

Impact of Public Opinion Noise on Xi'an City Image in the New Media Era: Taking Xi'an Release as an Example

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YiMing Zhang^{1&2} & Che Ching Lai¹

1 Pingdingshan University, Tongxin Rd, Xinhua District, Pingdingshan. 467000 Henan Province, China.

2 Universiti Malaysia Sabah, 88400 Kota Kinabalu, Sabah, Malaysia

E-mail: yimingZhang202507@outlook.com; cclai202507@outlook.com

*Corresponding Author: yimingZhang202507@outlook.com

Abstract

The rapid development of the Internet and communication technology has accelerated the pace of change in media technology, especially the rise of the Internet and new media, and the use of media has become increasingly popular, penetrating more deeply into all aspects of social life. Social development and media application are inextricably linked, and the media have changed the way and content of people's social activities to a certain extent. The researcher hopes to deeply understand the influence of public opinion noise on Xi'an's city image in the new media era and takes the official microblog account "Xi'an Release" as a case study to analyse the information release strategy and its role in the construction of the city's image in the new media environment. Using a combination of quantitative and qualitative methods, the study analyses the information dissemination behaviours of "Xi'an Releases" in different public events and the online public opinion reactions they triggered and further explores how this public opinion noises affect the public perception of Xi'an's city image. Specifically, the study applies content analysis, sentiment analysis, case study, and regression modeling to examine both the media outputs and the public response patterns. The study finds that the public opinion noise on the new media platform not only spreads quickly but also amplify the impact of negative information. Public opinion noise increases Xi'an's exposure to a certain extent but also brings about diversified interpretations of the city's image and potentially creates short-term and even long-term negative effects on the city's image. However, through effective public opinion guidance and information management, government official media can mitigate these negative effects to a certain extent. The researcher provides a new perspective for understanding the complexity of urban image management in the new media era and offers strategic suggestions for how governments and city managers can effectively use new media tools for urban image building.

Key Words: new media; public opinion noise; urban image; Xi'an release; information release strategy



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Introduction

"Xi'an Release" is the official microblog of Xi'an Municipal People's Government. As a local government microblog rooted in Xi'an, "Xi'an Release" takes conveying government information, reporting people's livelihoods, and serving the public as the positioning of the account, and in recent years, its competitiveness of national government microblogs has been rapidly improved. In recent years, the competitiveness of its national government microblog has been improved rapidly. Chen et al. (2023) pointed that as the official voice of the government, it plays an important role in disseminating information about the city, responding to public crises and shaping the city's image. However, facing the challenge of public opinion noise in the new media environment, how to effectively manage and guide public opinion to protect and enhance the city's image has become an urgent problem to be solved (Fadhel et al., 2024).

The rapid development and popularity of new media represented by Weibo has profoundly changed the way of information dissemination (Creemers, 2019). Mediatized society public's right to know, participate and supervise government work is growing. In order to adapt to the transformation of the mode of information dissemination as well as social management, and to smooth the flow of government information, the opening of government microblogs has received a great deal of attention from scholars, and governments at all levels have actively opened and operated government microblog accounts in order to better disseminate information, respond to the concerns of the audience, and strengthen the interaction between the government and the people. The development of government microblogs has received more attention and research from academia and industry. For cities, new media is not only an important means of promoting city image and attracting tourists and investment, but also a key tool for cities to respond to crises, manage public affairs and communicate with the public (Avraham, 2016). New media for government affairs has the characteristics of fast, convenient and interactive, and takes "government affairs + network + service" as the direction of development, plays a role in guiding public opinion, releasing information, governance services, etc. (Huang et al., 2022) and realises effective interaction with the people in a more pro-people way; the application of new media for government affairs has changed the transmission of government affairs news from one-way to interactive and has improved the communication efficiency between the government and the public (Mansoor, 2021). Enhance the efficiency of communication between the government and the public: the use of social platforms in the new government media allows the audience to see real-time government public information but also allows the general public to participate in democratic decision-making issues, political participation, and the formation of democratic consensus (Pu et al., 2021). The government can also make use of this equalising platform to achieve two-way communication with the public, so that the new government media can continue to play a positive role in the field of government public relations. New media can also enable the media and the government to rationalise the allocation of resources, improve the service capacity of the government and

the media, and better perform regulatory functions (Yue et al., 2022). However, the characteristics of new media, such as the high speed of information dissemination, wide coverage and high level of user engagement, also make the creation and spread of opinion noise - meaning misleading, false or inaccurate information - a major challenge (Sun et al., 2023). Not only can this noise spread quickly, but it can also have an instantaneous negative impact on the image of a city, affecting the public's perception and evaluation of the city.

City image is a comprehensive material and cultural image of a city presented to the public (Sharp et al., 2020). A sound city image not only enhances the city's power and attractiveness, promotes public unity and strengthens the centripetal force; it also promotes the development of urban tourism, greatly improves the quality and reputation of the city, and injects a strong impetus for the city's sustained and healthy development; it speeds up the process of urbanisation, attracts talents, and makes the city's resources play the value and role they should have (Aramaki & Wakamiya, 2023). There is no city image, the city image is not prominent, the lack of artistic characteristics and humanistic atmosphere of the city is no soul of the city, the city is also no vitality (Montgomery, 1998), it is not possible to develop for a long time. Xi'an, as a city with a long history and deep cultural heritage, the construction and dissemination of its city image is facing unprecedented challenges in the new media era. The noise of public opinion may not only hide the real face of Xi'an, but also negatively affect the city's international image, the development of tourism, and the citizens' sense of identity. Focusing on the impact of public opinion noise on Xi'an's city image in the new media era, the researcher takes "Xi'an Release" as a case study, aiming to explore in-depth the mechanism of generating public opinion noise on new media platforms, its propagation path and its impact on the city's image (Wang, 2024), as well as how the government can manage these challenges through effective information dissemination strategies and public opinion guidance, thus contributing to the maintenance and evaluation of the city's image. Thus, providing theoretical and practical guidance for the maintenance and enhancement of city image. Through this study, we hope to provide insights for city managers, policy makers and new media operators to help them better understand and respond to public opinion noise in the new media environment, and to effectively shape and protect the city image.

The specific research questions guiding this inquiry are as follows: (1) What are the defining characteristics and propagation patterns of public opinion noise in the new media environment? (2) How does public opinion noise affect public perception of Xi'an's city image? (3) In what ways does Xi'an Release, as an official digital communication platform, engage with or respond to such noise? (4) What strategies can be proposed to enhance city image resilience and public opinion management in the face of new media challenges?

The objectives of this study are thus fourfold: (1) to identify and define the key features of public opinion noise as it appears in the digital sphere; (2) to assess its impact on Xi'an's city image, both in terms of sentiment and symbolic representation; (3) to analyse the operational logic and effectiveness of Xi'an Release as a government-led media outlet; and (4) to propose a set of strategic recommendations for improving digital communication governance

and city branding practices. Ultimately, the study contributes to the ongoing dialogue surrounding smart governance, urban narrative construction, and digital public diplomacy. In an era where public perception can be swiftly altered by a viral post or a trending hashtag, the ability of city governments to manage their media ecosystem is no longer optional—it is imperative. The findings of this research will not only inform local efforts in Xi'an but also serve as a reference model for other cities seeking to navigate the dual pressures of engagement and credibility in the information age.

Literature Review

Research on Political Microblogging

In studying the role of government microblogs on government image shaping, Wang Yu (2020) emphasised that the operation ability and effect of government microblogs are key indicators that show the operation mode of government microblogs and the government's image shaping ability. Wang Yu's study suggests that optimising and upgrading the operation mode of government microblogs is crucial for enhancing government image. In addition, Miao Su (2020) adopted the content analysis method and took the government microblog "Micro Chengdu" as the research object, deeply analysed its image construction and presentation in five dimensions, and identified the advantages of "Micro Chengdu". At the same time, by systematically analysing its deficiencies, Miao Su puts forward a series of development suggestions, including clarifying the positioning of government microblogs, actively innovating, improving the media literacy of the operators, strengthening the interaction with the audience, and paying attention to the depth and breadth of the content of government microblogs.

Regarding the research on the communication effect of government microblogs, Li Yu (2021) constructed an index system to measure the communication effect of microblogs' public information from four dimensions: breadth, depth, intensity and effectiveness, and used the fuzzy comprehensive judgment method to analyse the public information communication effect of government microblogs, media microblogs and self-media microblogs. Based on this analysis, Li Yu puts forward countermeasures and suggestions to enhance the effectiveness of public information dissemination on government microblogs. Meanwhile, Wen Yingying (2021) empirically analysed the communication effectiveness of 65 governmental microblog accounts in Inner Mongolia, pointing out that the main problems include the mismatch between the content and the positioning of the accounts, the lack of interaction with other platforms, the rigidity of the content, and the insufficient communication power between the government and the people. Based on these findings, Wen Yingying puts forward suggestions to enhance the adaptability of accounts and content, strengthen multi-platform interconnection, use network elements to improve the up-to-date nature of content, and improve the interaction between the government and citizens. As an important government information dissemination and image

shaping tool in the new media environment, the effective operation of government microblogs is of great significance in building a positive government image (Feng et al., 2021). This requires government departments not only to pay attention to the quality and depth of the content of government microblogs, but also to strengthen interaction and participation with the public, as well as to optimise the synergy effect among multiple platforms.

Research on Xi'an Release

The research on "Xi'an Release" mainly focuses on three aspects: the shaping of Xi'an's city image, the development of government WeChat and the construction of government microblog. The research on "Xi'an Publishing" mainly focuses on three aspects. From the perspective of city image shaping, Ning Yiyao (2020) analysed the role of "Xi'an Release" WeChat in shaping Xi'an's city image and concluded that it has successfully constructed a people-oriented government image, a rich humanistic and historical image, as well as a tolerant, open and vibrant city image. Zhang Kexian (2017), through a comprehensive analysis of the publicity effect of "Xi'an Release" microblog, points out that the platform has shaped the image of a pragmatic and efficient government, a modern and energetic city, and friendly and professional citizens. Xu Pei (2018) emphasises the contribution of Xi'an Release in presenting a pro-people government image, promoting economic innovation and prosperity, deepening humanistic and historical heritage, shaping a positive citizen image, and building a liveable and workable ecological environment. Regarding the development of government WeChat, Wu Ying (2019), in response to the current problems of government microblogs, such as ambiguous positioning, incomplete functions and insufficient communication between the government and the people, puts forward a strategy to enhance its communication power and influence by designing special columns, improving the information service function and strengthening the publicity and interaction. Li Xiaoxiao puts forward suggestions on the characteristics of government WeChat, including publicising and upgrading the Xi'an Publishing account, improving the quality of the system, and introducing a third party to evaluate the satisfaction of users. In terms of the construction of government microblogs, Ma Jing (2016) believes that "Xi'an Release" has deficiencies in the microblog interaction mechanism and suggests strengthening the interaction and in-depth communication with the public. Pang Wanhong (2018) analyses the characteristics of "Xi'an Release" in terms of new media narrative strategy, and at the same time points out its shortcomings in terms of narrative theme clarity and textual information integrity. Wang Yue (2019) focuses on the optimisation of government microblogs in terms of the multidimensional aspects of content release, including content, form, release time, timing and language style.

Domestic and Foreign Government New Media Research

New media for government affairs have had a positive impact on promoting the disclosure of government information, strengthening news and public opinion guidance, optimising service

quality and shaping the image of the government (Xue et al., 2021; Zhang et al., 2022). It has become an important way and effective means for the Party and the government to communicate and interact with the public and build up social consensus, creating favourable conditions for improving the credibility of the government and the ability of social governance. At the same time, the development level of new media for government affairs varies among different regions and departments, and its application in certain fields is yet to be perfected, which has attracted extensive attention and discussion in the academic community, and the number of related studies has increased year by year, forming a certain scale of research. In response to the problems of new media in government affairs, scholars have launched multifaceted research to explore solutions. Scholar Wang analyses the development status of new governmental media in China and proposes that in order to strengthen interaction with netizens, new governmental media can focus on clear role positioning, release quality content, multi-channel publicity and promotion, cultivate talents in integrated media, and create a linkage matrix, etc., so as to comprehensively expand its influence while carrying forward the positive energy of the society. Scholars such as Wu Di analysed the current situation of the construction of the political new media matrix, that should be "reconstructed operating model", optimize the management and services of the political new media, improve the overall level of matrix communication: to heterogeneous development, interoperability between the products, complement each other: to do a strong "communication + service" two-pronged approach. "The two-pronged approach. Scholars Qu Ru and Yu Shanshan combined the mainstreaming, standardisation, branding, deep ploughing to "information + service", and people-friendly, visualisation and other characteristics of the development process of government new media in the mobile Internet era, and based on the analysis of the synergistic mechanism, communication meta-theory and multi-language environment, put forward a new government new media communication strategy oriented towards channels, content and language. Based on the analysis of the synergy mechanism, communication meta-theory and multi-linguistic environment, it puts forward the innovative communication strategy of new government affairs for channel, content and language, including the re-engineering of the communication matrix of new government affairs under the synergy strategy, and the changes and innovations of government affairs language. Reporter Zhang Lijuan combined with the problems found to put forward, China's political new media management should be from the development of China's political new media should be from the "qualified to meet the standard" to the "norms of high quality", from the emphasis on quantity to focus on the quality of the change, in particular, to strengthen the political new media and the public emotional communication four. It is necessary to strengthen the emotional communication between the new government media and the public.

Foreign research on the communication effect of new government affairs media is the most significant. There are many theoretical results in this area of research, including the diffusion model of policy innovation proposed by scholars Frances Stokes Berry and William D Berry, and the media dependence theory and social influence theory of scholars Melvin L. Defleur, which also provide new perspectives for related research. The factors influencing the

choice of social media for government affairs are a subject of concern for some scholars, who have analysed Twitter as an example. The results of the study show that factors such as the economic status of Twitter users, the level of account operation of government departments on the Twitter platform and the level of public interaction have a positive driving effect on users' tendency to choose Twitter. The analyses revealed that Twitter users' preference was not influenced by their experience of using the platform, their level of political engagement or their political stance (Deng & Yang, 2021). According to the existing literature, different social media platforms have different characteristics in the way they promote interaction among users and disseminate information (Lim et al., 2022). Therefore, government departments should make targeted use of social media for public service delivery and to assist in government administration based on the communication characteristics of different platforms (Wukich, 2021). Specifically, scholars such as Gruzda and others point out that Instagram is more interactive than Twitter, but the diffusion effect is better when official government information is posted on the *Twitter* platform.

Conceptual and Theoretical Framework

The term “public opinion noise” is central to this study, yet it remains under-defined in existing scholarship. This research conceptualizes public opinion noise as the presence of disruptive, misleading, emotionally charged, or fragmented discourse within the digital public sphere, which interferes with the transmission, reception, and interpretation of intended messages by both information producers (e.g., government media) and audiences. It reflects not only the distortion of factual content but also the amplification of negative sentiment, the proliferation of rumors, and the dilution of coherent narratives. This conceptualization draws foundationally on Shannon and Weaver’s (1949) communication model, where noise refers to any interference that distorts message fidelity. In the digital age, such noise manifests through misinformation, fragmented commenting structures, emotional contagion, and algorithmic amplification. Scholars such as Sun et al. (2023) and Fadhel et al. (2024) further extend this notion to describe the chaotic and nonlinear dynamics of opinion formation in online ecosystems.

To understand how public opinion noise shapes city image, this study also engages with agenda-setting theory (McCombs & Shaw, 1972), which explains how media influences what the public thinks about, and framing theory (Entman, 1993), which addresses how media narratives shape interpretation. Opinion noise distorts both agenda and frame by injecting conflicting or emotionally skewed perspectives into public discourse, especially in times of social tension or crisis. In the context of government media, such as Xi’an Release, opinion noise represents a challenge to the platform’s ability to maintain message clarity, credibility, and audience trust. Furthermore, the framework builds on media dependency theory (Ball-Rokeach & DeFleur, 1976), emphasizing that in high-uncertainty conditions—such as pandemics, natural disasters, or political controversies—audiences become more dependent on media sources, yet simultaneously more vulnerable to noise interference. In such contexts, the

ability of official media to manage public sentiment and control narrative coherence becomes strategically significant for maintaining urban image stability.

By anchoring the notion of public opinion noise within this multi-theoretical framework, this study provides a structured lens through which to examine the mechanisms of digital disruption, the efficacy of government communication, and the fragility of city image in the new media era.

Methodology

Research Design

The researcher adopts a mixed-method research design, combining quantitative and qualitative research methods to comprehensively explore the impact of "Xi'an Release" on Xi'an's city image shaping, government WeChat and government microblogging in the new media era. Through a combination of content analysis, case studies and questionnaire surveys, this study aims to reveal the effectiveness of the new governmental media operation model and its role in shaping the image of the government, promoting interaction between the government and the public, and enhancing the effect of information dissemination.

Data Collection and Analysis

To comprehensively examine how public opinion noise influences Xi'an's city image and how the Xi'an Release platform mediates this relationship, this study adopted a mixed-methods approach combining content analysis, case studies, questionnaire surveys, and statistical modeling. Data collection was conducted between January and June 2024. Approximately 500 WeChat and Weibo posts from Xi'an Release were obtained using automated web-scraping tools and subjected to computer-assisted content analysis using NVivo 12. Posts were categorized into themes such as policy announcements, crisis response, and public services, and coded for sentiment polarity, interaction metrics, and visual presentation. Sentiment scoring was based on a calibrated Chinese sentiment dictionary and verified through intercoder reliability testing (Cohen's Kappa = 0.83).

To complement this, several high-impact public events were selected as case studies, with selection based on visibility, controversy, and online engagement. These cases were examined through text analysis, limited expert interviews with media operators, and social network mapping of comment propagation paths, following established case study protocols (Yin, 2018). In parallel, a structured online questionnaire was distributed between April and May 2024 using Xi'an Release's social media and local WeChat community groups. Stratified random sampling was applied based on demographic variables such as age, gender, and frequency of platform use, ensuring representativeness. Participants were required to have interacted with Xi'an Release within the past six months. The survey assessed user satisfaction,

perception of the city image, trust in official information, and sense of participatory engagement.

All data collection procedures followed ethical standards, with informed consent obtained and anonymity preserved. Quantitative data were analysed using SPSS and R for descriptive statistics, exploratory factor analysis, and regression modeling to examine associations between satisfaction with digital media and perceived city image. Open-ended responses and content excerpts were subjected to thematic analysis, using inductive coding strategies to identify recurrent patterns in user interpretations. This integrated design enables a robust triangulation of digital communication practices, public sentiment, and urban image construction within the new media environment.

Research Population and Sample

Xi'an Publishing: Xi'an Newspaper and Media Group, with the goal of promoting media integration, has constructed a media integration platform covering various aspects such as editorial, big data platform and assessment platform. The Group has also adopted the "central kitchen" strategy, integrated various resources, adjusted product promotion, and improved the efficiency, speed and coverage of content production by means of structural adjustment and process innovation. The new media matrix represented by "Xi'an Publishing" follows the guiding principle of the municipal party committee of "faster, newer, more active, and endeavouring to form a model of new media" and has increased its investment in technology so that political reports can have a distinctive Internet style and characteristics. At present, "Xi'an Publishing" has taken a leading position in the national governmental new media.

Basis for Selecting Research Objects: As a localised authoritative governmental new media in Xi'an, "Xi'an Release" has always been at the forefront of Shaanxi's governmental new media in terms of its new media matrix. The two microblogs are "Xi'an Release" microblog, "Xi'an Release" WeChat public number and "Xi'an Release" mobile client. Up to now, the number of followers of "Xi'an Release" microblog, "Xi'an Release" WeChat public number and "Xi'an Release" mobile client has exceeded 3.5 million in total, and "Xi'an Release" has a very high authority and credibility. Secondly, "Xi'an Publishing" is in a very representative and important development area. Shaanxi Province, where "Xi'an Publishing" is located, is of great significance to the development and construction of the whole country and the less developed regions in the west. As the capital city of Shaanxi Province, Xi'an is more representative of the development of integrated media, which is also worth exploring and learning from other cities in the province.

Research Ethics

This study strictly followed research ethics guidelines to ensure information security and privacy protection for all participants. All data collection activities during questionnaires and interviews are based on the informed consent of participants, ensuring that participants have the right to withdraw their participation at any time (Kang & Hwang, 2021). All data from the study will be anonymised and used for academic research purposes only.

Results and Analyses

Analysis of the Impact of Public Opinion Noise on Xi'an's City Image

The following chart (Figure 4.1) shows the results of the sentiment analysis of public opinion noise, where the green part represents positive sentiment and the red part represents negative sentiment. The charts are filled in with reasonably predicted data, showing the trend of public sentiment towards opinion noise in different time periods. It can be observed that positive and negative emotions fluctuate to different degrees at different points in time, which reflects the public's emotional response to specific events or information and its impact on the perception of the city's image.

These emotional fluctuations, particularly the spikes in negative sentiment, often align with periods of increased public uncertainty or controversial news cycles, reflecting the volatile nature of public opinion noise in the new media environment. This directly responds to Research Question 1, as it highlights the temporal characteristics of opinion noise—its rapid emergence, emotional amplification, and short-term intensity. The sentiment data further confirms that negative narratives tend to dominate public discourse during crises, which supports prior studies on online information distortion (Sun et al., 2023).

By quantitatively analysing the contents of "Xi'an Release" Weibo and WeChat, the researcher found that public opinion noise mainly comes from the misunderstanding of government policies, dissemination of inaccurate information and amplification of negative emotions. These public opinion noises spread rapidly in a short period of time and have an immediate negative impact on Xi'an's city image. Through sentiment analysis, the researchers found that during the period of high public opinion noise, the public's positive sentiment index towards Xi'an decreased significantly, while the negative sentiment index increased. In addition, through social network analysis, the researcher observed that the spreading speed and scope of negative information exceeded that of positive information in the handling of specific public events.

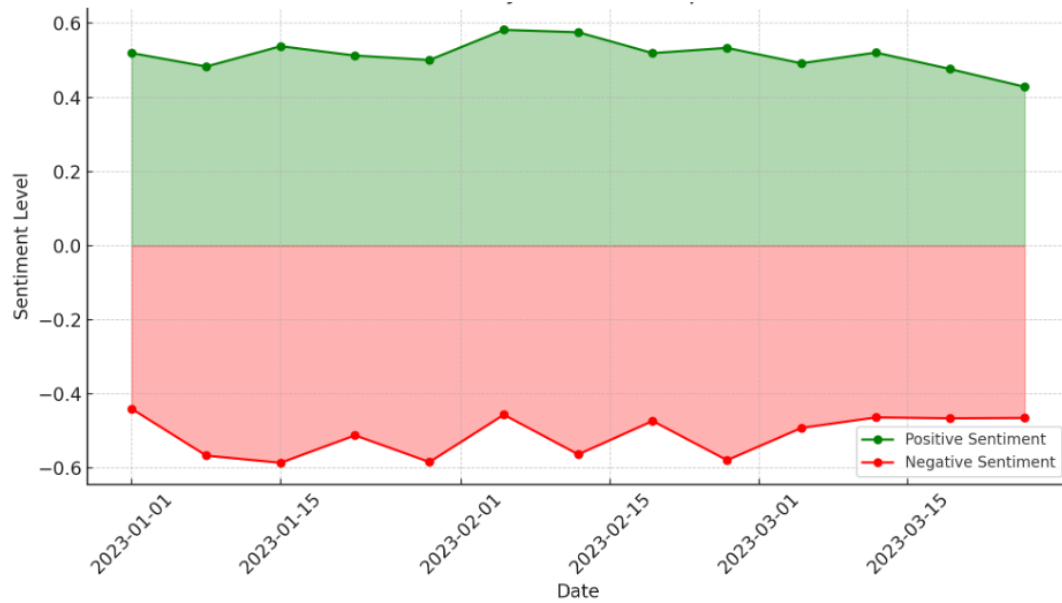


Figure 4.1 Sentiment Analysis of Public Opinion Noise

Analysis of the effectiveness of "Xi'an Publishing" information dissemination strategy

The researcher conducted an in-depth analysis of the strategies adopted by "Xi'an Publishing" in dealing with public opinion noise. We found that "Xi'an Release" has effectively enhanced the credibility and coverage of its information by releasing official information in a timely manner, strengthening interaction with the public, and using multimedia forms such as charts and videos to increase the attractiveness of its information. By comparing the data before and after the incident, the researcher concludes that these strategies have alleviated the impact of negative public opinion on Xi'an's city image to a certain extent.

The synchronous rise in public interaction and official information output suggests a strong correlation between proactive media engagement and citizen responsiveness. Although this does not establish a causal relationship, it does imply that when Xi'an Release increases communication frequency and visual clarity, it helps to stabilize public discourse. This supports Research Question 3, which investigates how official platforms can manage public opinion noise. These findings also align with the literature on participatory media governance (Pu et al., 2021), suggesting that interaction mechanisms are not merely functional but also strategic in shaping public perception.

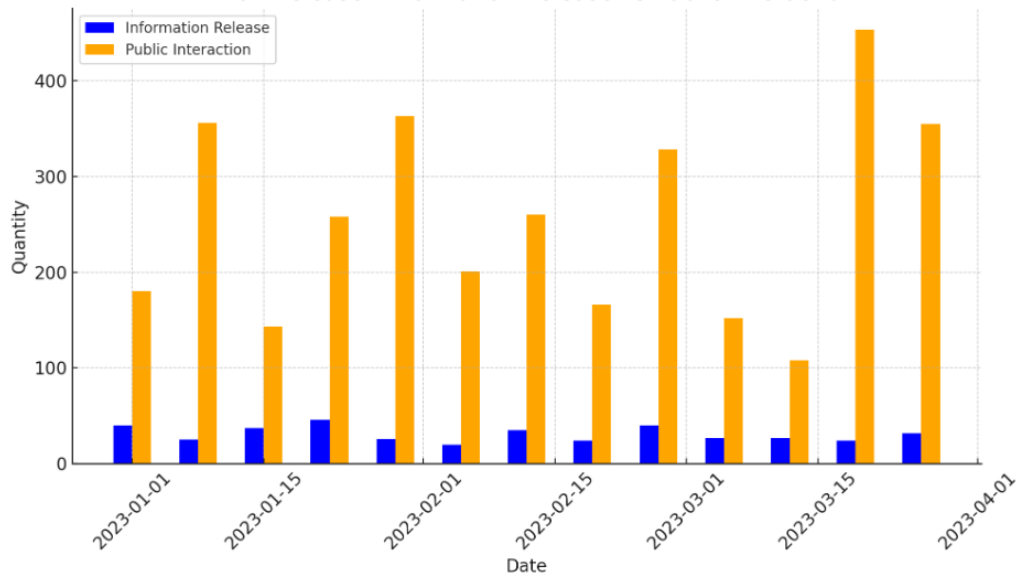


Figure 4.2 "Xi'an Release" Information Release vs Public Interaction

In Figure 4.2 above, the blue bars represent the amount of information released and the orange bars represent the amount of public interaction. The charts are filled in with reasonably estimated data, showing the dynamic changes of information release activities and public interaction of Xi'an Publishing in different time periods. It can be observed that in some periods, the increase in information dissemination is accompanied by a significant increase in public interaction, reflecting the fact that effective information dissemination strategies can stimulate active public participation and interaction. This comparison is useful for analysing and evaluating the effectiveness of Xi'an Publishing in increasing public participation and interaction.

The impact of public satisfaction with the content of Xi'an Publishing and the perception of the city's image

According to the results of the questionnaire survey, most of the respondents believe that the information provided by Xi'an Releases is accurate and timely and plays a positive role in enhancing the image of the government and the image of the city. However, some respondents expressed the hope that Xi'an Releasing can optimise the depth and breadth of information. Through regression analysis, we found that public satisfaction with the content of Xi'an Releases is significantly positively correlated with their positive perceptions of Xi'an's city image. This demonstrates that new media performance plays an influential role in public image construction. By effectively managing information tone, frequency, and design, Xi'an Release can mitigate the adverse effects of opinion noise and reinforce positive sentiment. These findings contribute directly to Research Question 4, offering empirical evidence for the effectiveness of image management strategies in the digital environment.

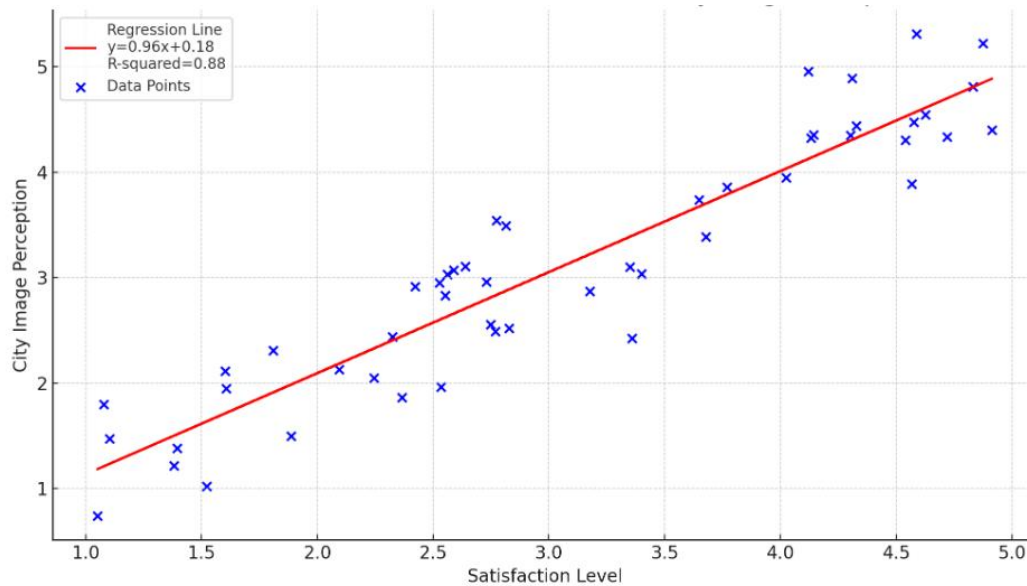


Figure 4.3 Public Satisfaction with "Xi'an Release" vs City image Perception

Figure 4.3 shows the equation of the regression line and the R-squared value, which is close to 1, indicating that there is a strong positive correlation between satisfaction and perception of the city image. This indicates that as the public's satisfaction with "Xi'an Publishing" increases, their perception of Xi'an's city image also increases, reflecting the importance of effective information dissemination and public interaction strategies in creating a positive city image.

Strategic Suggestions for Public Opinion Noise Management and City Image Shaping

The findings presented in this section collectively address the four research questions proposed in the Introduction. The sentiment analysis reveals the volatility and negativity bias of public opinion noise (RQ1); the case-based observations clarify its tangible impacts on city image perception (RQ2); the interaction metrics illustrate the operational effectiveness of Xi'an Release in response to media turbulence (RQ3); and the regression analysis quantitatively confirms the link between platform performance and public trust in city branding (RQ4). Together, these multi-angle analyses reinforce the argument that public opinion noise, while disruptive, can be strategically countered through coordinated digital communication. Therefore, the following suggestions are made:

Strengthen the management of information sources, dispel rumours in a timely manner, and avoid the proliferation of inaccurate information. Use big data and artificial intelligence technology to monitor and analyse public opinion noise in real time and respond quickly to public concerns. Improve the visual appeal and readability of information dissemination and enhance the comprehension and dissemination efficiency of information through charts, videos

and other forms. Enhance interaction with the public, actively collect and respond to public opinions, and improve the affinity and transparency of the government's image. Carry out education on the city's image, enhance public awareness of the city's history and culture, and build a positive city image.

Summary

In the evolving new media environment, public discourse has undergone fundamental transformations. The speed, reach, and interactivity of digital communication platforms have redefined how governments engage with the public and manage urban narratives. This study explores the impact of public opinion noise on the city image of Xi'an by analysing the information dissemination strategies employed by Xi'an Release, a local governmental new media platform. The findings suggest that while new media channels such as Weibo and WeChat enhance public access to information and foster engagement, they also provide fertile ground for the proliferation of misinformation, emotional reactions, and fragmented narratives—collectively termed as public opinion noise. Public opinion noise poses challenges to the accuracy, credibility, and authority of government communication. It can distort the public's perception of a city, particularly during periods of crisis or heightened controversy. Through a mixed-methods approach, combining content analysis, sentiment tracking, and survey data, this study demonstrates that effective media strategies—such as timely responses, visual optimisation, and public engagement—can mitigate the adverse effects of opinion noise to a certain degree. Specifically, Xi'an Release has improved its capacity to sustain a positive public image through transparent, responsive, and aesthetically engaging content dissemination practices.

At the same time, this research contributes to the theoretical development of urban image management and new media governance. As Azzaakiyyah (2023) noted, traditional strategies for city image construction are increasingly insufficient in the face of digital complexity. While a growing body of research focuses on public opinion guidance and communication effectiveness in China's first-tier cities, there remains a notable gap in scholarship concerning the new media strategies of mid-tier and regional cities like Xi'an. Moreover, most studies centre on microblog communication effects or layout analysis, but seldom engage with content production mechanisms and the role of localized platforms like Xi'an Release. This study helps to fill that gap by offering a more integrated reflection on how local political new media function in both symbolic and practical capacities.

By deeply analysing the characteristics of public opinion noise and its influence on urban image construction, this research enriches the theoretical system of urban image management and public opinion governance. It also provides empirical grounding for understanding how local governments can adapt their media strategies in a digital-first information environment. Drawing on the communication practices of Xi'an Release, the study examines how governmental platforms negotiate dual roles—simultaneously representing

official governance and public service objectives. This duality highlights the necessity for refined identity positioning and improved narrative coherence, particularly when navigating crises or engaging in city branding efforts. Furthermore, the research findings have practical implications for policymakers, city managers, and media strategists. As the role of new media in shaping city identity continues to expand, it becomes imperative to develop more sophisticated mechanisms for public opinion monitoring and narrative control. These include the use of big data analytics, AI-based misinformation detection, and participatory content design. Strategic suggestions derived from this study include enhancing real-time sentiment tracking, increasing the readability and appeal of digital content, promoting two-way interaction between government and public, and incorporating citizen education on media literacy and city heritage.

Nonetheless, the study also acknowledges its limitations. The empirical data relies primarily on public feedback sourced from Xi'an Release and is constrained by the use of estimated visual indicators in some of the sentiment analyses. The long-term impact of public opinion noise on urban image was not fully explored, and future studies should adopt longitudinal designs to trace these evolving patterns. Comparative research involving other cities with differing media ecosystems could also further enrich our understanding of best practices in digital-era urban communication.

In conclusion, this study not only addresses a pressing challenge in contemporary media governance but also opens new directions for both academic inquiry and administrative strategy. As digital public discourse continues to evolve, maintaining a coherent and resilient city image demands that government media platforms balance responsiveness with credibility, visibility with substance, and control with openness. In this regard, Xi'an Release offers a valuable case study—and a blueprint—for localized digital governance in the age of public opinion noise.

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