Public Relations Management Suggestions for Colleges and Universities to Deal with the Pandemic Crisis from the Perspective of New Media—Taking Jilin Agricultural Science and Technology College as an Example

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Abstract: This article takes the pandemic outbreak in Jilin Agricultural Science and Technology College in March 2022 as a case. From March 4 to March 12, 2022, all Weibo and comment texts on the Weibo platform with the keyword "Jilin Agricultural Science and Technology College Pandemic" as the keyword were crawled through web crawler technology. And take 2623 blog posts and 10669 comments crawled out as research data, extract topics based on word frequency statistics and the LDA topic model method. From the textual analysis, it is found that the focus of network public opinion on the pandemic in colleges and universities mainly focuses on "student life", "pandemic control", and "media information". Combined with the focus on public concern, the author puts forward suggestions on the public relations management of colleges and universities in response to the pandemic crisis.

1. Introduction

On March 6, 2022, the first confirmed case of pandemic appeared in Jilin Agricultural Science and Technology College, followed by a clustered outbreak. In the four days from March 6 to March 10, the university reported 68 pandemic infections, and some students were diagnosed during the on-campus quarantine. On March 10, a Weibo user posted a request for help, saying he was a Jilin Agricultural Science and Technology College student. He is facing difficulties such as a serious shortage of daily necessities and pandemic prevention materials during the school lockdown and isolation. The public crisis in colleges and universities has a high degree of attention and affects people's hearts. In this incident, due to the lack of crisis management in this college, the safety and health of the students in the school were threatened, and it quickly became the focus of public attention in a short period of time, and it became a hot search on the Weibo platform. This has caused huge pressure on public opinion on the school's follow-up handling of the public crisis and has damaged the school's reputation and image to a certain extent.

This study is based on this event, using the text analysis method to study the focus of public attention in crisis events. This way, it discusses how to effectively crisis public relations management during the pandemic crisis in higher education.

2. Literature Review

In the era of rapid development of social media, the media for people to obtain and share information gradually shift from traditional media to social media. Given the openness, interactivity, and accessibility of social media, social media has become an important channel for finding, sharing, and creating crisis information during a crisis (Zhang, Nekmat, & Chen, 2020), which breaks the boundaries of traditional media in time and space device (Libaert, 2015). The role of social media in crises is not just to transmit information. Gonzales-Herrero, & Smith (2008) argue that social media can accelerate crises (for example, a crisis that occurs offline may be exacerbated by social media dissemination), or even create crises (e.g. a tweet can trigger a crisis). In China, Weibo is the most representative social media with a large number of active users. Although it is convenient to publish

information through social media such as Weibo, the lack of universal recognition of the authenticity of information can easily become a breeding ground for rumors to breed and spread (Tan Xin, 2014). According to the research group of media colleges serving society model (2020), in the research on pandemic in colleges and universities, it is proposed that the public becomes the communicator of irrational information and emotions during crisis events [1]. This is a new challenge for universities in crisis. The handling of crisis events in colleges and universities is related to how they can survive the crisis smoothly, and it is also related to maintaining the college's reputation and prestige. Bu Yongan (2018) believes that schools should use social media to transmit information and guide the direction of public opinion development, to reshape the image of colleges and universities in the aftermath of the crisis. From the perspective of new media, Jiang Lin (2015) suggested that colleges and universities fully understand the characteristics of new media and use it scientifically so that new media can play a greater role in crisis public relations management in colleges and universities[2].

So far, Chinese scholars have done little research on colleges and universities' response to pandemic crisis management, and their perspectives lack innovation. The Research Group on Serving Society in Media Colleges (2020) proposes that media colleges use the advantages of media to improve irrational panic in a crisis. From the counselors' perspective, Wang Jing (2020) suggested that emergency warning, communication and coordination, psychological counseling, and value guidance should be done well. The existing flaw is that few people have studied colleges and universities' management and public relations strategies in response to the pandemic crisis and how colleges and universities can further restore their image and resume normal teaching activities.

3. Research Methods

3.1 Sample Grasp

This study uses user blog posts and comments on the Weibo platform as research samples and uses web crawler tools to retrieve Weibo's original texts and comments with the keyword "Jilin Agricultural Science and Technology College Pandemic" during the outbreak of the school and crawled together. Crawl a total of 2623 blog posts and 10669 comments [3].

3.2 Word Frequency Analysis

Word frequency analysis refers to the identification and frequency statistics of keywords and subject words appearing in the text. At present, this method is widely used in psychology, communication, and other fields. Many scholars conduct word frequency analysis on the text, sort the subject words according to the order from high to low, and analyze and predict the hidden key points and development trends in the text according to the sorting. Rajput, Grover, & Rathi (2020)，Asare, Truong, & Sarpong (2021). During the pandemic, through word frequency analysis of Twitter information, the patterns and trends of people's use of words were described, and the psychology and opinions of users were analyzed. Word frequency analysis has also been used to interpret public opinion and public opinion (Huang Dong, 2015). In this study, word frequency statistics will be performed on the captured research samples after removing stop words, and public opinion focus analysis will be carried out in combination with the word frequency statistics results, and a word cloud tool will be used to create a visual word cloud map to present the results more intuitively [4].

3.3 LDA Topic Model

The LDA topic model was a three-layer Bayesian probability model proposed by David M. Blei, Andrew Y. Ng, Michael I. Jordan, etc., in 2003. It can analyze the text features with high representation and high computational value (Luo, 2018) and give the topic of the text in the form of a probability distribution, thereby generating the most suitable document topic [5]. In the process of building the topic model, this study uses jieba word segmentation as the text segmentation component and uses perplexity and consistency calculations to evaluate the model. After much debugging, this research retrieves the optimal topic model from a large amount of Weibo text data and summarizes the implicit topics according to the topic words.

4. Research Finding

4.1 Frequency Statistics Results

In this study, Sina Weibo is selected as a source of data [6]. By excavating the online public opinion during the pandemic occurrence of Jilin Agricultural Science and Technology, public opinion has understood the hotspot of public opinion on the crisis of colleges and universities. A total of 2623 blog posts and 10669 comments were collected and missing, duplicated, and irrelevant data was removed. To accurately understand the public concerns represented by Weibo text data, the suspension words such as "pandemic", "Jilin" "Jilin Agricultural Science and Technology Institute" us "and" them "and other meaningful or hidden characters.

Finally, the first 30 vocabularies are arranged from high to low. The statistical results of word frequency are shown in Table 1

Table 1 The statistical results of word frequency

word	count	word	count	word	count
Student	4026	Attention	696	Life	477
School	3275	Infestor	667	Eliminate	467
Quarantine	1547	Schoolmate	663	Gather	464
Transfer	1301	Teacher	605	Campus	464
Diagnosis	1262	Leader	591	Spread	443
Close exposure	1031	Cheer	585	Serious	441
Child	841	News	562	Hospital	433
Panic	823	Job	507	Pandemic prevention	425
Prevent and control	802	Asymptomatic	492	Don't want	424
Positive	750	College student	488	Fear	411

Based on the frequency of words used in the discussion of the pandemic on Weibo, Jilin Agricultural University of Agricultural Science and Technology refers to colleges and universities as the background for discussing "students" and "schools" [7]. It can be noted that "student" classmates ", "children ", " college students "and other words related directly or indirectly to students are prominent in the text in general. In addition to being the subject of public concern, the vocabulary with a high frequency also includes words such as "transfer" cases "" to diagnose "" isolated "" infected "" hospitals "and other terms closely related to pandemic prevention. During the period when the pandemic occurred, Volkswagen paid close attention to how to effectively control the development of the pandemic and the health and safety of related personnel. In addition, we also noticed that the term "leadership" and "teacher" and other terms on behalf of campus management and teachers have a high frequency [8]. Combined with the semantic background of this vocabulary, it can be seen that netizens are looking forward to the management of management and authoritative personnel in colleges and universities that can take effective action to control the development of the pandemic, and some voices are dissatisfied with such managers.

4.2 LDA Theme Model Results and Analysis

4.2.1 Theme Model Analys*IS*

In this study, Jieba segmentation is selected as text poly components, and choose perplexity and coherence calculations to evaluate the model. The puzzle perplexity formula is as follows:

$$\text{perplexity} = e^{-\frac{\sum \log(p(w))}{N}}$$

Among them, p (w) refers to the probability of each word concentrated in the test. Specific to the LDA model is p (w) = ∑z p (z | d)*p (w | z), (Z, D refers to the trained themes and each document of the test set). Denominator N is all words that appear in the test concentration, or the total length of the test set, without exclusion. Combining perplexity and coherence analysis (as shown in Figure 1

and Figure 2), when the number of themes is 3-4, the confusion is the lowest, and the consistency score of the four topics is high [9]. Finally, the best topic number is 4.
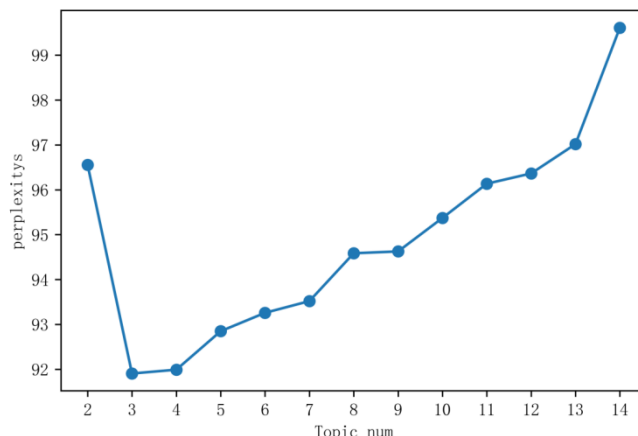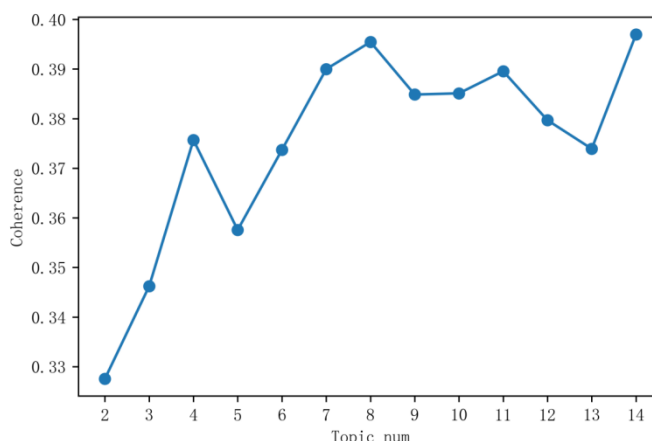

Figure 1 Perplexity Analysis

Figure 2 Coherence Analysis

4.2.2 Theme Excavation

Combined with the theme calculation results and the original Weibo text content analysis, the summary of the topic keywords and themes of topics is now summarized as shown in Table 2.

Table 2 The proportion of topic keywords and the summary of subject words

Num Topics	Topic Clustering	Subject Term
1	"Emotional expression"(35.4%)	Panic, Sorrowful, Pandemic Prevention, Children, Vaccine, State, Hug
2	"Media focus"(16.9%)	Follow, serious, hot search, teacher, comment, media, heat
3	"Prevention and Control" (36.5%)	Isolation, prevention, control, transfer, work, elimination, teacher, leader
4	"Internet users' behavior" (11.2%)	Cheer, leadership, anger, panic, government, abroad, peace

An in-depth analysis of the LDA model found that theme one can be summarized as "emotional expression", accounting for 35.4%. The data can be visualized below, as shown in Figure 3, after removing keywords of four themes, including "student", "school", and "isolation", it can be found that in theme one, the words "panic", "fear", "college student", and "sequelae" are frequently mentioned. This reflects that in the context of the pandemic of college, a panic mood spreads in public opinion. Some of them are students, and some are ordinary netizens. They express the panic of the

pandemic and the fear of the sequelae of the pandemic. These kinds of emotions have been transmitted and affected by the communication between groups on the media platform. Vocabulary such as "classmates", "hug", and "child" also shows the concerns and empathy of students in the deep pandemic. Such emotions have been transmitted and affected through communication between groups on the media platform. Vocabulary such as "classmates", "hug" and "children" also shows the concerns and consent of students in the deep pandemic [10].
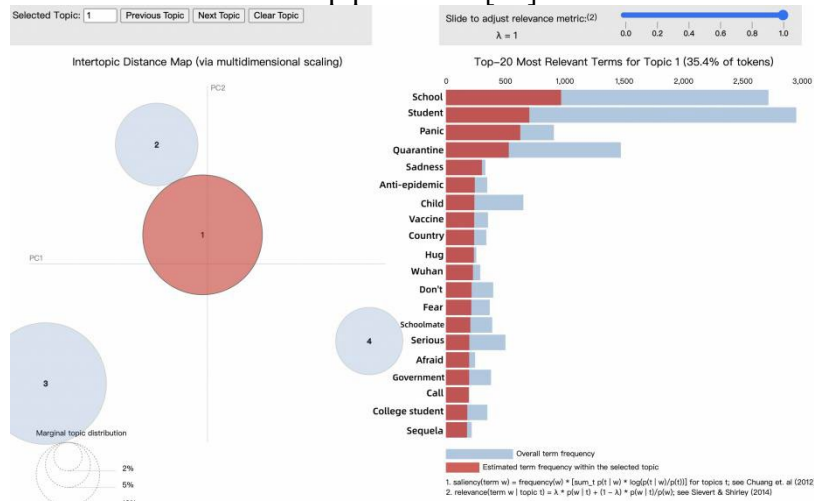

Figure 3 Visualisation of Topic 1

In addition, theme three can be summarized as "prevention and control", accounting for 36.5%. As shown in Figure 4, after removing keywords such as "student", "school", and "isolation" such as other themes, you can see "prevention and control", "transfer", "disinfect", "work" and other high - frequency targeting pandemic Management and control measures are the focus of public attention, At the same time, netizens have attracted additional attention to "leadership" and "teacher". Volkswagen cares whether the school's management is different and whether there is timely and effective action in dealing with emergencies.
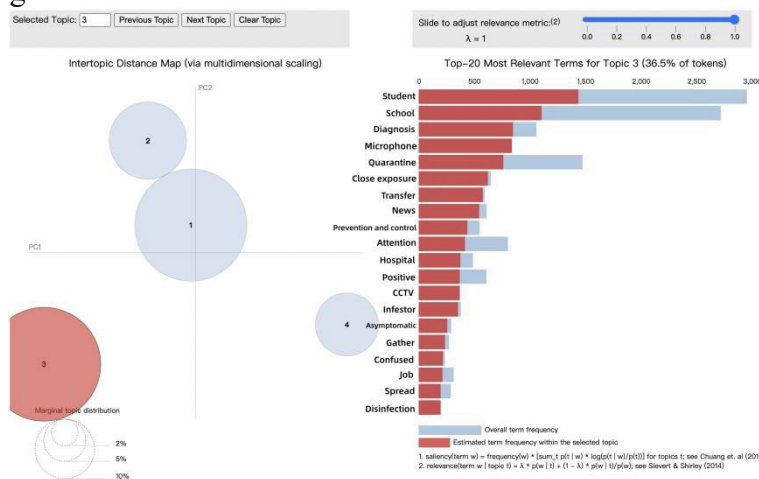

Figure 4 Visualisation of Topic 3

In addition, theme two can be summarized as "media attention" accounting for 16.9%. It is noted that words such as "Hot Search", "Media", "Comment", and "Hot" are the themes under this topic. These types of words reflect the great attention of netizens for the development process of the incident, and due to the beginning of the school in the early days of the outbreak of the pandemic, the information dissemination was not timely. It has stimulated the strong demand for media reports and has produced a spontaneous improvement in incident heat. Theme four can be summarized as "Internet users' behavior", accounting for 11.2%. Under this theme, it shows that netizens cheer for the diagnosis of the sick and also cheer for schools in the pandemic [11].

5. Discussion

5.1 Key Findings

This study uses word frequency statistics and the LDA modeling method to analyze the text of Weibo data. Based on the results of the data analysis, we summarized the focus of internet users' attention on the university pandemic crisis events. Judging from the results of frequency statistics, the focus of attention of netizens in this university's pandemic crisis can be divided into three categories: students, pandemic control measures, and management behaviors. Students are the main object of attention in this crisis. Netizens are concerned about the health and safety of all students in the incident and pay attention to students' living security during the pandemic and subsequent campus life. In addition, netizens are also paying attention to the positive and effective control measures taken by the school in the process of facing the pandemic and subsequent disinfection and management measures. It is worth mentioning that in the crisis of universities, managers are another highly concerned group in addition to the group of students. Netizens are very concerned about management's reactions and actions, whether college and university managers and teachers have been extensively discussed in response to the pandemic. In addition, in the LDA theme analysis, the theme of "media attention" reflects another focus of the public from the perspective of the media. Due to the inadequate transmission of information in the early stage of the pandemic, much public paid close attention to media reports and official notifications during this crisis, which reflects netizens' strong need for real and efficient information acquisition.

5.2 Suggestions for Colleges and Universities to Deal with the Pandemic Crisis

Based on the analysis of the Weibo text of the pandemic crisis case of Jilin College of Agricultural Science and Technology. Combining the word frequency analysis and the conclusion of the LDA model analysis, this paper attempts to make suggestions on the public relations management of universities in response to the pandemic crisis.

First, the students are the core. Schools are where a large number of students study and live. When a crisis occurs in a school, it often draws widespread attention from the community and quickly stirs up public concern and empathy for the students. When the crisis of pandemic comes, the same is true.

Second, ensuring students' health and living guarantees are the first things to do during the pandemic. This requires that the school can put students' interests first, understand the environment of the students, and the help that the students need, when necessary, can provide students with psychological support to relieve the panic caused by the crisis.

Third, scientific pandemic control measures. The school has gathered many students and employees, and controlling the development of the pandemic is the main task of colleges and universities in the face of the pandemic crisis. This requires the school to have sufficient understanding and rigorous judgment on the development trend of the pandemic, follow scientific control methods, and avoid upgrading the pandemic due to blind or invalid measures.

Fourth, managers improve their ability to respond to the crisis. The public is concerned about the decisions and behaviors of university managers in front of the crisis, because managers often affect the development trend of a crisis. Universities should strengthen the learning and training of managers at all levels, improve the ability to respond to crises, and make a plan to deal with crises.

Fifth, information conveying. After the college crisis occurs, it will quickly attract society's attention and generate a lot of public opinion. As a source of information, colleges and universities should pay attention to external information transmission. Information distortion or delay may cause public dissatisfaction and the upgrade of crisis, bringing a bad reputation to colleges and universities.

Sixth, it is recommended that colleges and universities attach importance to the establishment of self-media channels and the operation of mass media. Passing real information promptly and effectively during a crisis is also a positive signal to the public.

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