The Exploring on the Supervision of University Public Opinion in the Background of Big Data

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Abstract. College public opinion are a reflection of the ideological status of college students and the degree of campus stability. The high frequency and suddenness of public opinion events and the speed and virtuality of the information age have brought new opportunities and challenges to public opinion supervision and public opinion intervention. In the new era, the supervision of network public opinion in colleges and universities should conform to the characteristics of the era of big data, use advanced information technology to improve the efficiency of supervision, and strive to achieve the goal of scientific decision-making management. Based on the major colleges and universities, this paper aims to explore the improvement program of college public opinion supervision under the background of big data. It uses literature review method, research method and experimental method to analyse. This paper analyzed the current situation of network public opinion supervision in colleges, summed up the problems existing in the network of colleges, and constructed a network public opinion supervision platform for colleges under the background of big data.

1. Introduction

With the rapid development of Internet technology, the important role of the Internet in economic and social development has become more prominent. According to statistics from China Internet Network Information Center (CNNIC), as of June 2019, China's Internet penetration rate reached 61.2%, and the number of Internet users reached 854 million, of which the proportion of Internet users aged 20-29 was the highest, accounting for 24.6%. College students are one of the main groups of network voices. However, college students' ability to judge and identify information is weak, which often leads to a series of college public opinion incidents, which causes hidden dangers in college management [1].

Internet public opinion refers to the occurrence, development and change of intermediary social events through a network within a certain social space, the social and political attitudes, beliefs and values that the public generates and holds on public issues and social managers, and the emotions expressed, the intersection and integration of opinions, opinions, attitudes and demands. The network public opinion of colleges and universities is mainly reflected in the concentrated discussion of different groups within the university in the social space of the network on campus public affairs, social hotspots, focus issues or certain emergencies [2].

The network public opinion of colleges and universities has the characteristics of strong sensation, strong identity, multiple opinions, random speech, certain violent and false, and Coping mechanism
lag. These characteristics mean that it is unwise to rely on simple and rude containment and suppression to prevent the fermentation of college public opinion events. Therefore, the analysis of university network public opinion supervision mechanism under the background of big data is one of the important topics facing colleges and universities in China.

2. Problems in the supervision of public opinion in colleges

Through the investigation, we found that the following problems exist in the supervision of college public opinion:

2.1. The existing public opinion monitoring mechanism is not time-sensitive

Because the response mechanism of public opinion events is relatively lagging behind, traditional regulatory methods are difficult to solve public opinion events before fermentation. With the passage of time, the diffusion space tends to grow uncontrollably, and the amount of data that needs to be processed also rises rapidly. As a result, subsequent public opinion intervention requires more human and material resources, and the negative impact on colleges and universities is getting bigger and bigger.

2.2. The existing public opinion monitoring mechanism is Incomplete analysis for data.

2.2.1. It is difficult to filter massive public opinion data. The information explosion caused by the diversity of modern media and real-time network information brings many inconveniences to the information management of university network opinion managers. It is difficult to realize the value of information by mechanized processing alone, and it takes a lot of labor to analyze massive data by manual. Manpower time, and the effect is not good.

2.2.2. The structure of public opinion data is intricate and difficult to analyze. The values of a large number of network public opinion information are intricate and difficult to distinguish. How to collect and analyze these massive network public opinion information, and find the rules and trends of network public opinion on this basis, and form severe challenges for management departments [3]. It is difficult for management departments to find out the most fundamental source of public opinion, leading to deviations in the control of public opinion, not focusing on strength to deal with the core of public opinion.

2.3. Existing public opinion interventions have not made scientific decisions.

2.3.1. The data utilization density is low. When colleges deal with public opinion information, the data utilization rate is low. There is no deep processing of data, and there are widespread data islands and data archiving scope confusion.

2.3.2. It is lack of quantitative analysis. At present, the information analysis of online public opinion events in colleges and universities is mostly qualitative analysis. The classification of public opinion information is carried out, and then the public opinion events are analyzed and processed. However, it is difficult for qualitative analysis to discover the law of the development of the event through public opinion phenomena. Without accurate analysis and processing through scientific data models and other methods, empirical decision-making is prevalent when conducting public opinion interventions.

3. Construction of University Public Opinion Regulatory Platform

In today's era, data-driven management innovation and data-driven management change have become an unchangeable trend. Big data technology can provide new ideas and technical support for the problems of data volume explosion, low data utilization, poor data consistency, storage decentralization, high maintenance cost, etc., changing the traditional decision-making method relying on experience, and comprehensively optimizing management resource allocation.

The data is divided into three levels. The basic data layer is mainly used for unified access of public data of the system, such as student identity data, public opinion information, etc. The business
support data layer is mainly used to satisfy the data set of each subsystem to conduct business demand, 
providing a combination of data items that may be required by each business; decision management is 
a platform that truly serves “data-driven decision making” and contains a large number of information 
for management personnel, demand-driven, and assists in scientific decision-making. Through the data 
integration of these three dimensions, the collaborative relationship between various departments is 
enhanced, unified and standardized data is obtained, and the foundation of the network public opinion 
monitoring platform of the university is established.

3.1. Public opinion data collection

Public opinion data collection is the first link in the network public opinion monitoring application 
of colleges. The comprehensiveness and efficiency of the collected web page information will have a 
crucial impact on the performance of the entire public opinion monitoring system [4].

3.1.1. Directional web crawler. Because the public opinion information of colleges is highly targeted, 
it is not necessary to collect all the web pages, but the related webpage information is captured 
according to the theme. Therefore, the system's public opinion information collection module uses a 
focused web crawler technology. The workflow of the focused web crawler is as follows:

By using the focused web crawler algorithm such as Fish-Search and Shark-Search, the theme 
relevance judgment module is added to analyze the webpage, and accurately extract the key 
information such as URL, title, body, source, and release time, and segment the word and finally 
compare it with the preset theme to determine whether the page has certain similarities with the theme.
3.1.2. Universal web crawler. There is a difference in the format of each website page. When extracting webpage information, it is necessary to analyze the structure of the webpage first, and then write different module programs according to different websites. Therefore, in order to better parse and extract the information on the web page and filter out the useless and error information, we usually use the HTML Parser open source software to complete. HTML Parser is an html parsing library, mainly used to transform and extract html information. HTML Parser divides the whole information processing process into three parts: page loading, page judgment and information extraction. The web page is subdivided into Text, Remark and Tag, which can process network or file stream information as well as plain text.

3.2. Public opinion data processing and analysis

Data processing is the storage, retrieval, processing, transformation and transmission of data. Before data processing, noise processing should be performed on the collected data to filter out valuable data and improve data quality. Then through various management data file system and database system to establish different connections, data content analysis, word segmentation, classification clustering, hotspot analysis, negative information identification, etc, to meet the data base needs of different jobs, the data conversion into information.

![University network public opinion data foundation.](image)

Since the network public opinion supervision needs to implement a real-time monitoring platform, the data analysis framework adopted should also be oriented to real-time analysis. Build a distributed, fault-tolerant real-time computing system, using the Storm framework for real-time analysis, for "stream processing", processing messages in real time and updating the database, and allocating cluster resources through the Storm framework for calculation. The Storm framework's fault-tolerant, fast, and reliable message processing is very good at ensuring the efficiency and stability of processing public opinion information.

3.3. Building a public opinion information management web platform

By setting up a public opinion information management Web platform, it can realize the public opinion information management operation including basic functions such as viewing and editing, and improve the automation and intelligence of the public opinion supervision model through regression analysis, time series, text mining, and assist management decision-making functions such as public opinion warning and public opinion intervention. Through a series of visualization tools, the functions of public opinion information statistics and visualization processing are realized, and the network information table of colleges and universities is generated, and the network public opinion assessment of colleges and universities is carried out.
4. Conclusion

This paper collects and integrates the problems commonly found in the network public opinion of college students at this stage, deeply analyzes the causes of the problems, combines the relevant work experience of major universities, and the investigation and understanding of related work at home and abroad. This paper put forward the big data-based solutions, built a "big data network public opinion supervision platform", establish a big data decision-making model, use big data for scientific decision-making, ensure that network public opinion supervision work is timely, effective, scientific, firmly grasp the campus network management and The initiative of education, purifying the campus network, provides theoretical and practical guidance for solving the problems in the network public opinion of colleges and universities.

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