

Research Article

Chinese Universities' Image Repair after Network Public Opinion Events: Strategy Choice and Effect Evaluation

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The study aims to address Chinese universities' image repair strategies after network public opinion events in the field of crisis management; therefore, it takes 43 network public opinion events in Chinese universities as the research object, encodes the official texts issued by universities according to the image restoration strategy, and sums up the image repair strategies commonly used by Chinese universities. Then, natural language processing is used to conduct the sentiment analysis of the online comments obtained. Accordingly, the sentiment index is constructed to evaluate the effect of Chinese universities' image repair strategies. We find that Chinese universities commonly use the image repair strategy combination of bolstering, provocation, and corrective action; they have not used the apology strategy commonly used in western discourse systems. We also find that the complete information release process has a better image repair effect, particularly in teachers' lapse and personal safety events. The sentiment index in teachers' lapse events is the highest and is related to the universities' corrective actions. The sentiment index in different public opinion hot events is quite different, which may be related to the nature of specific events. In personal safety events, netizens are more satisfied with image repair strategies.

1. Introduction

In the new development period, Chinese universities shoulder the responsibility of personnel training, scientific research, social service, cultural inheritance, and innovation. University's image is the overall impression and evaluation of a university's internal quality and external performance in the public's eyes. Like enterprises, universities pay more and more attention to their image design and brand construction [1]. They shape their image by continuously improving academic, educational, and scientific research qualities [2] and teachers' quality [3]. Moreover, a good university image enhances students' loyalty and satisfaction [4] and affects alumni's sense of identity [5]. Therefore, under the background of deepening the reform and development of China's higher education, a good image has become an essential intangible resource for the survival and development of

Chinese universities, which helps to enhance their core competitiveness.

In recent years, academic misconduct, teachers' lapse, students' unnatural death, and other emergencies frequently occurred in universities. Under the network background, the negative news of universities reported by the media and the network public opinion generated from social platforms further amplify the harm of emergencies in universities. The negative comments would seriously damage the image of universities and thus would affect the application for admission of the universities involved and their training effect and their long-term development [6]. Furthermore, with the popularity of smartphones and the development of the network, social media has become an essential channel for netizens to obtain news and a part of many people's daily life [7]. In China, social media such as Weibo and WeChat have become the source of network public opinion, influencing

network public opinion and resolving public opinion crises. Therefore, when facing crises, scandals or emergencies, universities will choose effective social media communication strategies and take the initiative to speak out via social media, thus maintaining their reputation and image [8].

At present, the research on university image repair mainly focuses on English-speaking countries. These studies are based on crisis communication strategies (CCSs) and the image repair theory proposed by Coombs [9–12], Benoit [13–16], and other scholars. They examine how a crisis is appropriately resolved through effective language and behaviour. In terms of the research object, the previous studies focus on how universities use crisis communication and image repair strategies to eliminate the adverse effects of scandals such as sexual assault, corruption, and academic affairs in some famous western universities (e.g., [17–19]). However, the research object is relatively not diversified and the research conclusion based on the cultural background of western crisis communication lacks a case test from the Chinese cultural background. In terms of research methods, most of the studies are case studies of a specific university (e.g., [17, 18, 20]). They collect the texts published by the universities on social platforms and netizens' comments to measure the public's response to the university image repair strategy. Nevertheless, there is a lack of discussion on the general tendency of the image repair strategy selection in various event types, and the research conclusions are not universally applicable.

Therefore, this study selects 43 network public opinion events that occurred in Chinese universities from 2019 to 2021, that had a great impact on the network platforms, involving academic misconduct, teachers' lapse, public opinion hot topics, campus safety, and other events. By analysing the official texts issued by Chinese universities, this study attempts to sum up the image repair strategies commonly used by Chinese universities. At the same time, through the sentiment analysis of the online comments obtained by the web crawler and the sentiment index, this study measures netizens' responses to evaluate the effect of the universities' image repair strategies.

2. Literature Review

2.1. Crisis Management and Network Public Opinions on Universities. Generally speaking, China and the West differ in their research studies on public opinion events in universities. Western scholars often use terms such as “scandal events” and “crisis events” to refer to network public opinion events. Therefore, when studying the governance of public opinion in universities, they mainly focus on “crisis management” after the “crisis event.” There are studies on universities' coping with external risks, such as earthquake risk [21] and university risk management mechanisms [22], as well as internal risks, such as sexual assault and corruption scandals [6, 17, 19], and the crisis of racism in higher education institutions [23, 24]. These studies adopt the case study method and analyse a specific event in an university and its countermeasures. Previous studies have confirmed

that it is very difficult to rebuild broken trust in educational institutions [25].

Chinese scholars put forward the term “network public opinions,” which refers to media's or netizens' influential and tendentious opinions or comments published online about a particular focus issue, public social affairs, and so on [26]. With the popularization of smartphones and mobile Internet technology, some offline events will likely trigger large-scale network public opinions and a public opinion crisis. The outbreak of a public opinion crisis results from the comprehensive action of endogenous factors such as the destructive power, publicity, and social sensitivity of issues and events, and exogenous factors such as media driving force and government regulation [27]. Therefore, generally speaking, the network public opinion crises almost all go through the process of “offline events-online public opinions-public opinion crisis.” In this process, the offline focus event, the online dissemination of the event, and the public opinion coping strategies will all affect the development and solution of the public opinion crisis.

University network public opinions are the network public opinions on universities. This term was initially proposed by Chinese scholars who conducted relevant studies on the unique cultural background of China (e.g., [28, 29]). Due to the highly developed Internet features, the network of public opinions on Chinese universities is characterized by social media disclosure, accelerated dissemination speed, diversified disseminators, and diversified dissemination methods [30]. At present, Chinese scholars mainly focus on the causes (e.g., [31]), dissemination mechanism (e.g., [32]), problems, and counter-measures (e.g., [33]) of the network's public opinions on universities. Therefore, be it “crisis management” or “public opinion governance” in universities, its fundamental purpose is the same, which is to establish a good image and restore a good reputation.

2.2. Social Media as a Tool for Image Repair and Crisis Management. In the Internet age, social media has become an essential tool for crisis management and image repair. Scholars collect the press releases, posts, and related comments of a particular case published on social media, use the content analysis method to analyse the topics involved in the case, the image repair strategies, and the public's cognition and sentiment, to measure the public's response to the case and the evaluation of the image repair strategies [18, 20, 34, 35]. Compared with traditional media such as online newspapers, the most significant advantage of using social media for image repair and crisis management is obtaining a higher reputation and less secondary crisis response [36]. It is found that at present, it is mainly organizations or public figures who post information on YouTube, Facebook, or Twitter to clarify the truth or to publicly apologize after a crisis [37, 38]. The effective use of image repair strategies can reduce the severity of the incident [8], which is highly beneficial to the image repair of organizations or individuals. However, when European and American universities use social media for image repair and

crisis management, they also need to pay attention to the crisis response from fan groups on social media such as Twitter or Facebook. This is often mentioned in the research on European and American universities' sports crisis management. Previous studies found that fans not only publicly support and defend their players and teams after a crisis, but also take the initiative to repair their players' and teams' image thus relieving the enormous pressure caused by players' violations by externalizing responsibility to other institutions, adopting certain image repair strategies on behalf of the team, and other ways [39–41].

In China, social media is an essential channel for netizens to obtain news and information. Weibo is one of the most well-known social media in China. Its hot search function serves as a weather vane for public opinions to a certain extent, reflecting the hot topics and issues of public concern in Chinese society. When public emergencies occur, Weibo changes from a simple social platform to a source of network public opinions. Thus, it may influence the network's public opinions on public emergencies and can channel negative sentiments. For example, Weibo is widely used in enterprises' for resolving brand crises [42] and government crisis communication and strategy choice [43, 44] and has achieved good results. Therefore, this study attempts to use data mining methods to obtain Weibo users' comments after a university public opinion event, and construct a sentiment index through sentiment analysis, to evaluate the effect of Chinese universities' image repair strategies.

2.3. Image Repair Theory. One aspect of crisis management is crisis communication which gradually plays a role in coordinating the relationship between stakeholders and enterprises in promoting effective communication. Crisis communication means the communication between an organization and the public before, during, and after a crisis. Its primary function is to influence public opinion and reduce the damage to the organization's reputation [45]. With the introduction of rhetoric theories to crisis communication research in the 1990s, Benoit's image repair theory and Coombs' crisis response strategy have emerged and they have become essential measures for organizations to carry out crisis management.

Coombs [10] has put forward seven crisis response strategies, including attacking the accuser, denial, excuse, justification, ingratiation, corrective action, and full apology. Subsequently, the situational crisis communication theory (SCCT) was formed. The foundation of the crisis response strategy is the image repair theory put forward by Benoit [14]. Based on the discourse theory of image repair, this theory includes more specific image restoration strategies, which are organizations' responses after being questioned by the public or the image damaged. Image restoration strategies include denial, evasion of responsibility, reducing offense of event, corrective action, and mortification (Table 1).

At present, the image repair theory has been widely used in response to corporate reputation restoration [46],

TABLE 1: Image restoration strategies (Benoit, 1997, P179).

Strategy	Key characteristics
(1) Denial	
(1.1) Simple denial	Did not perform the act
(1.2) Shift the blame	Act performed by another
(2) Evasion of responsibility	
(2.1) Provocation	Responded to the act of another
(2.2) Deficiency	Lack of information or ability
(2.3) Accident	The act was a mishap
(2.4) Good intentions	Meant well in the act
(3) Reducing the offense of event	
(3.1) Bolstering	Stress on good traits
(3.2) Minimization	Act not serious
(3.3) Differentiation	Act less offensive
(3.4) Transcendence	More important considerations
(3.5) Attacking the accuser	Reduce the credibility of the accuser
(3.6) Compensation	Reimburse victim
(4) Corrective action	Plan to solve or prevent the problem
(5) Mortification	Apologize for act

handling university sexual assault scandals [17], response to medical malpractice [47], government image and international image building in crisis [48, 49], and other fields. The research shows that appropriate image restoration strategies can obtain positive responses and support from the public, and help companies, enterprises, universities, governments, and other organizations to restore trust during the crisis, thus minimizing the impact of the crisis. Therefore, this study attempts to use Benoit's image repair theory to analyse the image repair strategies commonly used by Chinese universities in dealing with public opinion events.

3. Materials and Methods

3.1. Research Design. In China, most universities have opened an official account on Weibo, mainly used for campus news releases and daily publicity. Besides Weibo, the official account on WeChat and the campus website are also used by some universities to publish authoritative information. However, compared with the WeChat accounts and campus websites of universities, official Weibo posts are relatively more interactive and can obtain netizens' opinion feedback, attitudes, and information needs. Therefore, by analysing the online comments on universities' Weibo posts, we can identify netizens' sentiments and can measure the effectiveness of the image repair strategies.

Therefore, this study attempts to answer the following research questions:

- (1) What are the image repair strategies commonly used by Chinese universities?
- (2) How is the sentiment analysis of online comments used to measure the effect of university image repair strategies?

Based on the network public opinion events that happened in Chinese universities, this study obtained the texts

published by universities on their official platforms and the online comments of Weibo users through manual retrieval and web crawler, respectively. Then, based on the text encoding data, the strategies used by Chinese universities in image repair are summarized and analysed accordingly. Meanwhile, according to the sentiment analysis of online comments, the sentiment index is constructed to evaluate the effect of universities' image repair strategies (See Figure 1).

3.2. Data Collection. This study collected 43 network public opinion events in 39 Chinese universities from February 1, 2019, to June 30, 2021. First, to analyse the image repair strategies, this study collected the universities' 58 texts published on Weibo, WeChat, and campus websites through manual retrieval. These text forms include briefings, notifications, and disposition results. Then, to investigate netizens' responses to the universities' image repair strategies, this study employed natural language processing to conduct sentiment analysis of the online comments. However, 13 universities in the case database issued texts only on WeChat and campus websites, where the comment data were inaccessible, and 26 universities used the Weibo platform where the comment data were accessible, although limited due to the default setup of Weibo. Therefore, this study employed the web crawler software "GooSeeker" and finally obtained 14,210 Weibo comments on 26 universities' and 39 Weibo posts.

In China's Higher Education Public Opinion Report (2019), China's higher education network of public opinions were divided into nine categories [50], such as policy and management, quality evaluation, teacher development, and college students. Accordingly, this study divided the collected 43 university network public opinion events into four categories: academic misconduct, teachers' lapse, personal safety, and public opinion hot events. The definitions of each category are as follows:

- (1) Academic misconduct: this includes university teaching and research personnel, management personnel, and students' violation of recognized academic standards, and academic integrity in scientific research and related activities, including plagiarism and falsification of papers
- (2) Teachers' lapse: it includes university teachers' violation of professional ethics and fundamental principles, such as harassing students, engaging in malpractices for personal gain, and abusing students, which is to be severely punished in China
- (3) Personal safety: this includes incidents that occur in universities and affect the personal safety of teachers and students, such as accidental death, food safety, and infectious diseases
- (4) Public opinion hot events: these are the events that occur in universities which quickly become the focus of public attention and cause heated discussion after media reports or exposure, including the

management of overseas students and inappropriate remarks of teachers and students

The proportion of the four types of events is shown in Figure 2:

3.3. Image Repair Strategies: Data Encoding. To analyse the specific strategies used by Chinese universities in image repair, this study collected 58 texts which were officially released by universities involved in 43 cases of network public opinion events. Because it takes time to investigate and obtain evidence, it is generally necessary for universities to deliver a briefing and/or notification before issuing the disposition result, indicating that the universities are aware of the public opinion event and have started the investigation (as in cases 8/9/16). Nevertheless, some universities combine the briefing and notification with the disposition result in one text. That is, the final disposition of the case is formed after the complete investigation process (as in cases 18/27/41). This study encoded the 58 Chinese texts according to the image restoration strategies described by Benoit [14], and the examples of codes are shown in Table 2.

The specific process of encoding is as follows: First, the author and the three master students conducted a pilot encoding based on the comprehensive analysis of the image restoration strategy as per the examples given by Benoit. Then, the four people randomly encoded five texts and rechecked them to unify the encoding standard. Next, the author and the first two master students independently encoded all 58 Chinese texts, and the similarity rate exceeded 87%. Then, the third master student rechecked and recoded the controversial encoding parts and improved the similarity rate of text encoding results to 95%. Finally, the encoding results were determined by the author and the three master students after consultation and after they were tested by random sampling.

3.4. Effect Evaluation: Sentiment Analysis and the Sentiment Index. In the Internet age, user-generated content (UGC) on social platforms has become an essential source of information. A typical example of user-generated content is the online comments on e-commerce platforms. Computer natural language processing ("NLP" hereafter) can conduct the sentiment analysis of the obtained online comments to help evaluate the comments' sentiment polarity (positive or negative). As the sentiments reflected in online comments will affect the public's attitude, the more positive the public comments are, the more positive the sentiments will be. Sentiment analysis is thus considered an effective method to collect opinions [51]. In order to successfully manage public opinion and crisis in colleges and universities, it is necessary to examine public sentiment and other sentiment-related reactions [52]. Therefore, this study uses NLP to conduct sentiment analysis of the online comments obtained. The results can reflect, to some extent, the genuine attitude of netizens towards the universities' image repair to evaluate the image repair effect.

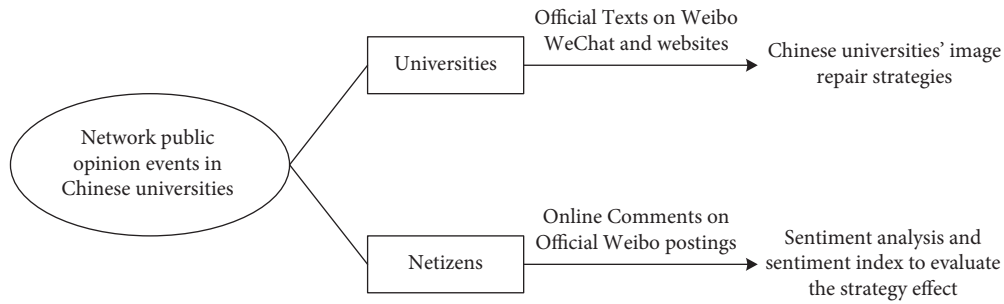


FIGURE 1: A research framework.

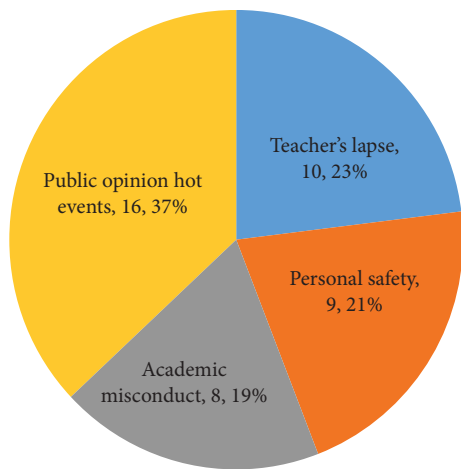


FIGURE 2: Proportion of university network public opinion events.

In this study, the sentiment analysis of online comments is realized by using Baidu AI open platform’s NLP technology. Baidu’s NLP technology contains a sentiment tendency analysis module that provides two interfaces: general and customized models. The former draws on the subjective information text of a single subject. The sentiment tendency is automatically evaluated and the corresponding confidence level is given. Thus, users can realize “plug and play.” The latter trains and optimizes the former by uploading positive and negative sentiment corpus of specific application scenarios, thus improving the analysis accuracy of the former. Currently, this study chooses the latter model of sentiment tendency analysis as it carries out the sentiment analysis of Weibo comments with higher accuracy through supervised machine learning. The specific operation steps are as follows:

First, according to the operation process of Baidu’s AI open platform, a new exclusive sentiment analysis task was created in the NLP module under “product-service.”

Second, under the “personalized customization” taskbar, the model was created, and the training and the generation model were carried out in turn in the customization process. As the platform requires that each training corpus should be over 1,000 to ensure the customization effect, so three groups of 1000, 1100, and 1300 positive and negative comments were manually marked out from the collected 14210

comments. In the training process, the platform selected 10% of the training data by default to evaluate the model and gave the model accuracy before and after training. The model with the highest model accuracy was selected for use after the training was completed.

Finally, comparing the results of the three training models (shown in Table 3), we selected Model 2 with the highest accuracy to analyse the sentiment tendency.

Online comments under a single Weibo post were arranged mainly in two ways: by heat and by time. The online comments collected in this study were arranged by heat. The main reasons include the following: (1) To arrange the online comments by heat is the default setting of Weibo. It prioritizes the online comments with the highest number of netizens’ likes and (2) Studies (e.g., [53]) have found that biased comments in the front will affect users’ attitude to comment later. Therefore, to a certain extent, the number of online comments can reflect the personal attitude of netizens, that is, the more comments, the higher the ranking, and the more likely it is to affect the comments of netizens behind. Furthermore, users’ online comment behaviour also obeys power-law distribution [54]. Thus, this study selected the top 50 Weibo comments with the most considerable number of likes to analyse the sentiment tendency and then constructed the sentiment index to evaluate Weibo users’ responses to universities’ official posts.

Thus, the sentiment index is constructed and the results of a single post are as follows:

- (1) Use the screening and sorting functionality in an Excel document to obtain the top 50 Weibo comments with the most considerable number of likes under a single post.
- (2) Use the Python code derived from the Model 2 interface to calculate the sentiment tendency probability of a single post one by one. The probability value range from (0 to 1), and a probability value of 0.5 is considered as neutral. When the value goes over 0.5, it indicates that the probability of positive sentiment is higher, regarded as a positive comment; and when the value <0.5, it indicates that the probability of negative sentiment is higher, regarded as a negative comment.
- (3) Construct and calculated the online comment sentiment index of a single post. Here, we consider both

TABLE 2: Encoding example with Benoit's image restoration strategy.

Strategy	Key characteristics	Encoding examples
(1) Denial		
(1.1) Simple denial	Did not perform the act	(C13) Our school solemnly declares that this matter has nothing to do with our school!
(1.2) Shift the blame	Act performed by another	None
(2) Evasion of responsibility		
(2.1) Provocation	Responded to the act of another	(C1) Recently, the suspected academic misconduct and other issues of Zhai XX, a 2014 doctoral student in our school, have aroused social concern.
(2.2) Deficiency	Lack of information or ability	(C34) It was rainy and snowy on the day of the incident, and the road was covered with snow and ice.
(2.3) Accident	The act was a mishap	(C26) The police investigation conclusion is "falling from a building of high altitude, excluding homicide."
(2.4) Good intentions	Meant well in the act	None
(3) Reducing the offense of event		
(3.1) Bolstering	Stress Good traits	(C42) The school have attached great importance to this and has immediately set up an investigation group to start the investigation.
(3.2) Minimization	Act not Serious	(C22) After treatment, the symptoms of the sick students slowed down, and some of the symptoms disappeared.
(3.3) Differentiation	Act less offensive	None
(3.4) Transcendence	More important considerations	(C10) XX university attaches great importance to teachers' ethics and always adheres to a zero-tolerance attitude towards violations of teachers' ethics.
(3.5) Attacking the accuser	Reduce the credibility of the accuser	(C13) The headlines are seriously inconsistent with the facts. I hope the mass media, netizens, and readers will not believe rumors or spread them.
(3.6) Compensation	Reimburse victim	(C6) The admissions committee decided to apply for a supplementary enrollment of 2 candidates who had withdrawn from the file according to the procedure.
(4) Corrective action	Plan to solve or prevent the problem	(C16) After being examined and approved by the presidents' office meeting, our school gave Ji XX a school expulsion.
(5) Mortification	Apologize for act	None

the weight of the number of likes of each comment among the top 50 and the sentiment polarity of a single post, that is, positive (+) and negative (-). (a) We then calculate the proportion of likes for each comment by using the formula (1). (b) Because the number of likes among the top 50 comments differs widely, we use formula (2) to standardize the results in Step (a) to reduce the difference gradient. (c) Multiply the sentiment probability value of each comment calculated in Step (b) with the weight after standardization processing. The polarity of the product is distinguished by positive and negative, that is, when the value of the calculation result is >0.5 it is considered as positive, and when the value of the calculation result is <0.5 , it is considered as negative. (d) Sum up the values of the top 50 online comments to obtain the sentiment index of the online comments of a single post. The range of the sentiment index is $(-\infty, +\infty)$. The larger the value, the higher the positive attribute of sentiment. The calculation results of the sentiment index are shown in Table 4.

$$P_{\text{like}} = \frac{\text{single comment likes}}{\sum \text{top50 comment likes}}, \quad (1)$$

$$N = \frac{x - \min}{\max - \min}, \quad (2)$$

4. Results and Discussion

4.1. Chinese Universities' Image Repair Strategies. The current analysis shows that, in releasing information on the official platform after public opinion events, the image repair strategies Chinese universities commonly use are reducing offense of the event (44.1%), evasion of responsibility (31.68%), and corrective action (23.6%). On the other hand, they seldom use denial (0.62%) and never use mortification (0%) (Table 5). Specifically, Chinese universities frequently employ the image repair strategy combination of bolstering (29.19%), provocation (24.84%), and corrective action (23.60%).

Bolstering refers to reducing the public's negative feelings about the institution by describing the positive characteristics or behaviours of the past [14]. In the official texts released by Chinese universities, bolstering is reflected more in a positive and serious attitude. It implies that the case will be investigated and dealt with according to some functional departments' relevant regulations and procedures, which have a strong administrative colour. The provocation is a public response to real-name reporting and netizens' questioning. It also embodies the official attitude of Chinese universities. The corrective action means a kind of error correction behaviour of university officials after public opinion events. It is also the result of events about which the public is most concerned. It affects the development of

TABLE 3: Model training results.

	Positive comment corpus	Negative comment corpus	Accuracy of general models (%)	Accuracy of customized models (%)
Model 1	1000	1000	65	73
Model 2	1100	1100	63.68	79.37
Model 3	1300	1300	67.05	77.78

TABLE 4: Sentiment index of a single post in the cases.

Serial number	Case number	Event type	The sentiment index of a single post	
			In notifications	In disposition results
1	C1	Academic misconduct	1.4042 0.4627	0.2144 —
2	C3	Public opinion hot event	—	0.5373
3	C4	Public opinion hot event	—	1.8551
4	C5	Public opinion hot event	—	0.1993
5	C8	Teachers' lapse	-0.243	3.9924
6	C9	Teachers' lapse	0.6457	2.3465
7	C10	Teachers' lapse	—	2.0328
8	C11	Teachers' lapse	1.6679	—
9	C12	Public opinion hot event	1.0089	—
10	C13	Public opinion hot event	3.9186	—
11	C14	Public opinion hot event	<50 comments	—
12	C15	Personal safety	-0.0968	2.5703
13	C16	Public opinion hot event	1.4454 1.2675	1.4653
14	C18	Teachers' lapse	-0.743	—
15	C20	Academic misconduct	-0.0863	0.6123
16	C21	Academic misconduct	<50 comments	1.4962
17	C22	Personal safety	1.0317	<50 comments
18	C23	Personal safety	<50 comments	—
19	C24	Personal safety	—	1.5613
20	C25	Personal safety	—	0.8034
21	C26	Personal safety	—	1.9495
22	C29	Public opinion hot event	-0.4374	—
23	C30	Public opinion hot event	0.9188	—
24	C34	Public opinion hot event	1.1523	—
25	C35	Personal safety	1.0051	—
26	C38	Academic misconduct	<50 comments	<50 comments

TABLE 5: Encoding results and statistical analysis.

Strategy	Code number	Proportion (%)
(1) Denial	1	0.62
(1.1) Simple denial	1	0.62
(1.2) Shift the blame	0	0
(2) Evasion of responsibility	51	31.68
(2.1) Provocation	40	24.84
(2.2) Deficiency	5	3.11
(2.3) Accident	6	3.73
(2.4) Good intentions	0	0
(3) Reducing the offense of event	71	44.1
(3.1) Bolstering	47	29.19
(3.2) Minimization	7	4.35
(3.3) Differentiation	0	0
(3.4) Transcendence	15	9.32
(3.5) Attacking the accuser	1	0.62
(3.6) Compensation	1	0.62
(4) Corrective action	38	23.60
(5) Mortification	0	0

TABLE 6: Example of image repair strategies and text form in public opinion events.

Type	Case number	Text form	Image repair strategies
Academic misconduct	C31	Disposition result	Provocation + bolstering + corrective action
	C36	Disposition result	Provocation + corrective action
Public opinion hot events	C19	Notification	Provocation + bolstering + transcendence
	C30	Notification	Provocation + bolstering + corrective action
Personal safety	C23	Notification	Accident + bolstering
	C25	Notification	Bolstering + minimization
Teachers' lapse	C11	Notification	Provocation + bolstering + corrective action
	C27	Disposition result	Provocation + bolstering + corrective action

public opinion events through forwarding, commenting, and praising on social platforms [55] and is an essential strategy for image repair.

The apology strategy has never been used in image repair by Chinese universities. Similarly, most Chinese companies avoid public apologies and save face by keeping silent [56]. In contrast, an apology is often considered the most effective image repair strategy in the eyes of western scholars. Stamato ([57]: 397) maintains that "By finding the right expression and circumstance, and by acknowledging the wrongs done and the harm caused, an apology can serve as an instrument of reconciliation, and this help to create the conditions for seeking a just and sustainable peace." However, Compton ([58]: 357) points out that "parts of the image repair effort seem to emphasize that the apologists did not really mean the apology in the first place," and thus it may be "apologizing for an apology." The difference between China and the West in choosing the apology strategy mainly originates from cultural differences. China's political culture places more emphasis on the government's ability to control and deal with the aftermath of an event. However, an apology often reduces the government's credibility in handling emergent public events, so the apology strategy is often regarded as the last resort [59]. Although China's political culture does not use the apology strategy in image repair, it pays more effort in taking practical actions to recover losses after the crisis, that is, actions speak for themselves. Therefore, Chinese universities avoid using the apology strategy, either based on the connotation of apology in Chinese culture or to maintain their credibility.

For different types of public opinion events, the emphasis of Chinese universities' image repair strategies is also different (Table 6).

- (1) In the public opinion events of academic misconduct, Chinese universities choose the image repair strategies of provocation, bolstering, and correct behavior more often. Correspondingly, all universities choose to issue their disposition results to deal with the teachers and students involved in academic misconduct to varying degrees. The provocation to reports from various channels, supported by the

punishment provisions of academic misconduct in schools and then adopting the strategy combination of punishment and corrective action, fully reflects Chinese universities' efforts to handle academic misconduct.

- (2) In the public opinion hot events, Chinese universities also choose the image repair strategy combination of provocation, bolstering, and corrective action. This combination of strategies is realized more through official notifications. Specifically, the universities involved clarify the truth, announce corrective measures, reasonably respond to hot public discussions, support relevant regulations and procedures, and then issue specific corrective actions in the notifications.
- (3) In personal safety public opinion events, most Chinese universities have adopted the image repair strategy combination of bolstering and minimization. This strategic combination is supported by the disposition results released by authoritative organizations, which downplays the adverse consequences of such events, emphasizes the irresistibility of accidents, and finally issues official notifications.
- (4) In the public opinion events of teachers' lapses, the vast majority of Chinese universities have adopted the image repair strategy combination of provocation, bolstering, and corrective action. They issue separate notifications or disposition results to repair images. Specifically, the universities involved give a reasonable response to various reports and support the severe punishment of teachers' lapses with various regulations of the state and schools. This strategy combination shows Chinese universities' zero-tolerance attitude towards teachers' lapses.

4.2. Online-Comment-Based Effect Evaluation of Image Repair Strategies. In this study, the sentiment analysis and the sentiment index of online comments on Weibo are used to measure the effect of Chinese universities' image repair strategies. The current findings are as follows:

TABLE 7: Relationship between the repair strategy release process and the sentiment index.

Case number	Event type	The repair strategy release process			The sentiment index	
		In notifications	In disposition results	In notifications	In disposition results	
C8	Teachers' lapse	Accident + bolstering + corrective action	Corrective action + transcendence	-0.243	3.9924	
C9	Teachers' lapse	Provocation + bolstering + transcendence	Provocation + bolstering + corrective action + transcendence	0.6457	2.3465	
C11	Teachers' lapse	Provocation + bolstering + corrective action	—	1.6679	—	
C15	Personal safety	Bolstering + minimization	Provocation + bolstering + accident + minimization + corrective action	-0.0968	2.5703	
C24	Personal safety	Accident + bolstering	—	—	1.5613	
C25	Personal safety	Bolstering + minimization	—	—	0.8034	

TABLE 8: Corrective action and the sentiment index in teachers' lapse events.

Case number	Image repair strategy		The sentiment index		Corrective action
	In notifications	In disposition results	In notifications	In disposition results	
C8	Accident + bolstering + corrective action	Corrective action + transcendence	-0.243	3.9924	Revoke their professional and technical positions according to procedures; report to the higher authorities for approval to revoke their teacher qualifications; and dissolve the employment relationship with its personnel. Give dismissal, and report to the higher authorities for approval according to procedures; revoke his associate professor's professional and technical position; and revoke his teaching qualification.
C9	Provocation + bolstering + transcendence	Provocation + bolstering + corrective action + transcendence	0.6457	2.3465	Revoke the qualification of teachers, cancel the qualification in relevant talent plans, and report to the higher authorities for approval; cancel the qualification of postgraduate tutor; to be dismissed.
C10	—	Provocation + bolstering + transcendence + corrective action	—	2.0328	

TABLE 9: Image repair strategies and the sentiment index in public opinion hot events.

Case number	Image repair strategies		The sentiment index	
	In notifications	In disposition results	In notifications	In disposition results
C13	Provocation + bolstering + attack accuser + corrective action		—	3.9186
C29	Provocation + bolstering + corrective action		—	-0.4374

TABLE 10: Image repair strategies and the sentiment index in personal safety events.

Case number	Image repair strategies		The sentiment index	
	In notifications	In disposition results	In notifications	In disposition results
C24	Accident + bolstering	—	—	1.5613
C26	Accident + bolstering	—	—	1.9495
C35	Accident + bolstering	—	1.0051	—

- (1) When the universities involved release only notifications but no disposition results, the sentiment index of the public opinion events is lower. In contrast, the sentiment index significantly improves, and the image repair effect is better when the universities release notifications first and disposition results after. This practice conforms to the general cognition of the public and reflects the serious attitude that universities should have. Therefore, it is conducive to reshaping universities' images and can gain strong support from alumni, students, and other relevant parties in universities [60]. This phenomenon is most apparent in the events of teachers' lapses and personal safety (Table 7).
- (2) The sentiment index of teachers' lapse events is higher than that of other types of events. This result is associated with the corrective action of universities. To the public, university teachers are the highly educated class in society, so the public has higher requirements for university teachers' moral standards. Therefore, they think teachers' lapses should be avoided and thus pay more attention to such events. As a result, all universities use corrective action to repair images of such events, either dismissing the teacher involved or giving severe punishment. This strategy reflects the official attitude of zero tolerance for teachers' lapse. It also verifies the research conclusion of Claeys et al. [61] that the extremely severe and almost reconstructive punishment measures for such incidents (such as dismissal) have a tremendously positive influence on image repair. Therefore, the more severe the universities' corrective action in teachers' lapse events, the higher the sentiment index of online comments (Table 8).
- (3) There are significant differences in sentiment indexes among different public opinion hot events. This result may be related to the nature of a specific event and should be analysed on a case-by-case basis. For

example, in Case 13, the damage to the university's image was purely caused by the media's errors which had nothing to do with the universities themselves. Thus, the sentiment index of netizens' online comments is the highest. In contrast, Case 29 involved Chinese people's patriotic sentiment. Although the university issued detailed notifications and specific corrective actions, the image repair effect was still unsatisfactory, and the sentiment index was the lowest (Table 9).

- (4) The sentiment index in personal safety public opinion events is all positive, indicating that netizens are satisfied with the image repair strategies. This is because such incidents are related to the life safety of teachers and students in school. Moreover, the official texts of the universities involved are generally released based on the authoritative investigation results of government agencies with absolute credibility, that is, the public security organs. Therefore, this image repair strategy has high authority and credibility, and the sentiment index of corresponding cases is also more positive, and the image repair effect is better (Table 10).

5. Conclusions

This study examines 43 cases of network public opinion events in Chinese universities. First, it draws on Benoit's image restoration strategy to analyse the universities' image repair strategies used in their official texts. Then it constructs the sentiment index based on the sentiment analysis of Weibo users' online comments to discuss the universities' image repair effect in public opinion events. This study's findings are as follows:

- (1) Chinese universities commonly use the image repair strategy combination of bolstering, provocation, and corrective action. The strategy combination has a positive effect on responding to public queries. On the other hand, Chinese universities have not used

the apology strategy commonly used in western discourse systems.

- (2) Through the sentiment analysis and the sentiment index to evaluate the image repair strategy effect, we find that the public's response to different types of university network public opinion events varies. Complete information release processes including briefings, notifications, and disposition results have a better image repair effect, which is most apparent in teachers' lapse and personal safety events. The sentiment index in teachers' lapse events is higher than that of other types of events and is related to the universities' corrective actions. The sentiment index in different public opinion hot events is quite different, which may be related to the nature of specific events. In personal safety public opinion events, netizens are more satisfied with the image repair strategies.

Previous studies mainly focus on the image repair strategies applied in enterprises and governments' crisis management, and most of them adopt case study methods to discuss the image repair strategies selected in a specific case. This study takes Chinese universities as the research subject and thus extends the application scope of the image repair strategy. At the same time, to evaluate the effect of the universities' image repair strategies, the study employs NLP to carry out the sentiment analysis of Weibo users' online comments and constructs the sentiment index accordingly. This research method may provide a reference in the strategy effect evaluation for relevant research studies.

The limitation of this study mainly lies in the limited number of online comments in the database. Due to the system setup of the Weibo platform, the study failed to obtain comments that are set as unable to comment or invisible. It is hoped that a more effective method to obtain online comment data may be explored to enlarge the database in the follow-up research of university network public opinion events.

Data Availability

The data used in this paper were obtained from the Sina Weibo platform by using the crawler named GooSeeker. The web crawler GooSeeker (<http://www.gooseeker.com>) is a free web page data capture tool in China, with strong usability and operability. The study collected 43 network public opinion events in 39 Chinese universities from February 1, 2019, to June 30, 2021. All of these cases have had a significant impact on China's online platforms, and detailed information can be obtained through Baidu search engine (<http://www.baidu.com>). However, for privacy reasons, these cases and the universities involved will not be provided as attachments.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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