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"DOWNSCALING" OR "NAVIGATION": AIGC FACILITATING THE RESEARCH ON PUBLIC OPINION RESPONSE IN ENTERPRISE EMERGENCIES

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ABSTRACT

This study aims to address the current dilemma in corporate emergency online public opinion governance: overemphasis on technical model analysis, insufficient empirical verification, and unclear causal relationship between AIGC technology and governance effectiveness. Taking the "Ailao Mountain Incident" as a case study, this research adopts multi-source data collection, comparative modeling analysis, cross-platform dissemination simulation, and controlled experiments. Integrating the three-dimensional analytical framework (intensity, temporality, spatiality) of Event System Theory (EST), it explores the information characteristics, dissemination patterns, interaction mechanisms, and innovative paths of AIGC in corporate emergency public opinion response. The results indicate that: First, there exists a significant positive correlation between the intensity of corporate emergencies and AIGC's public opinion governance effectiveness. In high-intensity events, AIGC demonstrates advantages in monitoring coverage, judgment precision, and content production efficiency. Second, AIGC's effectiveness presents stage-specific adaptive characteristics as the event evolves over time: during the outbreak phase, it focuses on aggregating fragmented information and identifying key points; during the diffusion phase, it emphasizes tracking dissemination paths and risk modeling; during the stabilization phase, it shifts to long-tail monitoring and effect evaluation. Third, the wider the spatial diffusion scope of the event, the more critical AIGC's role becomes in integrating heterogeneous spatial information and coordinating cross-domain governance. However, AIGC also carries the risk of "technological backlash." This study not only enriches the application dimension of EST in public opinion research but also provides insights for enterprises to transform their public opinion management from the "passive response" model to the new paradigm of "proactive prevention and control."

Keywords: AIGC, Corporate emergency online public opinion, Event system theory, Topic modeling, Human-machine collaborative governance



2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

1. INTRODUCTION OF THE PROBLEM

Shanqu's official Weibo account (hereinafter referred to as "Shanqu") is a pioneer in the field of pigment knowledge popularization in China, taking the lead in driving the trend of scientific communication in China's pigment industry. On September 28, 2024, the pigment artist "Shanqu" released a video titled "Online Pigment Artist VS Real-life Pigment Artist - Extreme Minerals Edition" on a short video platform. This video garnered 7.451 million likes on Tiktoukou^[1]. However, it unexpectedly triggered a corporate-related incident, which sparked a wave of significant negative online public opinion across China in the late autumn and early winter of 2024^[2]. The challenges of managing negative online public opinion during corporate emergencies, as exemplified by cases involving enterprises such as Shanqu, reveal a structural contradiction between factual communication and emotional communication mechanisms in China's online ecosystem. Dubbed the "Carter Dilemma," this contradiction reflects netizens' emotional tendencies, attitudes, stances, and core concerns regarding the incident. It also poses questions regarding the formulation of compliant online public opinion management strategies^[3]. This study aims to examine the evolution of online public opinion and governance approaches for corporate crises from the lens of Event System Theory. By utilizing AIGC technology to improve the efficacy of topic modeling and sentiment analysis in the field of natural language processing, and combining a close reading of netizens' comments with content analysis, this study seeks to identify the governance paradigms of AIGC-driven online public opinion management mechanisms for corporate emergencies.

Artificial Intelligence Generated Content (AIGC), with its outstanding natural language processing capabilities, holds broad application prospects. However, its development is accompanied by multiple risks, including ethical risks^[4], technological security risks^[5], and ideological risks^[6]. Meanwhile, AIGC, as a technological medium, is intervening to reshape the fermentation mechanism of public opinion incidents involving enterprises. Chen Yiqi's empirical analysis indicates that technologies similar to ChatGPT elevate the probability of "igniting" public sentiment on Weibo^[7]; Wei Junbin explores how AIGC induces new types of public opinion risks and proposes establishing a PDRR prevention and control system^[8]. Separately, Zhang Aijun et al. emphasize the key role of early warning technology in addressing this challenge^[9]. In academic studies on the governance of online public opinion regarding corporate emergencies, a series of practical case studies conducted by Yang Yangyang et al. confirm that the commonly used analytical tools in this field include the LDA model and fsQCA method. In recent years, the "evolving" nature of online public opinion related to corporate emergencies has resulted in increases in both its frequency and scope of impact, thereby heightening the complexity and challenges of public opinion management^[10].

It is evident that AIGC is not the sole mechanism for corporate public opinion management. Liu Lulu et al. employ Event System Theory, based on the case of Dongfang Zhixuan's "short essays," to reveal how technological empowerment and potential backlash enable dynamic adjustments tailored to specific public opinion contexts^[11]. Although technology plays a crucial role in corporate public opinion management, the application of any single technology may demonstrate vastly different effectiveness and impact mechanisms across diverse scenarios. Regarding existing research on corporate emergency public opinion management, while some achievements have been made, these



2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

findings primarily focus on the potential application models of AIGC in public opinion governance strategies. There is a lack of large-scale empirical studies to verify its specific effects. Notably, regarding the relationship between "AIGC empowerment"—specifically, the relationship between "AIGC technology" and "the improvement of public opinion management effectiveness"—there is considerable room for debate regarding the causal relationship between the two. In other words, does the application of AIGC technology directly improve the effectiveness of enterprises' online public opinion management in response to emergencies? Or is it the practical demand for effective online public opinion management during such events that has driven the in-depth application of AIGC technology in this field, thereby leading to changes in governance results?

Based on this, this study proposes three progressively refined research questions grounded in Event System Theory. Question 1: What are the characteristics of AIGC-generated public opinion information in different types of corporate emergencies? What role does this information play in the public opinion dissemination process, and what communication patterns does it reflect? Question 2: From the perspective of element interaction in Event System Theory, what are the interaction mechanisms between AIGC technology and the subjects, objects, and environments involved in corporate crisis communication and management? Question 3: Based on the aforementioned interaction mechanisms, what are the innovative pathways for AIGC to empower enterprises in managing public opinion during emergencies? What insights do this provide for optimizing enterprises' online public opinion governance system in response to emergencies?

2. RESEARCH HYPOTHESES

Based on the three-dimensional framework of Event System Theory (EST), which encompasses event intensity, temporality, and spatiality, and combined with public opinion governance practices regarding corporate emergencies (e.g., the "Ailao Mountain" incident), this study proposes the following theoretical hypotheses. It explores how these three-dimensional elements collectively influence the evolution and governance process of public opinion during corporate emergencies ^[12]. EST posits that event intensity, temporality, and spatiality constitute a triadic influence dimension. As a powerful tool for enhancing public opinion management capabilities, the practical effectiveness of AIGC technology largely depends on the aforementioned three-dimensional attributes of the target event. Taking the "Ailao Mountain" incident as an example, its high intensity, multi-stage temporal evolution, and cross-regional spatial diffusion make it an ideal case for testing the governance effectiveness of AIGC technology in complex scenarios.

Based on this, the study constructs a three-stage sequential theoretical framework to explore the interaction between the three-dimensional attributes of events and AIGC effectiveness. It proposes progressive hypotheses across these three stages and systematically analyzes the dynamic operation mechanism of AIGC in public opinion management.

H1: The higher the intensity of corporate emergencies, the more significantly AIGC technology can enhance the effectiveness of public opinion management and governance.



2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

High-intensity public events such as the "Ailao Mountain" incident are typically accompanied by massive, multi-dimensional, and rapidly spreading public opinion information—a characteristic that poses significant challenges to traditional manual governance models. Endowed with three core advantages (excellent data crawling, real-time analysis, and content generation), AIGC technology exhibits remarkable effectiveness in public opinion management when responding to high-intensity emergencies. Regarding three key indicators (public opinion monitoring coverage, assessment accuracy, and content production efficiency), there is a significant positive correlation between AIGC application and event intensity. According to EST, event intensity is defined as a composite indicator integrating novelty, disruptiveness, and significance, and this intensity level shows a strong positive correlation with AIGC's role in public opinion management.

H2: The effectiveness of AIGC in managing online public opinion triggered by corporate emergencies exhibits phased characteristics that evolve with the progression of the event.

During the outbreak phase of a public opinion crisis, AIGC technology enhances the timeliness and accuracy of information aggregation, facilitates early identification of key issues, and extends the response time window. These advantages provide valuable decision-making support for governance entities, enabling them to effectively respond to sudden public opinion events. In the diffusion phase, AIGC shifts its focus to dynamic monitoring of public opinion dissemination paths, construction of risk key node prediction models, and generation of differentiated response strategies, thereby forming a comprehensive closed-loop governance system. In the stable phase, AIGC's core functions include long-tail public opinion monitoring, comprehensive evaluation of governance effectiveness, and structured accumulation of experience-based knowledge—laying a solid foundation for establishing a data support system for the PDCA (Plan-Do-Check-Act) cycle. It is evident that the variability of event temporal attributes directly governs the phased adaptation of AIGC-driven strategies, revealing their corresponding patterns in the time dimension. According to EST, the temporal attributes of an event include three dimensions: occurrence sequence, duration, and intensity curve, and the interaction of these elements significantly affects the phased governance effectiveness of AIGC.

H3: The wider the spatial diffusion range of corporate emergencies, the more critical AIGC's empowering role becomes in integrating heterogeneous spatial public opinion information and coordinating cross-spatial governance actions.

When facing corporate emergencies with spatially heterogeneous public opinion on social networks, AIGC technology adopts a cross-spatial data correlation analysis strategy to break down information barriers and deepen understanding. Consequently, there is a positive adaptive relationship between AIGC and event spatial attributes—manifested as diminishing marginal collaboration costs and Pareto improvements in governance efficiency, which jointly promote system optimization and effectiveness enhancement. According to EST, spatial attributes consist of three dimensions: origin, propagation path, and impact scope, and these three dimensions collectively determine the diffusion range of an event. Additionally, there is a significant positive correlation



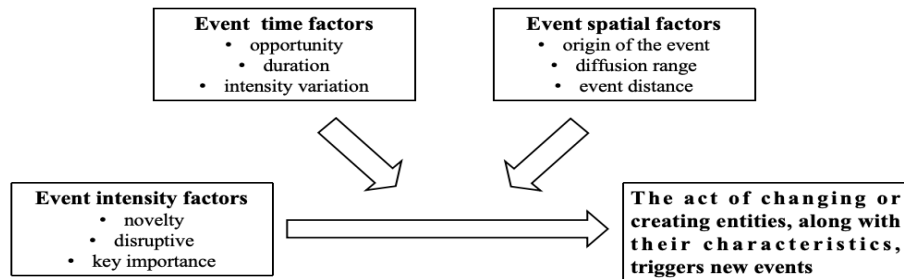
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November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

between the diffusion breadth of the event and AIGC's spatial integration capability.

Figure 1

Theoretical Model



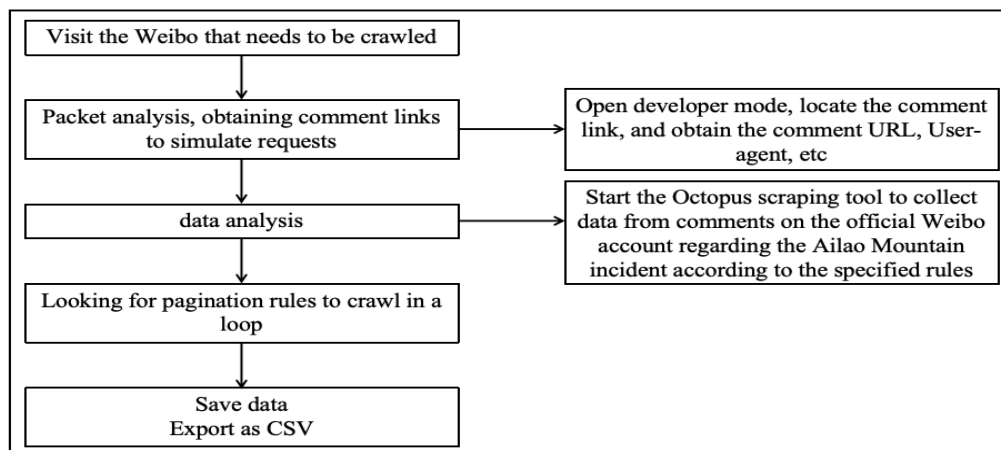
Source: Liu Dong and Liu Jun (2017)^[13]

3. RESEARCH DESIGN AND METHODS

From the perspective of analyzing the dissemination effects of online public opinion and user acceptance, this study primarily focuses on AIGC's strategies and practices in managing public opinion within the official Weibo comment sections regarding the "Ailao Mountain" incident. Aiming to explore how enterprises adapt their online public opinion communication models during corporate emergencies, it also investigates the formation mechanisms of public emotional responses and their inherent logic. Meanwhile, this study incorporates the core proposition of Event System Theory (EST)—that the multidimensional attributes of events play a key role in inter-entity interaction and systemic dynamic evolution. Therefore, the design of this study will closely center on the intensity characteristics, temporal sequence, and spatial propagation patterns of the "Ailao Mountain" incident. It will adopt a four-step phased progressive research framework, integrating AIGC-based experimental designs to quantify and compare the actual effects and efficacy of AIGC technology in public opinion management ^[14].

Figure 2

Weibo Comment Text Data Collection Approach





2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

3.1 Step 1: Event Intensity Attribute Exploration

To explore the intensity attributes of the "Ailao Mountain" incident, this study systematically collects and observes online comment data from official Weibo accounts in response to the incident [15]. Integrated with multimodal information analysis, this study assesses netizens' participation levels, evaluates emotional tendencies, and tracks the development trajectory and evolution trends of online public opinion. With the assistance of the Octopus data crawling tool, this study crawled 9,974 comments from a Weibo post related to the "Ailao Mountain" incident, spanning August 20 to August 31, 2024. Initial text cleaning was conducted to remove non-text characters, lemmatize English words, and eliminate common stop words, thereby enhancing data quality and analysis efficiency. The Phrases module in the Gensim library was employed to construct a dedicated phrase bank, ultimately filtering 7,765 valid comment texts that meet research standards. Additionally, this study collects comments under popular videos related to the "Ailao Mountain" incident from mainstream social media platforms other than Weibo (e.g., Douyin and Bilibili) as supplementary data sources. This enables the construction of a comprehensive dataset to support subsequent research, which aligns with the consideration of event spatial attributes in Event System Theory (EST).

3.2 Step 2: Event Temporal Attribute Dynamic Analysis

Grounded in the dynamic analysis of event temporal attributes in EST, this study employs two methods—topic modeling and sentiment analysis—to explore and extract Weibo feedback related to the "Ailao Mountain" incident [16]. Both BERTopic and LDA topic models are utilized for training and analyzing the comment data. For the BERTopic model, the `min-cluster-size` parameter is set to 200, 300, 400, and 500 respectively, while the `nr-topics` parameter is set to auto mode to generate models with 4–7 topics [17]. For the LDA model, coherence and perplexity are calculated for the optimal number of topics (K) (ranging from 2 to 10), and this study determines that (K) values between 3 and 8 exhibit high coherence and low perplexity [18]. After completing the topic modeling task, this study conducts manual comparison and discussion of the 4 topic models constructed by BERTopic and the 6 topic models constructed by LDA. Through comprehensive evaluation, the LDA model with better interpretability is selected as the traditional analysis control group. Correspondingly, this study establishes an AIGC experimental group for comparison. With the assistance of AIGC technology (particularly methods based on GPT series models), this study achieves topic extraction and sentiment analysis of comment data, facilitating a deeper understanding of the multidimensional characteristics of text content and public emotional trends. The pre-trained model is fine-tuned to adapt to the specific context of the "Ailao Mountain" incident, focusing on special linguistic phenomena (e.g., high-frequency dialect vocabulary and local symbols in comment data). AIGC technology is used to establish correspondences between dialects and standard languages, optimizing the accuracy of semantic understanding when processing texts containing these specific linguistic features. This study compares differences in quantitative metrics (e.g., topic extraction precision and sentiment recognition deviation rate) between traditional models and AIGC models, and further analyzes AIGC's unique advantages and potential limitations in handling complex or special contexts.



2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

For the construction of the LDA topic model, this study uses Python based on the Gensim library to preprocess the collected and cleaned Chinese comment data related to the "Ailao Mountain" incident ^[19]. Specifically, regular expressions are applied to remove non-text characters for textual purification; the Spacy library is used to lemmatize English words (normalizing different forms to their original forms to ensure consistency); and the NLTK library is employed to eliminate common stop words and irrelevant high-frequency terms (e.g., "hahaha", "at a loss for words", "most") ^[20]. Additionally, a dedicated phrase bank related to the "Ailao Mountain" online public opinion incident is constructed using the Phrases module in the Gensim library ^[21]. This module identifies two-word and three-word collocations in the comments (e.g., "Ailao Mountain incident", "online public opinion governance", "Shanqu") ^[22], aiming to reduce data noise and improve model recognition accuracy. After preprocessing, all topic models with (K) (number of topics) ranging from 3 to 8 are extracted and evaluated ^[23]. Through comparison and discussion, this study determines that when $(K = 3)$, the topic model exhibits lower perplexity, higher coherence, and better interpretability. Consequently, features highly relevant to these three topics are extracted.

3.3 Step 3: Event Spatial Attribute Interpretation

Step 3 focuses on interpreting event spatial attributes in conjunction with EST. This study selects comments under popular videos related to the "Ailao Mountain" incident from mainstream social media platforms other than Weibo (e.g., Douyin and Bilibili) as supplementary data sources, and applies consistent topic modeling and sentiment analysis methods to process the cross-platform data. This enables comprehensive analysis of the characteristics and patterns of online public opinion dissemination ^[24]. Additionally, this study constructs an AIGC-based online public opinion dissemination simulation system, which takes data collected from multiple online platforms as input, and simulates public opinion propagation trajectories and their impacts under various intervention scenarios ^[25]. For example, this study sets up scenarios where AIGC automatically generates rumor-debunking texts and official response content and simulates the deployment of such content at different dissemination nodes for comparison with a control group (without AIGC intervention). Through this comparative analysis, this study explores the guiding and controlling effectiveness of AIGC in the public opinion dissemination process, thereby revealing the intrinsic mechanism of AIGC's role in event spatial diffusion.



2025 ANPOR-APCA Annual Conference
November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

Table 3

Top 10 Videos Related to the "Ailao Mountain Incident" on Douyin Platform by View Count

ranking	Video Title	Video type	uploader	No. of subscriptions (ten thousand)	Upload Time	Number of views (ten thousand)
1	The Complete Record of the Ailao Mountain Tragedy	documentary	Detective Old Donkey	21	2024.10.03	2800
2	Exploration of Ailao Mountain: The Last Moments of the Missing Person	exploration	Traveler Avery 8S3	15	2024.11.05	1500
3	The Ailao Mountains: The Mystery of the Forbidden Zone	popular science	Cantonese fish	523	2024.10.16	1200
4	The entire process of ore collection in the Ailao Mountain	documentary	Mountain Harvest	650	2024.09.28	741
5	Ailao Mountain Camping Guide	travel	Hahnemann	148	2024.10.12	600
6	Ailao Mountain Photography: The Beauty of Nature	photography	Little Dudu is poisonous	30	2024.10.10	550



2025 ANPOR-APCA Annual Conference
November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

ranking	Video Title	Video type	uploader	No. of subscriptions (ten thousand)	Upload Time	Number of views (ten thousand)
7	The Ailao Mountains: Where Danger and Beauty Coexist	documentary	Lazy Mom Miki	81	2024.10.15	500
8	Ailao Mountain Live: Real-time Adventure	live broadcast	Han Yun Erhu Manufacturer	59	2024.10.14	450
9	The Importance of Ecological Protection in Ailao Mountain	popular science	Little An's Tips	22	2024.10.13	400
10	The Ailao Mountains: Stories of Travelers	travel	Life Donut	18	2024.10.11	350

3.4 Step 4: Comprehensive Analysis of Event Multidimensional Attribute Interaction

Grounded in the Event System Theory (EST) framework, this study synthesizes the interactive relationships between event intensity, temporal dynamics, and spatial distribution. It conducts in-depth analysis of Weibo comment data via a refined content analysis method, incorporating findings from previous studies. This study explores the operational mechanisms of AIGC in public opinion management and evaluates its practical effectiveness and potential role in addressing information fragmentation, curbing rumor dissemination, and facilitating effective policy responses.

Meanwhile, this study designs a real-scenario intervention experiment: it applies AIGC-generated public opinion management strategies to subsequent responses on Shanqu's official Weibo account, with experimental and control groups established. By comparing the two groups in terms of public opinion calming speed, public sentiment changes, and information dissemination accuracy, this study quantitatively evaluates the effectiveness of AIGC in online public opinion management.



2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

This study further examines how AIGC utilizes data-driven approaches and algorithmic optimization to realize dynamic perception, intelligent decision-making, and precise intervention in the evolution of online public sentiment during the governance process. It ultimately reveals the intrinsic logic and operational mechanisms of AIGC empowering online public opinion governance.

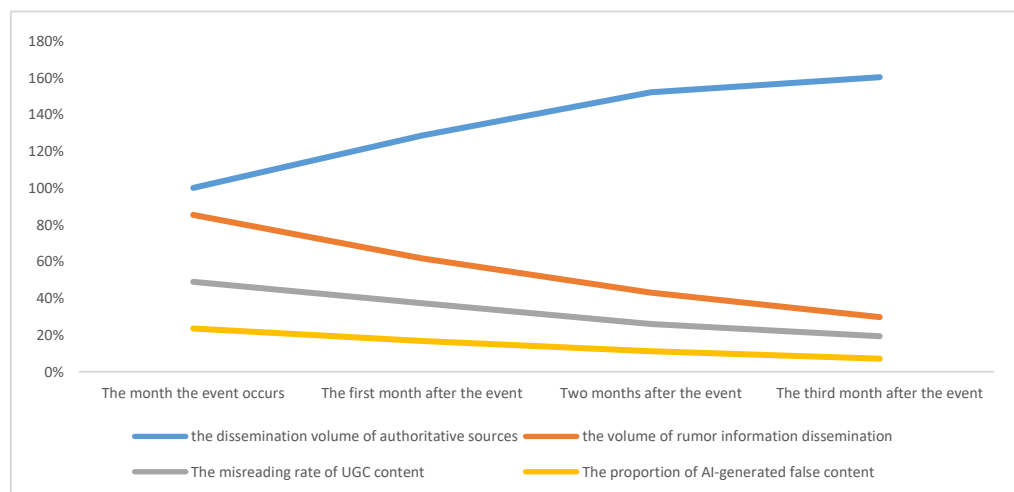
4. RESULT ANALYSIS

Grounded in Event System Theory (EST), the analysis framework for the "Ailao Mountain" incident is constructed from three dimensions: intensity, temporality, and spatiality. Intensively, public attitudes exhibit high levels of concern, participation, and information demand. The novelty, disruptiveness, and significance of the incident constitute a three-dimensional driving model for sustained attention, which demonstrates a significant positive correlation with the intensity of information demand and the public opinion cycle. Temporally, discussion topics have evolved from the event development process to the stages of accountability and ecological protection. There are significant differences in the focus of attention on themes across stages. This evolutionary process can be divided into three phases: the progress tracking phase, the responsibility definition phase, and the ecological reflection phase. In these three phases, the concentration of issues shows a strong correlation with the passage of time, reflecting the structural characteristics of dynamic evolution. Spatially, the overall emotional tendency is dominated by negative emotions, interwoven with doubt and anxiety. However, this negative tone remains consistent across the entire spatial scope and is further reinforced as the diffusion range expands.

4.1 Intensity Attributes: Public attitudes exhibit high levels of concern, participation, and information demand

Figure 4

Comparison before and after AIGC empowers source governance





2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

Grounded in Event System Theory (EST), the public's "high attention, high participation, and high information demand" towards corporate emergencies collectively constitute a dynamic public opinion dissemination system. The core of this dynamic system resides in the interaction between the "communication subsystem" and the "public subsystem". Specifically, the "communication subsystem" refers to the mechanisms of information generation, transmission, and diffusion, while the "public subsystem" denotes how social groups receive, interpret, and respond to such information. These three dimensions (i.e., high attention, high participation, and high information demand) jointly drive the generation, development, and evolution of public opinion.

Information flow driven by high attention spreads extensively across social platforms, media outlets, and other communication scenarios, creating an information explosion scenario. This scenario facilitates the transformation of the public from passive recipients to active information producers. User-Generated Content (UGC) has emerged as a key source of public sentiment dissemination, expanding the scope of information dissemination while introducing misinformation risks.

The public's strong demand for authoritative information serves as a key driver for corporate reputation management, prompting enterprises to adopt targeted strategies at two levels—authoritative information supply and communication order maintenance—to effectively address the "intensity attributes" brought by emergencies. On one hand, the proportion of AIGC-generated false content gradually declined as corporate emergencies evolved, dropping from 0.235% in the initial event stage to 0.071% by the third month. This decline is attributable to enterprises' adoption of AIGC technologies featuring "content traceability" and "misinformation detection", which effectively curbed misinformation dissemination.

On the other hand, the dissemination of rumor-related information concerning corporate emergencies dropped from 85.30% to 0.297%, showing an overall downward trend. Although the initial proportion was relatively high, its decline rate exhibits a notable lag compared to that of misinterpreted UGC-related rumors. This suggests that enterprises should prioritize enhancing the application of AIGC technology in public opinion management when responding to emergencies, particularly its capability in blocking misinformation. Meanwhile, efforts should be made to enhance the effectiveness of targeted interpretation for UGC.

With AIGC-generated dynamic reports, visualized data, and personalized interpretations, the dissemination of authoritative information sources rose from 100% to 160.2%. As corporate emergencies evolve, AIGC technology's core value in "authoritative information supply" has become increasingly prominent, enabling enterprises to achieve precise and context-aware dissemination of authoritative information. This phenomenon further reshapes the "intensity attribute" of the communication ecology by leveraging "authoritative information dominance". Consequently, AIGC technology amplifies the role of enterprises' "authority subsystem" in constructing an "authoritative information matrix", thereby realizing a paradigm shift in public opinion management from the traditional "passive response" to proactive "active guidance."



2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

early warning-handling".

The responsibility determination process follows a progressive development timeline: it begins with the public questioning and reporting misinformation in the initial stage, proceeds to the intermediate stage of interaction and negotiation between enterprises and government departments, and ultimately evolves into a cyclical accountability flow from criticism to apology. This process realizes comprehensive problem-solving and clarifies responsibility assignment.

Event System Theory reveals that the timing and speed of enterprises' responses to emergencies, as well as the intervention sequence of other stakeholders (e.g., governments and individuals), exert a significant impact on the development path and ultimate direction of public opinion. This has improved the cross-platform traceability integrity of AIGC technology by 131.3%, facilitating the construction of a "stakeholder behavior timeline" to accurately identify temporal discrepancies at key nodes such as the "mining license- reporting process".

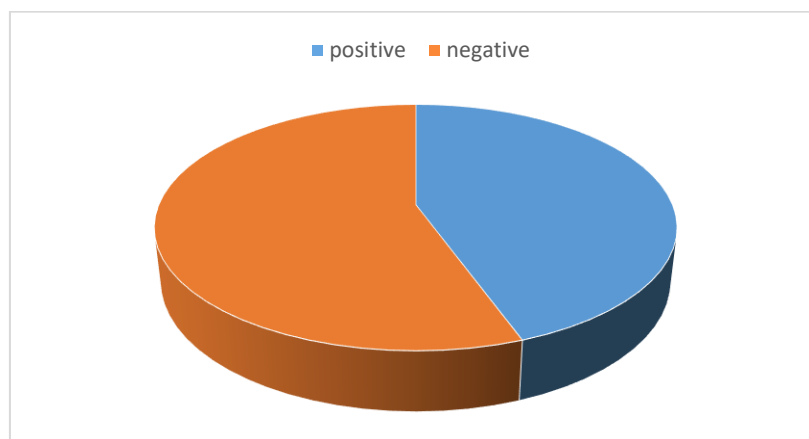
Ecological issues exhibit a unique time-lag characteristic, ranging from immediate controversies triggered by "mineral extraction" to long-term concerns regarding "species protection", which shapes the temporal sequence of public opinion development. Meanwhile, AIGC technology has shortened the duration of negative public sentiment peaks by 61.1%, diverting public attention from immediate news about excessive mineral extraction to the long-term significance of ecological stability in nature reserves.

Within the EST framework, the paradox between time pressure and decision quality can be resolved by introducing an AIGC-constructed ecological impact prediction model. This innovative approach provides empirical support for online public opinion management, effectively preventing environmental protection issues from being marginalized due to public attention shifts and ensuring sustained focus on and effective governance of this critical topic.

4.3 Spatial Attributes: The overall emotional tendency is predominantly negative, interwoven with doubt and anxiety

Figure 7

Proportion of Positive and Negative Sentiment Words



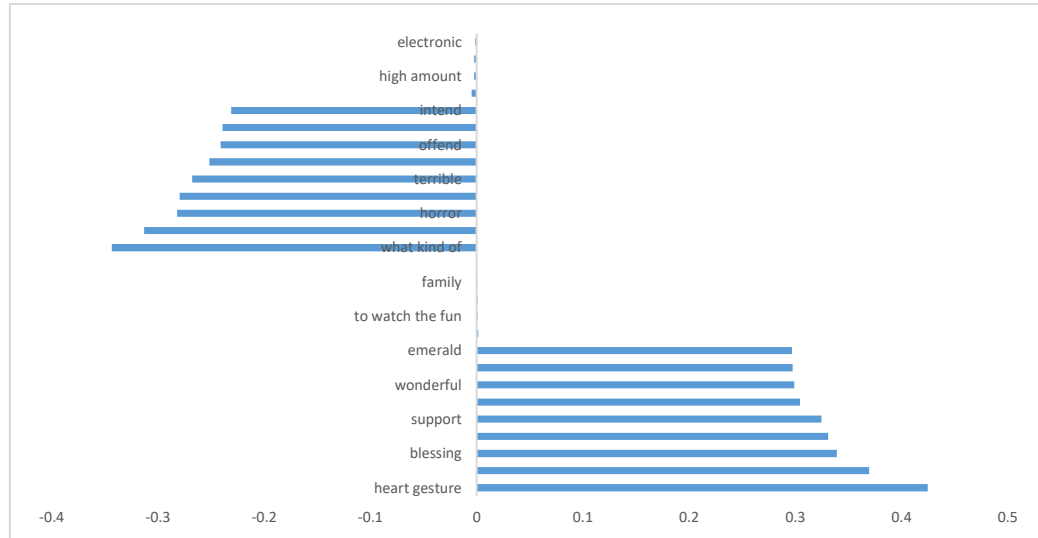


2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

Figure 8

Emotional Value Distribution Chart



The Emotional Space of Public Sentiment triggered by corporate emergencies is primarily characterized by negative polarization, where negative emotional vocabulary dominates semantic network analysis.

From the perspective of spatial attributes, high-intensity negative emotions such as "fear" and "disgust" spread extensively across geographical boundaries through the "weak-tie mechanism" typical of social media. This generates a resonant "cascading effect," revealing the unique emotional diffusion pattern in virtual social networks and its potential socio-psychological impacts.

Spatial diffusion exhibits a "core-periphery" pattern: negative emotions centered on "life-threatening" radiate outward, encompassing expressions of doubt such as "what exactly" and anxious expressions like "intention." Additionally, spatial proximity strengthens emotional resonance. Although spatial markers such as "region" and "family" are emotionally neutral, they act as carriers for the dissemination of negative emotions.

The spatial dimension of Event System Theory (EST) indicates that different types of enterprises exhibit significant regional differences in negative emotions expressed in public sentiment during emergencies. Terms such as "fraud" and "deception" reflect questioning emotions, which are concentrated in spaces like official announcement comment sections, forming a "doubt aggregation zone"; meanwhile, anxious sentiments such as "stolen" and "terrifying" attach to risk narrative texts, creating an "anxiety enclave" under specific topic tags.

These two types of emotions are connected via technological intermediaries such as "connections" and "electronics," forming a "doubt-anxiety complex" that enables negative emotions to maintain local intensity while retaining global mobility. This technological cyclic mechanism facilitates the transformation of the corporate emergency public opinion environment from "negative dominance" to "multidimensional balance."



2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

5. SUMMARY AND DISCUSSION

5.1 Summary

With the in-depth penetration of digital technology in the communication field, enterprises are confronted with online public opinion emergencies exhibiting three core characteristics: "information fragmentation, emotional polarization, and cross-platform diffusion." This evolving trend poses challenges to the effectiveness of traditional human-led governance mechanisms. Correspondingly, traditional response strategies are often constrained by inherent flaws, namely "delayed responses, insufficient accuracy, and weak cross-platform coordination," rendering them inadequate to address the complex and dynamic online public opinion environment. There is an urgent need for innovative governance approaches to adapt to its dynamic evolutionary patterns.

Endowed with capabilities in natural language processing, affective computing, and multimodal data mining, Artificial Intelligence Generated Content (AIGC) is increasingly recognized as a key enabling tool for enterprises to conduct public opinion management and governance. Taking Event System Theory (EST) as the analytical framework, this study utilizes multi-source empirical data to conduct an in-depth analysis of the "Ailao Mountain" incident. Through Latent Dirichlet Allocation (LDA) topic modeling, it identifies the core issues of the incident and quantifies public emotional dynamics via sentiment analysis. Additionally, by establishing control and experimental groups to compare the effects of different intervention strategies, this series of analyses reveals the application value and practical paradigm of AIGC in public opinion management from the perspective of the "event-technology-subject" interaction.

The core conclusions are as follows:

First, within the EST framework, the three dimensions of "intensity, temporality, and spatiality" are traditionally treated as passive responsive objective indicators in public opinion management. However, AIGC's technological capabilities enable these attributes to be transformed into "quantifiable, controllable, and responsive" governance targets in public opinion management, thereby establishing a two-way interactive adaptive mechanism. The core of this adaptive logic is that AIGC incorporates "technological agency" into EST, promoting a shift in public opinion management from "experience-driven" to "data-driven."

Second, AIGC's value in public opinion management is not merely a single technological application, but rather resides in the integration of its "immediate cooling" and "long-term navigation" functions. This integration forms a comprehensive public opinion governance system covering the entire process from "source-process-outcome," overcoming the fundamental limitations of traditional manual management strategies and further achieving more efficient and precise control and guidance of public sentiment. The "cooling" function focuses on risk management during the public opinion outbreak phase, while the "navigation" function emphasizes strategic guidance throughout the entire public sentiment cycle. The synergy between the two not only enables AIGC to act as an effective "public opinion fire extinguisher" but also serves as a precise "governance navigator." This symbolizes a paradigm shift in corporate public opinion management strategies from focusing on "crisis handling" to emphasizing "risk prevention and control."



2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

Third, AIGC's technological effectiveness has inherent limitations. Ignoring this inherent characteristic can easily lead to the cognitive trap of "technological determinism." This indicates that to achieve the effective application and sustainable development of AIGC in public opinion management, it is essential to establish a dual-driven development model characterized by "technological tools and human values." This foundation is crucial for the long-term prosperity of AIGC-based public opinion governance.

In the future, with the evolution of AIGC technology—particularly its iterations in "multimodal sentiment analysis" and "real-time strategy generation"—the strategic direction of corporate public opinion management needs to advance toward tripartite collaboration among "event attributes, technological capabilities, and stakeholder demands." This aims to move beyond mere crisis control to the higher goals of "joint risk prevention" and "trust co-construction," providing systematic theoretical guidance and operational guidelines for enterprises facing complex crisis situations in the digital era.

5.2 Discussion

5.2.1 Precise control over the sources of risk information

Misreporting or distortion of risk information sources is one of the core factors triggering the sustained dissemination of social media public opinion in response to corporate emergencies. In this context, Artificial Intelligence Generated Content (AIGC) exhibits unique dual-layer technological potential in "misinformation detection" and "authoritative information source construction," thereby establishing an operational system for public opinion management that accurately filters risks at the source.

Essentially, AIGC converts the intensity attributes of events into targeted governance objectives, promoting in-depth integration of technological advantages and information source quality to effectively respond to and manage public opinion crises. From a theoretical perspective, the AIGC system can directly govern the initial sources of risk information, breaking away from the subjective judgment mode relying on traditional manual review. Correspondingly, event intensity determines the matching level of information demand. AIGC achieves "differentiated source governance" in the intensity dimension, a process that verifies the viewpoint proposed by Zhou Hui and Guo Hongyou concerning the "technical identification + content generation" dual-drive approach for large language model security governance. This introduces a technological innovation perspective to the research on "source credibility" in crisis communication.

This perspective transcends the limitations of traditional research that solely focuses on how source identity influences credibility, and delves into how technological means enhance content quality to improve source credibility. As a key tool for technological empowerment, AIGC can significantly improve enterprises' efficiency in managing online public opinion related to emergencies, providing innovative solutions and practical paths for this field.

From a practical perspective, AIGC provides a practicable paradigm for source risk governance in enterprise event management. On one hand, establishing the adaptability between AIGC source governance and intensity attributes adheres to the core principles of the PDRR system for intelligent defense and management of online public



2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

opinion proposed by Wei Junbin, which emphasizes that risk assessment levels directly determine the priority and effectiveness of governance strategies and resource allocation.

On the other hand, to address the technical limitations inherent in AIGC source governance, enterprises must not only utilize AIGC technology but also establish a "manual review mechanism"—for instance, forming dedicated teams to conduct secondary verification on high-risk information identified by AIGC. This approach aligns with the public opinion management strategy proposed by Liu Lulu and Lin Baihong in their analysis of the "Dongfang Zhenxuan Essay Incident," which emphasizes the balanced practice principle of prioritizing both "technological empowerment" and "human calibration."

5.2.2 Block the dissemination of risk information

The cross-platform and rapid dissemination mechanism of risk information stands as a core factor contributing to corporate public opinion dissonance during public emergencies. This phenomenon enables Artificial Intelligence Generated Content (AIGC) to play a central role in full-temporal prediction and multi-spatial tracing, shifting governance strategies from traditional passive defense to a proactive "active prediction-precise intervention" diffusion management framework.

The core of this framework lies in AIGC's integration of temporal and spatial attributes into a diffusion-control "coordinate system." From a theoretical innovation perspective, AIGC technology has transformed risk information diffusion blocking strategies from the traditional "empirical interception" model to a "data-driven paradigm," thereby deepening and expanding the "spatiotemporal governance" theory in crisis communication.

In the temporal dimension, Event System Theory (EST) emphasizes the inherent correlation between event timing and governance opportunities (Liu Dong & Liu Jun, 2017). Building on this foundation, AIGC innovatively introduces a public sentiment lifecycle prediction model, converting the abstract correlations in EST into specific, actionable temporal nodes. This enables effective identification and intervention at critical stages of public sentiment evolution—a process that verifies the viewpoint proposed by Huang Chuxin and He Wenwen, who emphasize that public opinion governance strategies still prioritize "full-cycle dynamic response" in the AIGC era. This insight incorporates a technology-driven time-compression mechanism into theories of public sentiment temporal evolution.

In contrast, traditional research paradigms often assume a fixed developmental pattern for public opinion. However, AIGC intervention can precisely regulate and shorten the outbreak period of enterprise emergency-induced online public sentiment, exerting a significant impact on the inherent temporal sequence of public opinion development.

In the spatial dimension, AIGC has innovatively proposed a cross-platform risk information diffusion governance strategy and established a multi-domain collaborative interruption theoretical framework. The spatial attribute highlights a direct proportional relationship between event diffusion scope and impact intensity, which drives AIGC's application in cross-platform data analysis and personalized content



2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

adaptation, while geographically containing risk information dissemination.

This strategy addresses the governance challenge raised by Yi Chenhe and Zhou Jiajin regarding "ChatGPT-like technologies exacerbating cross-platform public opinion ignition risks." It further enriches the "public opinion spatial diffusion theory" by introducing a "technology-driven spatial isolation mechanism," providing technical means for spatial isolation in public sentiment management.

From a practical breakthrough perspective, enterprises leverage AIGC to construct a full-lifecycle, cross-scenario diffusion prevention and control system—dubbed the "full-cycle cross-domain" diffusion blocking system. Based on Spatial Network Theory, an "AIGC Cross-Platform Collaborative Governance Network Architecture" has been developed and deployed to realize effective resource and information integration and sharing across platforms, enhancing overall governance efficiency.

This aligns with the practical approach advocated by Sun Na and Bao Yiming regarding "generative AI and cross-platform security prevention and control," which effectively addresses and resolves security vulnerabilities inherent in the traditional "single-platform governance" model.

5.2.3 Establish collaborative governance among multiple stakeholders

The management of online public opinion regarding corporate emergencies is a multi-dimensional and interdisciplinary complex task, involving collaborative efforts from multiple stakeholders including enterprises, platforms, the public, and professional organizations. The traditional governance model suffers from insufficient information circulation among stakeholders and ambiguous responsibility demarcation, which severely impede the enhancement of governance efficiency.

From this perspective, Artificial Intelligence Generated Content (AIGC) acts as an intermediary for information integration, responsibility matching, and value calibration, constructing a collaborative governance ecosystem involving diverse stakeholders. The core of this mechanism lies in AIGC's role in eliminating governance silos among entities, promoting the coordinated development of technology, subjects, and values, and realizing multi-dimensional improvement of comprehensive governance effectiveness.

From the perspective of theoretical reconstruction, the emergence of AIGC has driven enterprises to transform their online public opinion management model for emergencies from the traditional "single-entity" responsibility model to an "ecosystem-oriented" governance strategy. This transformation emphasizes the integration of a collaborative governance theoretical framework involving multiple participants. It is noteworthy that previous research on public opinion governance primarily focused on single entities, whether enterprises or governments. This study innovatively adopts AIGC as an intermediary variable to facilitate collaborative interaction among multiple entities, which validates the perspective proposed by Liu Lulu and Lin Baihong that "within the framework of Event System Theory, public opinion governance should rely on 'interactions among diverse subjects'." Moreover, this approach adds a new dimension of "subject collaboration mechanism under technological mediation" to the collaborative governance theory.



2025 ANPOR-APCA Annual Conference

November 4-7, Southeast Bangkok University, Bangkok & Amari Hotel, Pattaya, THAILAND

In fact, traditional collaborative governance models often rely on inefficient methods such as meeting negotiations and document transmission. In contrast, AIGC technology enables real-time data sharing and intelligent solution generation, thereby facilitating highly efficient collaboration and interaction among all participants.

From the implementation perspective, constructing a multi-stakeholder collaborative governance ecosystem should address three core issues: clarifying the "intermediary role of AIGC", establishing a "diverse entity responsibility list", and strengthening the "calibration of humanistic values". This aligns with the consistent practical logic of Yan Daocheng and Shen Dingzhou, who explored sentiment analysis technology to understand public demands and realize the harmonious unification of "technological efficiency" and "humanistic values".

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