Research on Social Security Governance in Big Data Environment

Lei Chen
China People’s Police University Langfang 065000, China
E-mail: chenlei4534@163.com

Abstract: Under the background of big data, social security information has new characteristics such as large data volume, low value density, diverse and complex types. It has become an inevitable trend to effectively integrate social security governance with big data technology. But there are some problems in social security work in China, such as imperfect organizational system, lack of special national social security database, lack of technical personnel with big data. Some measures are put forward, such as integrating social security resources, improving social security technical means, cultivating technical talents with big data thinking, strengthening the participation and cooperation of the public and institutions, improving the social security prevention and control system centered on big data, and further promoting international security cooperation, to promote social security governance.

1. Introduction
Social security mainly refers to security issues that affect social public order and the safety of people's lives and property [1]. Social security incidents mainly include terrorist attacks, mass incidents, economic security incidents and foreign-related emergencies. In recent years, the frequent occurrence of social security incidents has seriously affected the social security and stability and the basic life of the people. In the big data environment, people's activities will inevitably leave various traces. The information of social security incidents is scattered in the network and every corner of social life. It is very important to study and make full use of the advantages of big data technology and to establish and improve social security information mechanism for monitoring and warning social security situation and effective social security governance [2].

2. Social Security Based on Big Data

2.1 Big Data Technology
The concept of “Big data” first appeared in the research report “Big data: The next frontier for innovation, competitiveness and productivity” published by McKinsey Global Research Institute in 2011. In 2012, the company formally defined big data as huge amount of data, including structured, semi-structured and non-structured data [3].

The first important feature of big data is massive data. The amount of data has jumped from TB level to PB or even ZB level. The data is scattered in every corner. The second feature is the diversity of data types. In addition to website data, there are also self-media data such as social networks, blogs, WeChat and microblogs, as well as audio and video data from multiple terminals. Structured, semi-structured and unstructured data are available [4].
2.2 Social Security Based on Big Data
Social security in big data environment requires updating traditional thinking and concepts to achieve effective integration of big data and social security. Under the background of big data, in addition to using traditional information and technical means, it is more necessary to mine clues related to social security events from massive data and analyze multiple data to generate decision-oriented visual results to assist people in making decisions.

In the big data environment, social security information has the following characteristics: (1) Large amount of data and low value density. Under the background of big data, people's various information will leave traces on the Internet, and based on data mining technology, a large number of other data may be extended. However, for such a large amount of data, the valuable information is very limited, and it is necessary to comprehensively utilize various algorithms to remove some useless “noise” data and extract useful information. (2) Various types and complicated structures. Due to various sources, the data structure of information is different. Fusion of these multi-source heterogeneous data is one of the key links in big data analysis and processing. (3) Strong concealment and rapid spread. Under the Internet environment, the contacts between the involved members are more hidden. The popularity of social networking platforms such as Twitter, Facebook, and forums has made it easy for them to publish information. In a short period of time, news can be spread all over the network.

3. Problems Existing in Social Security Governance under Big Data Environment
After years of hard work, great progress has been made in our country's social security governance. On April 15th, 2014, President Xi presided over the first meeting of National Security Commission of the Communist Party of China and delivered an important speech. He comprehensively put forward the overall national security concept, explicitly incorporated social security into the national security system for the first time, and entrusted social security with the important function of “safeguarding” the overall national security. This has greatly promoted the status of social security work and also marked a new historical stage for China's social security governance. However, facing the test of big data, there are still some problems that need to be solved urgently.

3.1 Incomplete Information Organization System
Social security information has its particularity, with a wide range of data sources, scattered information, difficult access, strong timeliness and relatively scattered information. These characteristics all determine the existence of social security information in different units such as the Ministry of Public Security, the Ministry of National Security and the Armed Police. These units have some problems, such as unclear division of responsibilities, overlapping business functions, lack of institutionalized coordination and communication, etc., which bring many problems to the smooth and efficient development of social security work. And because a lot of data are sensitive and secret-related, the concealment and omission of information among various units also happen from time to time. Due to different sources of channels, various departments have different information contents, structures and details. Without a data sharing mechanism, a perfect social security strategy system cannot be formed.

3.2 Incomplete Social Security Database
Real and effective data sources and perfect social security database are the basis for effective social security work. Due to factors such as different sources and limitation of data processing capacity, the data of domestic social security departments are quite different at present. China has not built a special social security database that can be shared nationwide. Now western developed countries have increased their investment, made full use of big data resources and technologies, and improved their social security system. For example, after the “911” incident, the United States reorganized and integrated the original intelligence agencies, invested heavily in building a complete terrorist database, and through the social security information sharing mechanism, realized the function of consulting the personal information and criminal records of most Americans [5].
3.3 Shortage of Talents in Big Data Technology
With the rapid development of network technology, the information of social security incidents is more hidden and scattered, and the forms are more diversified. It is very difficult to increase social security governance [6]. However, due to historical reasons and other reasons, the general cultural quality of social security practitioners in China is not high. Manual data collection is still one of the main methods of social security data collection, with low work efficiency and quality. As a new technology rising in recent years, big data technology requires high information quality of personnel. China's social security governance is facing a serious shortage of big data talents.

3.4 Insufficient social mobilization
Social security governance in our country based on big data environment started late, some infrastructures are not perfect, and the coordination and division of labor among various departments are not perfect. Although some achievements have been made, traditional methods are still the main method, big data thinking has not been formed, and new technologies and methods are not applied adequately. People's vigilance and attention are generally insufficient, and they lack proper discrimination and reporting awareness. This has given the suspects many hidden opportunities and is not easy to be found and hit. Social security departments need to cooperate with banks, communications, transportation and other departments in the stages of investigation and investigation, and need a large amount of information. Due to concerns about information disclosure, affecting business and work safety, some units are not willing to cooperate, affecting the progress of social security governance.

4. Countermeasures for Social Security Governance in Big Data Environments

4.1 Integration of social security resources to achieve data sharing
China’s social security work is mainly carried out by the public security department, assisted by the Ministry of National Security, the Armed Police and other departments. The coordination work of these departments has some problems, such as unclear powers and responsibilities, complicated organization and scheduling, etc. It is necessary to effectively integrate these social security forces and improve work efficiency. The social security information of these departments is different in structure and content due to different sources and different processing methods. However, the information may be valuable in one or several aspects and needs to be integrated. In addition, these business departments have not established a unified social security data platform due to restrictions such as confidentiality system and information security methods. If a special social security information system is established to realize information sharing and simplify work procedures, the efficiency of social security governance will definitely be greatly improved.

4.2 Increase investment in science and technology and upgrade technical means
In the big data environment, due to the popularity of mobile terminals such as convenient networks and smart phones, terrorist activities are becoming more and more covert and flexible, and the effectiveness of traditional social security methods is declining. In the big data environment, many seemingly unrelated information can be mined out through big data analysis, which can provide data support for the prediction, decision-making and effective attack of social security crimes. Machine learning technology can intelligently supervise data, realize automatic and fast completion of data capture, data decryption and data analysis, thus effectively preventing and combating crimes. These information technologies have very high requirements for equipment and personnel. They are developed and updated rapidly and require a large amount of financial investment. In addition, because social security information involves national security, we must increase investment in research and development, produce network equipment and management software with independent intellectual property rights, and promote the localization of various technologies.
4.3 Strengthen Big Data Thinking and Train Technical Talents
The application of big data technology has become the trend of international social security. Social security practitioners need to change traditional working methods, cultivate big data vision and thinking, and master relevant technologies. China's existing personnel are generally not of high quality in this respect, so it is necessary to invite professionals to conduct regular training to improve their professional level. As a booming major in emerging engineering education, Big Data now has a big gap in all walks of life. We should actively introduce innovative talents in related disciplines to enrich the social security team. We should also do a good job in cooperation with domestic first-line information technology enterprises and cultivate high-level part-time talents.

4.4 Strengthen social security publicity and encourage public participation
Social security work is closely related to everyone's life. We should actively publicize social security knowledge and strengthen education, especially for teenagers. Only by strengthening the publicity of social security knowledge, can people's psychological quality and knowledge reserve for dealing with social security incidents be improved. China has the largest number of Internet users in the world. We should play full role of ordinary netizens, provide and report clues to social security departments, and not give hiding places to those involved.

The government should establish a sound social security guidance system to guide the public to establish awareness of prevention and enhance their ability to prevent, evade, save themselves and each other [7]. Secondly, an administrative protection system for public participation in social security governance should be established to reduce public concerns about participation and avoid non-participation due to fear of participation risks [8]. Thirdly, an administrative reward system for public participation should be established to reward participants from the spiritual and material aspects and encourage everyone to participate actively. Finally, it is necessary to report regularly to the public on the progress of their work and the surrounding situation, especially during terrorist incidents, so as not to cause unnecessary panic among the public [9].

4.5 Improve the social security prevention and control system and further promote international cooperation
Internet has now become the main tool for social security suspects to engage in various activities. Relevant government departments should resolutely crack down on criminal crimes committed by using new online media platforms, and earnestly do a good job in the rectification of online security issues. We will continue to crack down on economic crimes that are prone to occur and occur frequently in the region, standardize the market economic order and ensure economic security. Building a social security prevention and control system centered on big data, analyzing all kinds of intelligence, mining relevant information, finding laws suitable for local security prevention and control, and realizing effective early warning [10].

Network has no national boundaries and distance restrictions, and the criminals involved in different countries and regions often collude together to commit crimes across regions and borders. All countries should strictly follow the principles of international law, build a unified international social security framework, and jointly prevent and combat terrorism and other serious criminal and economic crimes. China should actively and effectively promote international cooperation, exchange information, learn from each other in technology, effectively integrate into the global social security cooperation system, and do a good job in social security governance.

Fund Project
Langfang Science and Technology Support Project“Research on Social Security Situation Awareness Technology Based on Big Data” (No:2019013087); Langfang Science and Technology Support Project“Research on Network Rumor Recognition Technology for Big Data” (No:2019013085); National education information technology research topic “Research on virtual simulation war room and teaching practice based on police big data”(No:186140038); Hebei provincial higher education
teaching reform research and practice project “Research on training mode and teaching practice of police big data application specialty under the background of new engineering” (No: 2018GJJG450); Hebei provincial key research and development program project “Research on network anti-terrorism and crisis management mechanism based on social media” (No:18210706).

References

[1] Q. Guo 2016 On Social Security under the New Situation Learning and Exploration 12 pp 53-58
[2] Y.Z. N, P. Zhang, X. Hu and J.Qu 2018 Summarization of the Methods of Information Mining in the Background of Big Data China Public Security. Academy Edition 4 pp 91-95
[3] C.Y. Zhang 2014 Public Security Governance in the Age of Big Data Journal of the National Institute of Administration 5 p 100
[4] S.Z. Chen 2018 Research on Public Security and Risk Management in the Age of Big Data Media Forum 15 p 49
[5] W. Zuo 2006 Reconstruction of American Anti-Terrorist Intelligence Information System after September 11 Incident Journal of Jiangsu Police Academy 2 pp 131-135
[6] S.L. Xiao, X. Chen, Z. Li 2017 Distributed Neural Network Attack Classification for Social Security Events Computer Application 10 pp 2794-2798
[7] J. Sun 2008 On the Political Responsibility of the Government in the Crisis Management of Public Security Journal of People's Public Security University of China (Social Science Edition) 6 pp 97-101
[8] D.X. Li 2014 On the Rational Orientation of Chinese Government's Social Governance Function Social Sciences Review 12 pp 59-65
[9] J.L. Niu, L.M. Yang and Y.X. Hou 2019 An Empirical Analysis of Public Participation Willingness in Social Security Governance Based on Logistic Model Computer and Modernization 4 p97
[10] L.N. Zhou, F. Sun 2018 Social Security Governance Path in the New Media Age Journal of Anhui Radio & TV University 3 pp 1-4