------------------------|
| Z01    | Capital supply                                             |
| Z02    | Use the Internet to incite emotions                       |
| Z03    | Contact tool                                               |
| Z04    | Activity staff                                             |
| Z05    | Historical influence                                       |
| Z06    | Event venue                                                |
| K01    | Organizational planning ability                            |
| K02    | Network mobility                                           |
| K03    | Ability to contact members of various organizations        |
| K04    | command ability                                            |
| K05    | Ability to fabricate false events                          |
| K06    | The ability to make a living with typical events           |
| K07    | Ability to make rumors                                     |

### Construction of Relation Matrix

According to the relationship determined in the previous section, construct the relationship matrix as shown in Table 3. According to the relationship determined above, the following relationship matrix can be constructed: a terrorist organization-event relationship matrix, a terrorist organization-resource relationship matrix, as shown in Table 4, Table 5.
### Table 3. Relational tables

| Number | Task | Resource | skill |
|--------|------|----------|-------|
| S1     | E1,E2,E3 | Z1,Z2,Z3,Z4,Z5, Z6 | K1,K2,K3,K5,K6,K7 |
| S2     | E4   | Z2,Z3,Z4,Z5,Z6 | K2,K3,K4,K6,K7 |
| S3     | E4   | Z3,Z4 | K2,K3,K4,K5,K6,K7 |
| S4     | E4   | Z1,Z3,Z4 | K1,K2,K3,K4 |
| S5     | E4   | Z3,Z4 | K3,K4,K5,K6,K7 |
| S6     | E5,E6,E7 | Z3,Z4,Z5,Z6 | K3,K5,K6,K7 |

### Table 4. Terrorist organization-event relationship matrix

|          | E01 | E02 | E03 | E04 | E05 | E06 | E07 |
|----------|-----|-----|-----|-----|-----|-----|-----|
| S01      | 1   | 1   | 1   | 0   | 0   | 0   | 0   |
| S02      | 0   | 0   | 0   | 1   | 0   | 0   | 0   |
| S03      | 0   | 0   | 0   | 1   | 0   | 0   | 0   |
| S04      | 0   | 0   | 0   | 1   | 0   | 0   | 0   |
| S05      | 0   | 0   | 0   | 1   | 0   | 0   | 0   |
| S06      | 0   | 0   | 0   | 0   | 1   | 1   | 1   |

### Table 5. Terrorist organization-resource relationship matrix

|          | Z01 | Z02 | Z03 | Z04 | Z05 | Z06 |
|----------|-----|-----|-----|-----|-----|-----|
| S01      | 1   | 1   | 1   | 1   | 1   | 1   |
| S02      | 0   | 1   | 1   | 1   | 1   | 1   |
| S03      | 0   | 0   | 1   | 1   | 0   | 0   |
| S04      | 1   | 0   | 1   | 1   | 0   | 0   |
| S05      | 0   | 0   | 1   | 1   | 0   | 0   |
| S06      | 0   | 0   | 1   | 1   | 1   | 1   |

### Table 6. Terrorist organization-skill relationship matrix

|          | K01 | K02 | K03 | K04 | K05 | K06 | K07 |
|----------|-----|-----|-----|-----|-----|-----|-----|
| S01      | 1   | 1   | 1   | 0   | 1   | 1   | 1   |
| S02      | 0   | 1   | 1   | 1   | 0   | 1   | 1   |
| S03      | 0   | 1   | 1   | 1   | 1   | 1   | 1   |
| S04      | 1   | 1   | 1   | 1   | 0   | 0   | 0   |
| S05      | 0   | 0   | 1   | 1   | 1   | 1   | 1   |
| S06      | 0   | 0   | 1   | 0   | 1   | 1   | 1   |

### Construction and Analysis of Terrorist Activity Network

According to the above data, UCINET network analysis integration software NetDraw template can be used to draw the network diagram between different elements. Figure 1 shows the terrorist-task relationship, Figure 2 shows the terrorist-resource relationship, Figure 3 shows the terrorist-skill relationship, and Figure 4 is shows terrorist relationship. From these relational network diagrams, we can visually observe which elements are in an important position.
From these relational network diagrams we can visually discover which elements are important. In order to extract more information from these network diagrams, we measured the above network diagrams by using density and centrality as the measurement indicators. The results are shown in Figure 4 and Figure 5.

As can be seen from Figure 4. The values are not too high, indicating that there is no connection between the terrorist organizations involved in the "3.14" incident. Therefore, we should focus on cracking down on terrorists and should not implement crackdowns on a large scale. In order to combat key organizations in the terrorist organization network, it is necessary to measure the centrality of the relationship network. As can be seen from Figure 5, the top terrorist organization
with the degree of centrality and intermediateity is S04, indicating that its position in the terrorist relationship network is very important. From the actual situation of the incident, this terrorist organization is the main planning organization. We can also get valuable information by analyzing other relational network diagrams in the same way. For example, when the task-task relationship network map is centrally measured, it is found that the centers of E1, E2, E3, E5, E6, and E7 are the same, indicating that the occurrence of these events has a greater impact on the overall investigation.

**Summary**

Based on the theory of social network analysis, this paper studies the "3.14" incident. The multi-relational network model of two events was constructed by UCINET, and some network characteristics were analyzed. The experimental results show that the results of visualization and data analysis are consistent with the actual situation.

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**References**

[1] Zhang Hai, Research on Terrorist Organization Covert Network Based on Social Network Theory, Hunan: National University of Defense Technology, 2010.

[2] Li Gang, Cai Shijie, Zhang Hudan, Research on Knowledge Sharing of Science and Technology Innovation Team Based on Social Network Analysis, Information Science, 12 (2015) 3-7.

[3] Shi Fei, Theoretical Research on Social Network Analysis, People's Liberation Army Journal, Henan: Railway police officer college, 2015.

[4] Li Chong, Research and application of visual representation of social networks, NanJing: Nanjing University of Science and Technology, 2010.

[5] Zheng Zhihao. Application of Social Network Analysis Method in Anti-terrorism, Journal of Chinese People's Public Security University, 3 (2012) 11-12.