Application and Development of Big Data in Legal Case Investigation

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ABSTRACT
With the rapid development of information technology in recent years, many criminal cases tend to be intelligent and covert, and the traditional investigation mode has been difficult to meet the social management needs of the development of the times [1]. With the continuous development of big data technology, in view of the advantages of big data technology, this paper discusses the application and development of big data in case investigation.

Keywords: big data, technical support, legal protection, network security

1. RESEARCH BACKGROUND

At present, in the traditional investigation mode, on the one hand, there may be errors and omissions in the collection of case information according to the scene, which affects the understanding of the case. For example, Article 53 of the criminal procedure law stipulates that the sentence of all cases should attach importance to evidence, investigation and research, and not credulity of confession. Only the defendant's confession, without other evidence, cannot be found guilty and punished; without the defendant's confession, the evidence is true and sufficient, can be found guilty and punished [2]. First impressions are strongest. The investigators have already taken the suspect as the criminal and took the evidence to confirm it. This has also laid the foreshadowing of many miscarriages of justice [3], like the case of a drug poisoning in Fujian in 2006, lasted 8 years and 10 sessions. The four was sentenced to death and immediately executed [4].

On the other hand, the increase in the amount of criminal activities and the upgrading of criminal means, as well as the improvement of the scientific and technological content, intelligence and concealment of many criminal cases have also brought challenges to the traditional case investigation thinking, methods and coping strategies [5]. In recent years, with the rapid development of big data technology, it provides many solutions to the traditional investigation in the context of big data, which is more suitable for the development of the times and the change of crime forms [6]. Therefore,

the author also takes big data and case investigation as the theme, searches on "CNKI academic resource platform", and understands the academic research status of "big data for case investigation" in China. The statistical results are shown in Figure 1.
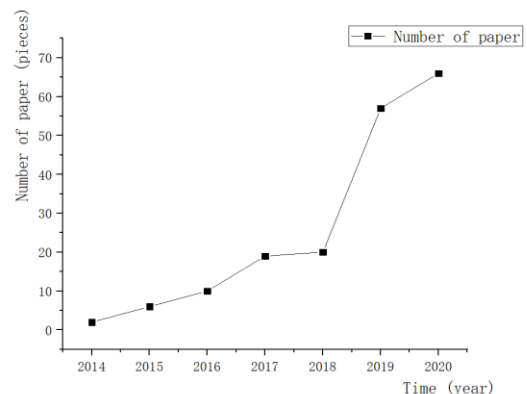

Figure 1 Development trend chart

As can be seen from Figure 1, the literature on big data and case investigation began to rise in 2014, and has maintained a high-speed development trend in recent years. Especially after 2018, it can be predicted that big data will have a great development prospect in the field of case investigation in the future.

2. THE CONCEPT AND ADVANTAGES OF BIG DATA

2.1. Concept of big data

Big data specifically refers to the data set that cannot be captured, managed and processed by conventional software tools in an affordable time range. Of course, big data needs new processing mode to have stronger decision-making power, insight and process optimization power to adapt to massive, high growth rate and diversified information assets [7].

2.2. Advantages of big data in case investigation

2.2.1. Advantages in procuratorial decision making

In China's judicial system, procuratorial decision-making is a common method in case investigation and adjudication. Using big data technology, through the data analysis in the procuratorial business, we can understand the law of criminal cases, and then formulate new solutions according to the results of data analysis [8]. For example, in the field of China's railway transportation, every major festival, the related cases are difficult problems for railway public security and procuratorial work. In recent years, in the period of high incidence of criminal cases, the railway procuratorial organs have carried out centralized rectification of key lines and stations, data integration and analysis, and achieved good results [9].

2.2.2. The advantages in the trial supervision

Due to too much discretion given to judges in China's judicial system, the effect of supervision and review by procuratorial organs on the phenomenon of light punishment in many criminal cases is not very ideal. Using big data technology analysis, we can find many problems that are difficult to find through traditional methods [10]. For example, if the procuratorial

organ studies the information of some criminal cases tried by a court in recent years, it may seem that every single case conforms to the law, but when the procuratorial organ analyzes and compares the rates of postponement and exemption of judgment in these cases with ordinary criminal cases, it can be found that the former is much higher than the latter. Therefore, the procuratorial organ proposed to the court to strictly control the postponement and exemption of judgment in such cases.

2.2.3. The advantages in duty crime and economic crime

In the process of investigation, prosecutors always need to ask the criminal suspect vigorously and collect evidence from the oral confession clues after breaking the confession. Therefore, the traditional way of detection is time-consuming and laborious. With the help of big data, through the comparison and integration of various kinds of information, more clues can be given to the procuratorial organs. For example, through the suspect's registered residence information, financial capital flow information and real estate information, we can also get information about the criminal suspect's behavior, business information and related valuable clues through SMS, telephone, QQ, WeChat and other communication information, and then find the truth of the case faster. For example, in recent years, in the investigation of corruption and bribery cases, the procuratorial organs can transform these data into important information for breakthrough cases.

2.2.4. The advantages in the investigation of telecommunication fraud cases

With the development of information technology, many criminal cases in our country are constantly updated and developed with the Internet. Every year, the number of Telecom fraud cases has been increasing. In recent years, the distribution of Telecom fraud cases in China is shown in Figure 2.
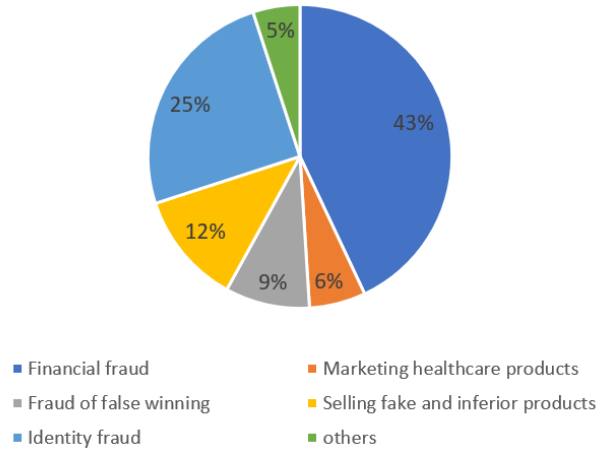
Figure 2 Types of telecommunication fraud cases in China in recent years

If we apply big data technology to the investigation of Telecom fraud cases, through the analysis, tracking and comparison of network information data, it will bring inestimable advantages to China's public security management.

3. RELATED GUARANTEE OF BIG DATA APPLACATION AND DEVELOPMENT

The application and development of big data in case investigation need many aspects of protection, such as the large amount and variety of data involved in case trial, which needs strong technology and network security. At the same time, the application of big data technology in case investigation also needs to improve the corresponding system and legal provisions, so as to make it legal, efficient and orderly. The relationship is shown in Figure 3.
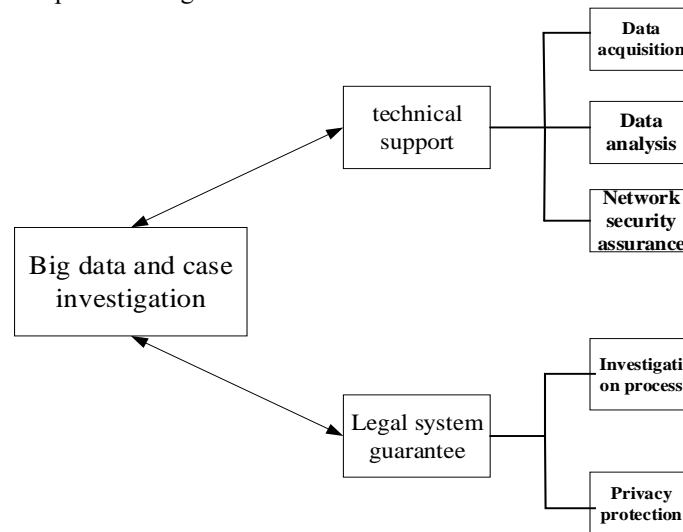

Figure 3 Relationship between big data and related application support

3.1. Technical support

As a new and popular technology, big data technology needs corresponding perfect technical support for data acquisition, processing, analysis and other links. At the same time, the later data management and storage security also need to pay special attention. Only in this way can big data technology better serve case investigation and investigation.

3.2. Legal system guarantee

At present, as the era of data, the flow of data is very large. At the same time, the application of big data in case investigation involves the privacy security of many citizens. Therefore, in order to ensure that big data can better and more reasonably benefit the society, we should quantify the processes and requirements in big data processing, the authority and privacy protection in big data analysis and application, and the later legal rights protection and other related systems [11].

Only when the technology and system are perfect and mature, big data technology will not only enhance the integrity and superiority of China's judicial system, but also bring gospel to citizens and law enforcement personnel.

4. CONCLUSION

As the inevitable trend of the development of the times, big data technology has gained an irreplaceable position in the economic, legal and other social structures. China's national strategy of running the country according to law should conform to the development trend of national big data, and take big data technology as a resource of law and case investigation [12]. At the same time, we should accelerate the improvement of digital infrastructure, promote the integration of data resources and ensure data security, maximize the efficiency of big data investigation, and provide inexhaustible power for the comprehensive rule of law!

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