

Scientific research of early warning under the “Big Data”

A mu-la¹, ZHUANG Guo-bo^{2,3}

¹ School of economics and management, Nanjing University of Aeronautics & Astronautics, majoring in administrative management, China

² School of economics and management, Nanjing University of Aeronautics & Astronautics

³ School of Humanities and Social Sciences, Nanjing University of Posts and Telecommunications, China

*644230190@qq.com

Abstract. With the rapid development of information technology, the informationization tide impact on all aspects of human society. Under the background of big data, reasonable use of the growing data resources, to establish a set of scientific basis for the early warning mechanism, in order to speed up the anti-corruption "upgrade", the most timely and scientific early warning of corruption, is to implement the current anti-corruption "in treating symptoms, to win the time" the path to the root of the problem is to maintain the health of the body of the party and the government inevitable choice.

Keywords: Big data, early warning mechanism of corruption, Scientific anti-corruption, Path exploration

1 Introduction

2016 is the "13th Five-Year" plan of the essay, but also the implementation of the national "Internet plus" year of action plan. Data interoperability is becoming increasingly important today, how to make good use of big data, so that large data real work for anti-corruption work, truly achieve the goal of early warning, not only is the focus of attention of the community, but also the key to the test of decision makers. In the past, the research of big data mainly focuses on the background, concept, characteristics, importance and data mining technology of big data, fully reflects the big data technology oriented research characteristics, lead to people tend to link it with the IT, has not yet touched or less involved in the field of clean government warning applications^[1]. This requires us to fully absorb the results of previous studies, based on the development of large data applications, The big data and government governance and anti-corruption warning decision scheme are combined to through access to vast amounts of data resources to analysis, early warning and control the construction of anti-corruption, so as to promote China's anti-corruption governance capacity, guide the social from all walks of life right of the mainstream value view, so as to "do not want to rot, the fundamental purpose of not rot^[2]".

This paper discusses in the era of big data, how to utilize the growing data resources, the use of big data technology to the early warning work, establish a scientific basis of the early warning mechanism, Make it a new tool in the fight against corruption and corruption.

2 "Big data" in the early warning of the feasibility of a clean government

Using big data technology to carry out a clean government warning is to establish the government governance and anti-corruption warning on the basis of modern information technology, network technology and big data technology, So that the early warning more accurate, more effective anti-corruption. Big data corruption model and the traditional mode of governance of the biggest difference is that he has a virtual, efficient and fast, That is, compared with the traditional anti-corruption mechanism, Big data integrity warning is not restricted by time and space, We provide

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the supervision power to the society and the public, this form of anti-corruption pattern indicates a breakthrough in China's Anti-corruption Governance model, a profound revolution of corruption early warning mechanism^[3].

In recent years, the heated debate of the network is refers to the Internet users through the virtual network technology and data information on the corruption of officials to monitor and report. Use of social groups of public opinion supervision effect caused by the relevant departments of corrupt officials conduct further investigation and punishment. This initiative makes anti-corruption work more effective, more transparent, and thus achieve the effective punishment. But overall, network anti-corruption is limited to punish corruption level, prevention of corruption and immune to corruption by the power of the network media is still a bit thin, not rot, not rot, do not want to rot in the long-term mechanism formation, not only needs the enucleation of the power body evil carbuncle gangrene of fixed-point cleaning in operation, but also need to the prevention and control of body whole system "vaccine", make broad cadre itself against corruption "antibodies, formation of corruption prevention in the immune mechanism^[4]. Large data related theory and technology for China's anti-corruption work is a historic opportunity.

This paper mainly shows in the era of big data, operation and the inner logic of the early warning mechanism of clean government created, put forward a new idea of data integrity warning mechanism, exert oneself to solve our country for administrative personnel of the management and early warning for corruption in a series of contradictions, created to meet the era background, the early warning mechanism of clean government help China to seize the commanding heights in the field of big data corruption warning^[5].

3. The Path design of Integrity warning under the Big data

"The early warning of big data era is to rely on the analysis of multivariate data fusion, is based on" big data processing system based on intelligent early warning. The application logic is through real data collection, mining, the correct analysis and judgment of signs and trends of corruption, in order to grasp the development trend, the establishment of the Independent Commission against early warning system. Early warning system of large scale, data of the whole process, also need data sources of each of the participants, including technical data provider, data integration of personnel, government, supervision mechanism, people. Early warning system is not only able to meet the needs of massive data processing and analysis, but also 24 hours to cover all networks, through the panoramic observation, in a timely manner to find the epidemic of the epidemic, timely warning of corruption^[6].

3.1 Data acquisition;

"Corruption" related data collection and arrangement is the premise and basis of "big data" the early warning work. In the information age, along with the rapid development of networking, the Internet, people's business, study, records of consumption, entertainment and other daily behavior are and network produced inextricably linked, through the collection and collation of citizens personal data, social media data, government activity data, business data, the four data sources, according to the specified criteria for primary screening of independent information system available independent data. Automatic input function for complaints hotline complaints reported to achieve automated entry, and save real-time recording, computer automatic preparation accepted number, to ensure timely and accurate entry.

3.2 Data mining

Through the screened data mining and information detection technology, analysis the commonness of public officials and private behavior and the establishment of correlation, and according to officials of the deposit amount of rapid growth, the level of consumption significantly increased, and the social interaction complex degree of change sign, judge whether there is tendency of corruption of officials, early warning information, lock suspected target.

3.3 Dynamic monitoring of data

Through the dynamic supervision of the locking target, highlight the "eight hours outside" supervision, focusing on supervision of the leisure circle, social circle. Further touch and verification, To restore their lives in all aspects of the trajectory, timely verification of early warning doubts, to find the conclusive evidence of its corruption^[7].

3.4 The construction of the early warning system of the clean government

Through the construction of a clean and honest evaluation index, the case of corrupt officials for classification, classification, establish a clean government warning system. The different levels of the "police intelligence", respectively, corresponding to different preventive measures. When the facts of the case beyond the critical value of early warning indicators, the relevant departments issued a warning, and take effective measures to prevent. Corruption tendentious problems or signs of corruption problem of discovery, warning remind conversation, the minor disciplinary problems timely order correction.

3.5 To strengthen the warning education, improve the immune

Early warning education, to focus on pre supervision and supervision. On the one hand, to strengthen the training of the civil service integrity awareness, focus on education reform, the formation of a strong psychological attack on the luck of the cadres, to create a good administrative environment. On the other hand, to the consummation of the civil service of electronic archives, the deposit Library of public personnel database and the banking sector, Securities Department of the stock information library, the real estate sector of real estate information library network docking and updated in real time. This will greatly increase the deterrent force of corrupt elements.

4. The challenges faced by the early warning mechanism of the clean government

At present, China has a certain hardware foundation in the development and application of large data, with the world's first data size and development potential, but there is still a lack of open government data. Such as large data base is weak, lack of laws and regulations to protect the mechanism and other issues. How to balance the big data applications bring anti-corruption efficiency and potential privacy security risk is an urgent problem to be solved.

4.1 Openness and sharing of government data is not enough

Data disclosure is the most basic data driven and data governance. So far, the Chinese government data is not fully open, the national credit system is not perfect, the open data is not corresponding policy "laws and regulations and, in a certain extent restricts the development in our country the research and application of data, so as to restrict the big data technology application in independent research and Practice^[8]. In the era of big data, data retrieval, collection and processing is a valuable asset for the government, the data collected from the public, and the spread is a bottom-up process. The purpose of publication of government data is not only to accept supervision, but also to stimulate creativity, through data processing to increase the value of data. Such data, only through the data sharing, cross multiplexing, in order to obtain the maximum value of the data. At present, the "big data" generated by the flow of information is facing the resistance of all aspects. On the one hand, when the data is the core of the competition, and invest a lot of manpower, material resources and financial resources to win the priority of data, it is difficult to achieve the sharing of data; On the other hand, the government's data open channel is relatively simple, the pace is slow, the information obtained by the public is still limited. Thus eliminating the need for a digital divide in the hardware facilities and software initiatives on the dual effort, which requires the government, enterprises in the open big data at the same time the need to enhance the quality of all citizens of the data, To achieve the data for the people, for the people to enjoy, to play a real public supervision, the new model of data leading anti-corruption warning.

4.2 The weak of corruption alarm function

Existing mechanism for prevention of corruption alarm, automatic analysis of the combination of artificial experience and report, rarely set scientific system of early warning of judgment system, can

not guarantee the timeliness and accuracy of early warning, corruption cases of diverse and complex information lack of adequate and systematic analysis, the theory of early warning mechanism is difficult in practice play due role. Analysis of data corruption, judged the work should be in-depth application of big data and rigorous logic analysis and scientific mathematical analysis method to achieve from the regularity analysis to trend forecasting method judged the transformation and to achieve the judgments of the functional requirements^[9].

4.3 Huge talent supply gap in "Big data" field

As China entered the era of big data, big data technology has expanded the scope of application, the growing demand for big data talent. China has the world's largest knowledge group, in 2015, the number of Chinese college graduates more than 749 people, including a large number of high-end talent with engineering, science background. But with comprehensive control of mathematics, statistics, machine learning and other aspects of knowledge, but also bear the scarcity of data analysis and data mining complex type of talent. Big data field technology talent shortage has become one of the important reasons to restrict the development of China's big data industry. According to public information, the next 5 to 10 years, China's big data market growth will be more than 30% annual growth rate, the rapid development of science and technology related to the big data related talent gap is becoming more and more^[10].

4.4 Big data" relevant laws and regulations are not perfect

Network data security and personal information security in the era of big data has become an important issue to be concerned about. The existing standard system and the personal information protection mode of our country's criminal law are insufficient.

- Privacy protection for network users

Big data will help to curb the wanton spread of corruption, but also means that the government must track and monitor the behavior of the public and its relationship network. At present, our country does not have special laws and regulations to define privacy, in dealing with the problem is to use other relevant laws and regulations to explain. but with the popularization of information technology, people's privacy awareness has increased, the government must ensure the legislation and practice of big data to keep pace, the data resources to curb the abuse and improper use, for the public to create benign information ecology.

- Network data security

The network data security becomes an important part of national security. In the era of big data, data security threats at any time may occur, a variety of national information infrastructure and important institutions carrying a huge data, such as controlled by the information network system of oil and gas pipeline, commercial and military, are likely to become the attack hit the target. In addition, big data for terrorist networks provides a new resource support, there may allow terrorists through the network intruded into people's work and life, and through threats, attacks, paralysis of military and civil infrastructure means and achieve its manufacturing for the purpose of psychological panic and property loss, a threat to national security and social security^[11].

5. Countermeasures and suggestions

5.1 To establish a "big data" and early warning research center

Traditional media and the Internet is the carrier to collect dynamic data of social groups which produces a huge amount of information every day. But the current data analysis, after all, is limited to the published simple data, and thus it is difficult to further in-depth mining, analysis and refinement. For the anti-corruption department, the establishment of anti-corruption big data research center, clear the scope of the various departments of data sharing and use of the way, relying on the government data sharing platform and vigorously promote the national basic information database, information resources, natural resources and spatial geographic information base and other national infrastructure data resources, as well as the core sector of the information system of cross sectoral, cross regional

sharing. On the premise of strengthening security and privacy protection law, steadily promote the public data resources open. Promote the establishment of data resources of government departments and institutions and other public institutions.

5.2 Strengthen spot checks to verify strength

Due to the matters related to the leading cadres with people from my reporting, often concealed, false, false negative cases have occurred, data authenticity, integrity is compromised. Only through the spot checks to verify serious, efforts to form a complete collection of information, information process, information transmitted rapidly, effective use of information chain, virtuous cycle to ensure that the information, in order to make leading cadres matters reporting system really play a fundamental role in punishing and preventing corruption.

5.3 The introduction of early warning monitoring mechanism

To enhance the early warning ability to predict and correct analysis and judgment and the anti-corruption struggle situation, is the important foundation to increase efforts to prevent corruption, is also the objective requirement of improving anti-corruption warning. In the anti-corruption work into monitoring and early warning mechanism, the original advantage of big data conversion into the advantage of monitoring and early warning, master data sovereignty and objective channels is, a full range dead collected and anti-corruption work related to intelligence, and in-depth analysis of corruption dynamic according to the collected information, the analysis of means and types of corruption. To timely predict trends within a period of time the party the sentiments of the people, so as to anti-corruption education, system prevention, strengthen the management and strengthen supervision, to provide complete and accurate decision ^[12].

5.4 Improve the full coverage of the audit

Full coverage refers to the management, distribution, use of public funds, state-owned assets, state-owned resources departments, units and individuals, should consciously accept the audit, with the audit. This means that some people may not be public officials, some departments are not government departments, but as long as the use of public funds, state-owned assets, state-owned resources, are likely to be audited. Economic responsibility audit has become an important means of supervision of leading cadres. Improve the scientific level of the audit team. The audit department will redouble its efforts to increase the audit supervision, strengthen the construction of the audit team, improve audit methods, and further improve and perfect the coordination mechanism with the relevant departments.

5.5 Sound big data security system, strengthen the legal support

Big data" processing technology is a double-edged sword. On the one hand, it provides technical support for scientific administration, on the other hand, it also has a threat to the network security and the privacy of citizens under the environment of large data. How to weigh big data technology brings the pros and cons of the relationship, referring to the legislative practice of other countries, according to the actual situation of our country and some areas in the privacy vulnerable to violations of the formulated special specification of privacy protection. Therefore, to improve the security system in large data environment, the use of safe and reliable data resources to enhance the implementation of the data network security and privacy of the network to protect the privacy of citizens, improve the network privacy security mechanisms.

The use of big data, is bound to build a full range, multi-level, full coverage of the new pattern of corruption. The use of big data, but also will make the majority of Party members and cadres to actively adapt to the new normal, accustomed to working in a supervised environment, life, so as to be more honest in politics. Countries in the view of data integrity warning path is a gradual long-term practice process, as long as in different areas of public affairs make distinctive unremitting efforts, reform of science of Chinese national governance system of corruption will achieve.

Reference

- [1] Yang Yue-Hui. A new era of big data characteristics of Network Anti-corruption N. Learning times], 2011-11-05
- [2] Liao Xiao Ming, Yong Ping, Luo Wenjian. Based on large data corruption prevention: methods, framework and challenge [a]. Tenth (2015) Chinese Academy of management will proceedings [C]. 2015
- [3] Liu Xiaoqin. Big data and clean government system innovation [J]. China administration. 2015 (12)
- [4] Liu Xiaoqin, the anti-corrosion system of Zhuang waves. "Vaccine": Official property monitoring system [J]. leadership science. 2016 (02)
- [5] Han Jing. Study on the application of the electronic administrative supervision mechanism in the construction of a clean government [D]. Shanghai Normal University, 2015
- [6] Wang Haolei, Ding Fang. Policy thinking for integration of data resources utilization in China big data technology [J]. Chinese Economic Herald, 2015 (28).
- [7] cable promising. Guangdong first introduced the opinion of the regulatory officials "eight hours outside" activities [J]. government legal system, 2015 (25): 28-28.
- [8] Liu Xiaoqin. Big data and clean government system innovation [J]. China administration. 2015 (12)
- [9] Li Hongjuan. Analysis on the management and application of population information in the era of big data [J]. modern management science, 2014 (10): 111-113.
Chen Guilong [10]. Nine three: to strengthen the Central Institute of big data talent team construction [J]. China construction information, 2015 (7): 21-21.
- [11] Xu Ye. The era of big data China challenges and Countermeasures [J]. China Technology Forum. 2015 (03)
- [12] Huang Huang, Xu Daoshun, Liu Fang. Discussion on the establishment of the grass-roots level of the central bank against the early warning monitoring mechanism [J]. Hainan finance. 2010 (10)