Agenda Setting between the Public and Government on Weibo: The Case of Shanghai Lockdown during the COVID-19 Epidemic

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This study examined China's public and government agenda setting in response to the Shanghai lockdown due to the COVID-19 pandemic. It employed content analysis, correlation, and Granger's causality tests to analyze 1,717 Weibo posts published by the public and the Shanghai Municipal Government from March 12 to June 1, 2022. The results showed that (1) pandemic statistics were the central attribute in the government agenda, while civil life, community management, and government and policies were the central attributes in the public agenda; (2) the government's agenda unidirectionally influenced the public agenda in terms of government policy attributes; and (3) the government and public agendas reciprocally influenced each other in terms of economic attributes. This study contributed to the existing literature by examining agenda-setting dynamics in a city closure event during the COVID-19 epidemic. It also extended existing methods by modeling implicit relationships between attributes in the public and government agendas.

Keywords: Shanghai lockdown, COVID-19 epidemic, publics and government, agenda setting, social media Weibo

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Introduction

The COVID-19 epidemic since 2019 is one of the significant crises China faced. This crisis has brought considerable challenges to the policy-making process by adding time constraints and uncertainties (Dai et al., 2021). Especially Shanghai as one of the world's most influential cosmopolitan cities in China (English & Li, 2021; Nam, 2021), was locked down for a long time in the spring of 2022, triggering an unprecedented dispute and universal query of Chinese society to the government's policy (Ellis, 2022; Ni, 2022; Wang & Qian, 2022).

A case study on the lockdown is undoubtedly conducive to further understanding the agenda setting of relevant aspects in China. First, it is crucial to consider that China has different political and media systems than Western countries (Luo & Harrison, 2019). When agenda setting is studied in a specific country, unique country characteristics may play a significant role (Peter, 2003). As a major Eastern power that maintains a traditional governance system, China is being shaped by the U.S. and its allies as a strategic adversary in a series of new geographical, political, and economic conflicts. However, academic attention to the policy agenda of the regimes like China is insufficient (Liu & Chan, 2018).

Moreover, China's government is facing increasing domestic and international pressure in the emerging Internet expression of public opinion and the continuing global wave of democratization. Although the government blocked a great number of western social media websites and established the Great Firewall to filter content based on politically related sensitive words and comments, many scholars believed that social media weakened news media's agenda-setting abilities (Zhou & Zheng, 2022), the emergence of Chinese social media such as Sina Weibo provides a space for people to discuss current social issues. Therefore, traditional agenda-setting practices have come to be heavily influenced or even "reversed" when media organizations monitor and use online content and the behavior of users in online settings as a basis for their decisions about what content to feature (Luo & Harrison, 2019). The extent to which the public agenda influences the policy agenda indicates the degree of democracy in a regime (Liu & Chan, 2018). Some scholars were eager to confirm any transition in China's decision-making, including agenda setting, under this new context (e.g., Luo & Harrison, 2019; Wang, 2008; Wang, 2022; Zhou & Zheng, 2022).

Finally, the outbreak of COVID-19 is doubtlessly an unusual health crisis that generated significant social and political impacts (Wang, 2022). According to Liu and Chan (2018), the influence of the public agenda on the policy agenda was strengthened during a crisis. The crisis often inspired a hot debate, mass mood, social movement, and the like in the public sphere in the short term and further moved issues closer to the decision agenda at a macro-political level. Dai et al. (2021) also believed the pandemic challenged the existing policy-making process. Therefore, this crisis is an appropriate window to observe China's current social and political system, and the process and characteristics of its decision-making, including agenda setting.

Through content analysis of relevant posts published by the public and the municipal government on Sina Weibo during the Shanghai lockdown, this study examined the agenda setting between the public and the government responding Shanghai lockdown due to the COVID-19 epidemic crisis,

and revealed some possible problems and dangerous signs of China's policy agenda.

The lockdown of Shanghai: An Unprecedented Crisis and A Huge Social Experiment

China is one of the few countries attempting to defeat the COVID-19 outbreak. Since Wuhan during the early days of the epidemic, China has taken advantage of the characteristics of its political system to adopt a "zero-COVID" normalizing policy. Though it controlled the epidemic's spread to a certain extent for a time (Cheshmehzangi et al., 2022), some policies related to the COVID-19 pandemic, such as expanding closed areas and blocking essential traffic, have also brought huge costs. Comparatively, Shanghai's precision prevention model was praised (English & Li, 2021), and hailed as once known as a role model in preventing and controlling the COVID-19 epidemic (Zhang et al., 2020). However, introducing the Omicron variant, which is highly infectious but less lethal, poses a new challenge to this policy. Especially, because of the Omicron outbreak in March 2022, Shanghai was forced to abandon its model and implemented a lockdown in its whole city like other districts, marking a game-changing situation (Cheshmehzangi et al., 2022; Ye, 2022). Shanghai's change also derived from the pressure of the central government's unified 'Zero-COVID' policy.

As Shanghai is China's largest mega-city and financial hub (Cheshmehzangi et al., 2022; Ye, 2022), its lockdown had a more noticeable negative impact at home and abroad. Unlike the past situation, the Shanghai lockdown has distinctly highlighted and magnified the problems of China's "zero-COVID" normalizing policy and further intensified the social debate over relevant policy agendas, especially in online and social media (Koetse, 2022; Wang & Qian, 2022). Shanghai residents turned from emotional disorders (e.g., the enormous amount of uncertainty, confusion, stress, and frustration) to rationally and objectively questioning and criticizing the legitimacy, scientificity, and rationality of the Chinese government's 'Zero-COVID' policy (Ellis, 2022; Ni, 2022; Wang & Qian, 2022).

In addition to Shanghai, China's other mega-cities (e.g., Shenzhen, Guangzhou, Beijing, Xi'an) have also encountered a reoccurrence of the COVID-19 outbreak in 2022. Because of ineffectiveness and high economic and social costs, political pressures and concerns are mounting. More importantly, this situation is not just a public health crisis. It challenges all relevant systems and stakeholders, including governments, health systems, industries, society, and the economy. International media described China's "zero-COVID" policy as a failure. The authorities have fallen into the trap of "not reversing course" or "losing face" (Cheshmehzangi et al., 2022). Attributes related to Shanghai lockdown caused by the COVID-19 pandemic have become political ones that are hotly debated by the public and of great anxiety by the authorities on social media such as Weibo, the public sphere in China (Chang, 2022; Koetse, 2022).

As Ye (2022) suggested, the Shanghai lockdown has become a huge social experiment for many sociologists. More than ever, China's "zero-COVID" policy depends on the success or failure of a city's epidemic prevention and control (Cheshmehzangi et al., 2022). However, while some scholars (e.g., Dai et al., 2021; Wang, 2022) have studied the coronavirus epidemic and its agenda setting in China, no one has studied the case of Shanghai.

Government and the Public: Different Agenda Setting, Agenda Attributes, and their Association in China

Agenda setting theory formulated during the time when traditional media had monopoly power over the tools of content creation and distribution has been widely used and developed to study the communications between the government, the public and the media, it allowed traditional media to be the central gatekeeper over the passive news reading public. By virtue of creating a shared, national pseudo-environment, mass media fulfill the important function of building a public consensus on the important issues of the day (Meraz, 2009). However, these Western methods cannot be applied directly to the Chinese context (Luo & Harrison, 2019). In China, the media are still tightly controlled by the party, the official media are just the mouthpiece of the government, and they do not have the relative independence that media in Western countries have (Almighty uncle, 2022; Crossley & Tian, 2021; Hernández, 2019). Chinese scholars' efforts to understand the media's agenda-setting function are based on the propaganda model. They easily link agenda setting to "correctly guiding public opinion", rather than correlating the media agenda with the public agenda (Luo, 2013). Therefore, China is a prominent case country because it can broaden the knowledge of agenda setting from a comparative perspective (Dai et al., 2021).

However, social media has profoundly altered the way the public, the media, and the government set their agendas (Zhou & Zheng, 2022). Unlike traditional media outlets, Meraz (2009) noticed that independent bloggers gain their strength to critique traditional media's news reports through the dynamic, real-time assemblage of relevant perspectives and opinions shared by other citizen media outlets. Though China's social media also are tightly controlled, they still provide access to information from alternative sources (Tang & Zou, 2021). And Chinese users have employed various ways to circumvent the government's Internet censorship mechanisms (Lagerkvist, 2010; Yang, 2003, 2009). Therefore, now the focus of academic debates has been shifted from studying mass media to social media and the combination of both, including the relationship between mainstream media and internet platforms that mentioned by Melek (2017). However, According to Melek (2017), these studies predominantly addressed the phenomena within the American media context. Therefore, the knowledge about a totally different context such as Turkey is unclear. In fact, the impact of new media on agenda setting must vary in different countries, especially authoritarian countries, but relevant research is obviously insufficient.

According to McCombs and Shaw (1972), in the first level of agenda-setting theory, the media's salience of issues can influence the public's perceptions of the importance of those issues. The second level of the theory focuses on attributes that describe a given issue, asserting that certain attributes or aspects of an issue the media emphasize will influence the public's perceptions of that issue (McCombs et al., 1997). According to McCombs (2005), when the news media talk about an issue—and when members of the public talk and think about an issue—some attributes are emphasized, others are mentioned only in passing. For each issue on the agenda, there is an agenda of attributes that influences our understanding of the issue. Kosicki (1993) referred to agenda-setting as the "shell of the topic," describing the shell as the issues examined, whereas the attributes are an exploration of what is inside the shell. Šķestere and Darģis (2022) concluded that the first level of agenda-setting looks at what people think about, whereas the second level of agenda setting

deals with the question of how people think about it.

In fact, some scholars have explored agenda attributes emphasized by the Chinese government and its official media during the COVID-19 outbreak nationwide. For example, Chen et al. (2020) investigated how the National Health Commission of China (NHCC) used social media to classify the content types of government posts from 'Healthy China,' an official Sina Weibo account of the NHCC. In a similar manner, Dai et al. (2021) identified different topics of a political nature from government posts during the COVID-19 pandemic. Zhu et al. (2022) found out that the topics covered by China Daily, an English-language daily newspaper owned by the Central Propaganda Department of the Chinese Communist Party. In addition, Che et al. (2023) divided the duration of the 2022 Shanghai lockdown into several stages and analyzed user comments of videos posted by Healthy China on TikTok to identify themes in accordance with different stages. However, they clearly lacked relevant research of public agenda and its attributes on social media. One consequence of this is that they clearly focused on discussing relevant agenda attributes from the perspective and inclination of the government, and ignored the agenda attributes of the public.

Furthermore, scholars still seemed to dispute different types of agenda setting, and their attributes and relationships in China. Through some case studies, some of them (e.g., Zhou & Moy, 2007) believed in the interacting effects of public and the media agendas, others (e.g., L. Chen et al., 2019) argued that there was no significant relationship between public agenda and government agenda in China. Some scholars (e.g. Dai et al., 2021; Jiang, 2014; Li & Lin, 2017; Z. Chen et al., 2019) observed that the government-led agenda model has strong capacity to define the ex-ante set of issues that can be publicly discussed, official media has an impact on personal agenda, and online public opinion's agenda-setting effect is limited; other scholars (e.g., Yuan, 2017; Zhou & Zheng, 2022) suggested that the public agenda was more influential than the media agenda and the government agenda on Weibo during the COVID-19 pandemic in China, and a bottom-up and gradual agenda setting effect from online activism on the government's political agenda includes a potential transition from issue level to attribute level. There are many hypotheses, including that the agenda attributes of the government and the public are not exactly the same. The government agenda is more based on the state and emphasizes the political agenda, while the public agenda is more based on the individuals and emphasizes the economic agenda. As the media polarization and the disagreement between the government and the public deepened, even if there is some degree of causal connection between them, it has gradually diminished.

Clearly, more and more typical case studies are needed to clarify these disputes and hypotheses. In order to clarify the differences and relationships between the Chinese government and the public in agenda setting and attributes during the COVID-19 epidemic, based on the case of Shanghai lockdown, this study raised the following three questions:

RQ1: What attributes were emphasized in the public and government agendas, respectively?

RQ2: Was there a correlation between the public and government agendas, and if so, to what extent?

RQ3: How did one agenda affect the other if the correlation existed?

Research Methods

Sample Selection and Data Collection

The study selected the Shanghai lockdown in the spring of 2022 as the research case. The time frame for data collection was from March 12 to June 1, 2022, because on March 12, 2022, Shanghai firstly began to put all schools and universities under lockdown (Cheshmehzangi et al., 2022), and on June 1, 2022, the Shanghai government announced unblocking (Yiu, 2022).

Also, this study selected Sino Weibo, the largest social media platform in China (Wang et al., 2020), as the data source. Nine hundred posts related to the Shanghai lockdown released by the Weibo account "上海发布" (means Shanghai release) of Shanghai Government in the selected time frame were collected by manual screening to investigate the government agenda. In addition, 817 relevant posts published by the online public within the topic discussion group "上海疫情" (means epidemic in Shanghai) were collected to examine the public agenda. More specifically, by using the Weibo topic search engine with the keyword "上海疫情," the top one discussion group was "上海疫情" according to the numbers of being read and discussed. Compared with a mix of posts which included poses from media organizations, corporations/groups, government agencies, and the public generated by using keyword search on the homepage of Weibo, the posts generated by using the Weibo topic search engine were only public posts, excluding posts from government agencies, companies, and other institutions and their leaders. Ten public posts were randomly sampled for each date to maintain the balance of the number of samples taken daily because the least number of posts was ten pages. Initially, 820 public posts for 82 days were collected. Then considering the concerns over bot-generated content (e.g., Cai et al., 2023), this study used a series of indicators introduced by Ferrara (2018) to separate non-human users from human users on Weibo, thus increasing the validity of the data. Therefore, three posts were removed, and 817 public posts were collected. Altogether, a total of 1,717 relevant posts were included for analysis.

Content Analysis

This study employed traditional content analysis to analyze the data set. Specifically, the unit of analysis for both online public and government agendas was each posted message. This study followed Howlett (1998) and Dai et al. (2021) in using the frequency of an attribute appearing in traditional and social media as a proxy to measure agenda decisions, which could reflect online public opinion and its evolution over time. The frequency of an attribute in public or government posts is determined by the number of times the attribute appears in different public or government posts on Weibo, with multiple occurrences in the same post counting as one occurrence.

Three coders were involved in this study, and all of them have research background of journalism and mass communication. Initially, this study used the categories identified by Dai et al. (2021) to

code the post content, but during the coding process, the coders found out that some predetermined attribute categories did not exist in this data. Therefore, in the iterative coding process of content analysis, the coders retained the predetermined attribute categories applicable to the data, while new attribute categories were proposed by themselves based on the content of the data and agreed upon through discussion. Finally, eleven attributes were identified. Each agenda was compiled by making a list of attributes in order of their salience which was measured by the frequency of attributes mentioned in the collected public or government posts. Then, the attribute distributions for the online public and the government posts were calculated. The coding scheme for eleven attributes related to the Shanghai lockdown in the online public and government posts were presented in Table 1.

Table 1
Coding Scheme for Attributes in the Online Public and Government Posts

Attribute #	Label	Keywords	Example Public posts	Government posts
1	Civil life, family, and housing	Cook, eat, drinks, weather, father, mother, home, diary, date	Another day going crazy at home.	The Municipal Center for Disease Control and Prevention reminds us that during the period of staying at home to fight against the epidemic, maintaining physical health is crucial. How to exercise at home? It is suggested to ensure sufficient physical activity (equivalent to 6,000-10,000 steps per day) and physical exercise (such as 150 minutes of moderate-intensity aerobic exercise per week); mainly do exercises at home, and if conditions permit, exercise in open spaces outdoors.
2	Community management and service	Go downstairs, trumpet, neighborhood committee, notification, organization, street office, property, residential guard	I really cannot help but complain. Our community has a positive case, but the Neighborhood Committee did not inform anyone. They just posted a notice at the elevator entrance on the first floor. Who is this notice for? We are all staying at home. Don't residents have the right to know?	The Biomedical Industry Promotion Center under the Municipal Commission of Economy and Informatization, in conjunction with Yicai, has released the "Shanghai Community Volunteer Epidemic Prevention Guide," which shares reference materials for community volunteer epidemic prevention training.

3	Coronavirus control, prevention, and monitoring	Isolation, control, nucleic acid test, protection, confirmed cases, asymptomatic cases, QR code, screening, vaccine	Someone in the group chat posted that there was a false positive for nucleic acid testing at Haiyue Garden by Zhongke Runda. I thought of an old lady in my building who tested positive on May 4, but after being transferred, her nucleic acid results at home were negative, and the people who lived with her also tested negative. Coincidentally, those two days happened when Zhongke Runda conducted nucleic acid testing. It is terrifying to think about! I have seen people expose and seek help regarding problems with nucleic acid testing results...	The Municipal Health Commission reported this morning (13th) that as of 0-24 on March 12, 2022, there were one new confirmed case of COVID-19 and 64 new asymptomatic infections, all of which were detected through quarantine and control measures, with one confirmed case and 60 asymptomatic infections being found in these measures and the rest being found through relevant risk population screening. There were also 13 new confirmed cases of COVID-19 among imported cases and one new asymptomatic infection, all of which were detected within the closed-loop management.
4	Culture, entertainment and travel	Holiday, ticket, Disney, go out, flower, film, video clip, song, game	A serial killer murdered 13 women in one year, and this movie is based on a true story! The Chaser.	The Municipal Party Committee Propaganda Department is coordinating and guiding various cultural and artistic units in the city to increase online cultural and artistic content under the theme 'Arts Leading the Way Forward.'
5	Economics, finance, trade and employment	Factory, production, stock market, recruitment, business, shopping mall, 5G, financing, work	According to multiple sources, Tesla has confirmed plans to build a new factory near the current Gigafactory in Lingang, Shanghai, to expand production capacity. The new factory is expected to produce Model 3 and Model Y vehicles with an annual production capacity of 450,000 vehicles.	Recently, Shanghai Pudong Development Bank, Shanghai Bank, and Shanghai Rural Commercial Bank have leveraged their main business advantages to ensure the stable operation of the entity's economy.

6	Government and policies	Government leaders, management, implementation, accountability, press conference, epidemic prevention policy, face, central, publish	To save face, everything else is lost in the end.	A series of policy measures to support the fight against the epidemic in the city's human resources and social security field were recently introduced, including sixteen specific measures focusing on assisting enterprises to stabilize employment, caring for frontline medical workers and related personnel, maintaining harmonious and stable labor relations, and optimizing human resources and social security services.
7	Groceries supply and logistics services	Sold out, purchase, express delivery, supplies, supermarket, hungry, store, gift bag	Every household in Anting has someone coming out to buy groceries, and the line for RT-Mart has stretched all the way here.	In response to the concern of citizens about long platform logistics delivery times and delayed supply of vegetables in some areas, the commercial department has quickly launched an emergency mechanism, establishing a network of guaranteed supplies for daily necessities through multiple channels and formats and making every effort to ensure supply, operation, and emergency response.
8	Hospitals, healthcare workers and medical services	Death, help, pharmacy, cancer, doctor, medical care, therapy, emergency, patient	The hospital is closed My stomach hurts so badly I want to go to the emergency room, but the hospital says the emergency room is closed when I call. What should I do? Am I going to die from the pain? At least open the emergency room!!	Several medical institutions in our city have recently suspended some medical services to cooperate with the epidemic investigation work. To facilitate citizens seeking medical treatment and consultation, we have compiled a list of the suspended services and resumption status of major medical institutions shortly for reference.
9	Law and order	Police, illegal, reselling, rumor, shoddy,	A friend of my partner could not kick her boyfriend out due to the	Expose some typical cases of illegal pricing involving illegal activities such as "price

	unqualified, fake product, moldy, profiteering	pandemic, and the police could not take her for examination, treatment, or evidence collection. Is not choking someone to death attempted murder? They even kept the attempted murderer and victim in the same building. It is outrageous.	gouging," "price fraud," and "failure to mark prices." We hope that all operators will consciously abide by price laws and regulations, effectively enhance their sense of social responsibility and integrity, strengthen self-discipline in pricing management, and jointly maintain stable market price orders.
10	Road and public transport ation	Tunnel, railway, civil aviation administration, subway, bus, ferries, traffic control, truck, cab	Shanghai Metro's 16 operating lines will extend until midnight on March 28!	Regarding the recent sporadic cases and localized outbreaks of COVID-19 in some parts of the country, the railway department will quickly and significantly adjust the operation of passenger trains, and implement measures for free refunds of passenger train tickets.
11	Students, school educatio n and examinat ion	Course, school, exam, teacher, professor, graduation	Online classes start with a beloved lazy cat teaching assistant.	The National Computer Rank Examination, which was scheduled to take place in Shanghai from March 26 to 27th, has been postponed to the second half of this year due to the latest situation of COVID-19 epidemic prevention and control in the city, according to Shanghai Guozijian.

With the assistance of Excel's added function of random selection, the intercoder reliability was established by randomly selecting 10% of the sample from the online public and government posts for every coder to analyze. The intercoder reliability was calculated by using Cohen's Kappa because all three assumptions of this index are appropriate in the context of the characteristics of this data, and this measure takes into account chance agreements which means the agreement would be observed if two raters guess randomly (Cohen, 1960; Feng, 2015; Nili et al., 2020; Zhao et al., 2013). The intercoder reliability of the "attribute category" was .98 for government posts and .96 for public posts. It indicated the relatively high extent to which two independent coders in this study share the same opinion on coding the same content.

Correlation and Granger's causality tests

This study conducted correlation analysis and Granger's causality tests to identify possible causal agenda-setting effects between public and government posts on Sino Weibo. In correlation analysis, Pearson's r was used to measure the association between public and government agendas because the frequencies of being mentioned for each attribute across public and government posts are two continuous variables.

Moreover, this study performed Granger causality tests in Python to determine the directional correlations between public and government posts. Based on Granger's (1969) notion, variable Y can 'Granger cause' variable X if a study can predict X better with the past values of Y than when it is excluded. Granger causality analysis provides more accurate results than cross-lagged analysis because it predicts the direction of the agenda-setting process and calculates the period needed to generate linkages among different agendas for a specific study (Russell Neuman et al., 2014). In the traditional execution of Granger time-series regressions, one tests each vector autoregression (VAR) for stationarity—to identify potential trends, cycles, and seasonal variations. The Augmented Dickey-Fuller (ADF) Test indicated a stationary autoregression (Becketti, 2013). This study used Granger causality analysis to determine the proper time lag for this study and then explore agenda-setting effects between the Chinese public and the Shanghai government on Weibo. Although multiple Weibo posts are published at different times of each day, in this study, the filtered small sample size and the frequency at which each attribute was mentioned per day ranged from 0 to 10 (in most cases, the frequency was less than 4) made it reasonable to organize the data daily. The AIC value, a criterion commonly applied for lag selection in Granger causality tests (Becketti, 2013), indicated that one day is the best time lag for this study.

Results

Different Agendas of the Public and Government

Figure 1 showed the online public agenda and the government agenda, respectively measured by the attribute salience in the online public opinion within the topic discussion group titled "上海疫情" (means COVID-19 in Shanghai) and Shanghai government's Weibo account "上海发布" (means Shanghai release) on Weibo. The frequencies that attributes appeared in the online public and government agendas revealed a striking pattern.
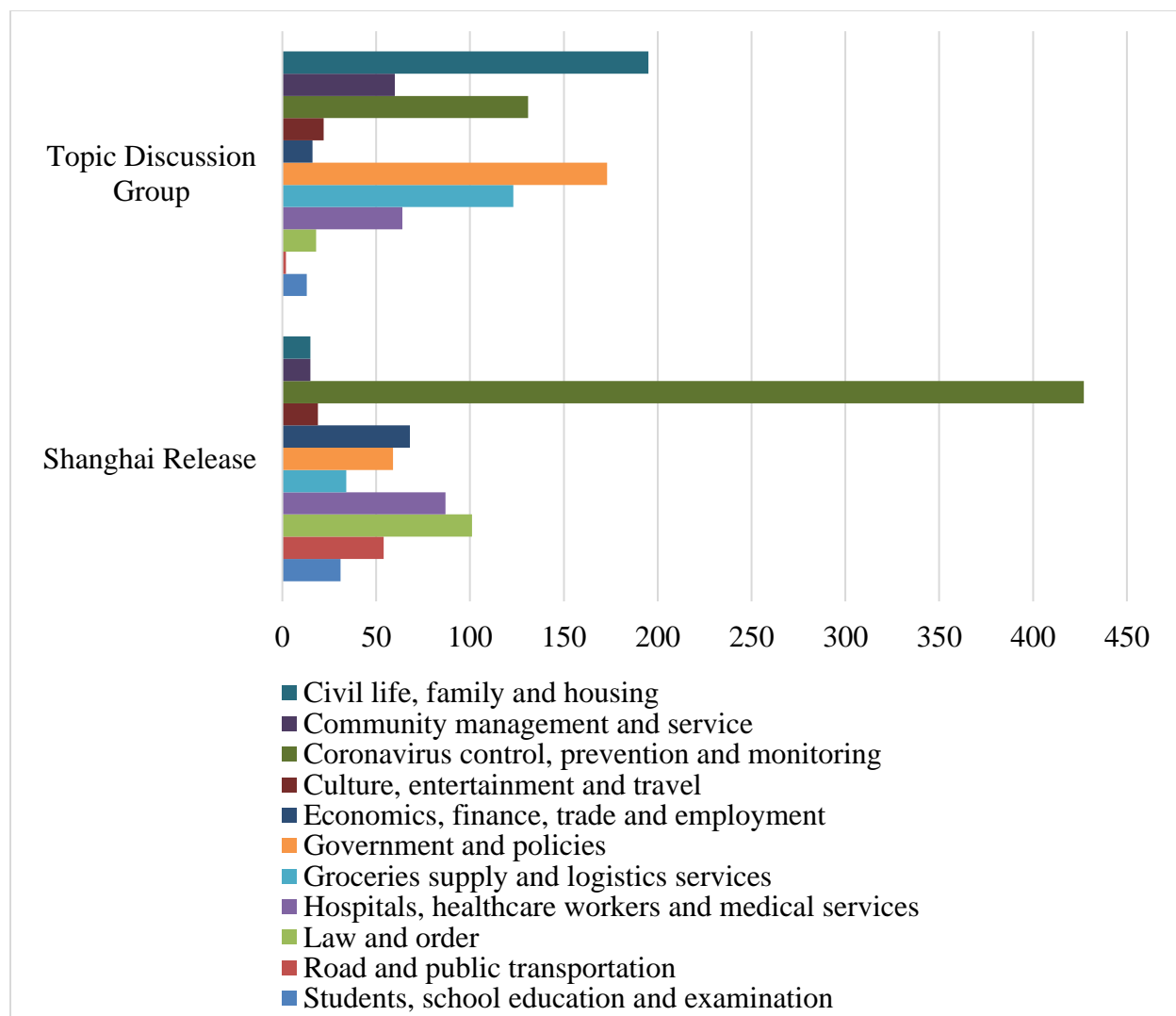
Figure 1. Attributes Salience in Public and Government Posts on Weibo during the Shanghai Lockdown

More specifically, for the online public agenda, the top five attributes in the online public opinion were "civil life, family and housing," "government and policies," "coronavirus control, prevention, and monitoring," "groceries supply and logistics services," and "hospitals, healthcare workers and medical services." One attribute, "road and public transportation," received the least attention in online public opinion.

For the government agenda, the attributes that got the most attention in Shanghai government's official account—Shanghai Release on Sino Weibo were "coronavirus control, prevention, and monitoring," followed by "law and order," "hospitals, healthcare workers and medical services," "economics, finance, trade and employment," and "government and policies." Two attributes, civil life, family and housing," and "community management and service," received the least attention

in the posts from the Shanghai government's Sino Weibo official account—Shanghai Release.

Correlations between the Two Agendas

There was no significant correlation between the online public agenda within the topic "上海疫情" (means COVID-19 in Shanghai) and the government agenda in Shanghai government's Weibo account, $r(9) = .13$, $p > .05$. It indicated that these two agendas were divergent. That is to say, the Chinese public and the government had very different attention to attributes. It reflected that the government mainly focused on a daily statistical report of COVID-19 cases and its policy implementation to control, prevent and monitor the epidemic. In contrast, the online public mainly focused on cognitive thinking about the efficacy, rationality, and sustainability of government policies and the epidemic's impact on all aspects of daily work and life.

Causal Agenda-setting Effects between the Two Agendas

It was found in this study that most of the 11 VARs except for three attributes—"civil life, family and housing," "economics, finance, trade and employment," and "students, school education and examination" passed the test of stationarity. Therefore, as for non-stationary data in these three attributes, this study made non-stationary data stationary by using difference operation and then tested for Granger causality (Toda & Yamamoto, 1995).

As shown in Table 2, the agenda-setting influence was bi-directional, with only a few significant Granger causality values. More specifically, the agenda-setting effects between the public and the government agendas were limited, except for the attribute "economics, finance, trade and employment," where Granger's causality test suggested a more significant influence of government posts on public posts ($F = 9.59$, $p < .01$) although public posts also had a statistically significant effect on government posts ($F = 5.65$, $p < .05$), and for the attribute "government and policies," where Granger's causality test suggested a stronger influence of government posts on the public posts than vice versa ($F = 6.13$, $p < .05$). To sum up, the results indicated that although the Shanghai government was more likely to have an agenda-setting effect on the Chinese public than the reverse, the government only exerted the influence on the public agenda in terms of very few attributes. Furthermore, on the majority of attributes, especially the attributes of "coronavirus control, prevention and monitoring" and "hospitals, healthcare workers and medical services," that both the Chinese public and the government highlighted, while the Chinese public was powerless to influence the government's agenda setting, they were not significantly influenced by the government either.

Table 2

Granger causality results for Stationary Data in Public and Government Agendas

Category	F statistics	p-value	AIC
Direction of causality: from government to public posts			
Community management and service	1.09	.30	-.19
Coronavirus control, prevention and monitoring	3.82	.05	.20
Culture, entertainment and travel	.01	.91	-1.45
Government and policies	5.65	.02*	1.11
Groceries supply and logistics services	1.75	.19	.41
Hospitals, healthcare workers and medical services	.22	.64	.18
Law and order	.51	.48	-1.09
Road and public transportation	.02	.88	-3.56
Direction of causality: from public to government posts			
Community management and service	.0001	.99	-.19
Coronavirus control, prevention and monitoring	.33	.57	.20
Culture, entertainment and travel	.01	.94	-1.45
Government and policies	.55	.46	1.11
Groceries supply and logistics services	.22	.64	.41
Hospitals, healthcare workers and medical services	2.03	.16	.18
Law and order	.76	.38	-1.09
Road and public transportation	.84	.36	-3.56

Note. *p <.05, **p < .01.

Granger causality results for Non-Stationary Data in Public and Government Agendas

Category		p-value	AIC
Direction of causality: from government to public posts			
	Civil life, family and housing	.58	-1.10
Attributes	Economics, finance, trade and employment	.000**	-2.62
	Students, school education and examination	.30	-3.21
Direction of causality: from public to government posts			
	Civil life, family and housing	.44	-1.10
Attributes	Economics, finance, trade and employment	.001**	-2.62
	Students, school education and examination	.16	-3.21

Note. *p <.05, **p < .01.

Discussion

The results of this study showed that in the crisis event of the Shanghai lockdown, generally speaking, Shanghai government had a very limited agenda-setting impact on the public agenda, although the government's agenda-setting impact was slightly stronger than Chinese netizens. For the attribute of "economics, finance, trade and employment," Chinese netizens and Shanghai government have mutual significant agenda-setting influence, while for the attribute of "government and policies," the government had a significant agenda-setting influence on Chinese netizens. And for the remaining attributes, both the government and Chinese netizens did not have significant agenda-setting impact. A possible explanation for these results is that most economic attributes involve the vital interests of the public, while the nature of the Chinese government's governance gives it significant power over policy-making, from epidemic prevention and urban lockdown to COVID-19 testing and food distribution, almost all policies are made by the government alone without public participation. For example, on the one hand, a public post said, "Seeing this news, the so-called resumption of business and the market in Shanghai is completely impossible tomorrow, and it may not even start on June 1." On the other hand, a government post mentioned, "According to the current situation of epidemic prevention and control, in order to effectively reduce the gathering of people and avoid cross-infection, @上海 12333 advocates that during the prevention and control period, please choose channels such as "online office" and "handheld office" to handle social security business.

The results provided a new insight into the relationship between agenda setting of the government and the public in China at the provincial level during the pandemic context. The results suggested that the Chinese government and its people set their own agendas out of their respective interests, but neither side showed an agenda-setting effect on the other in terms of most attributes. To some extent it may be due to a fact that the event of Shanghai lockdown due to COVID-19 was a major starting point when the Chinese public began to lose confidence in the credibility of the government on a large scale. The draconian measures triggered wave after wave of outcry, severely eroding public trust in the Shanghai government. "A ridiculous drama is over, and no one has come forward to explain, no one has apologized to the lives that were insulted, harmed and lost, and no one has been held accountable," a Shanghai resident wrote in a widely shared post on WeChat, a Chinese social media platform. Henry Shi, a 30-year-old photographer said, the public sentiment in Shanghai is entirely different from in Wuhan because many in Shanghai think these measures are unnecessary (Gan, 2022).

The results should be taken into account when Chinese authorities consider how to effectively guide agendas for its people and further how to improve their credibility by effectively responding to public expectations and concerns. The results suggested that the Chinese public does not care about COVID-19 statistics, and measures of pandemic control and prevention that the government cares most, while they mainly care about the issues closely related to their livelihood, such as basic supplies, homeworking, community and hospital services that the government rarely notices. Failure to pay attention to major issues of public concern and accordingly take timely and effective measures to address them may be one of the reasons why the government's reputation is significantly weakening.

Limitations and Future Directions

First, due to technical difficulties in capturing relevant data and more severe content censorship than Weibo, the study did not select other Chinese social media, such as WeChat, to supplement social media data. If future research could simultaneously obtain more public opinion data on other popular Chinese social media and Weibo, it would undoubtedly enhance the comprehensiveness and accuracy of relevant research.

Second, the situation in China is unique and complex, and agenda setting in its media, including social media, involves many factors which should be fully considered and measured in future relevant research. On the other hand, future research could compare the experience of China with that of other countries, especially mature democracies, which will help provide a clearer view of China's agenda-setting problems.

Third, considering the workload and the ubiquitous existence of non-human users such as social robots and water army on Weibo, this study only randomly selected human users' comments on Weibo. Future research could broaden the sample selection and develop more advanced computer-assisted data analysis methods such as automated content analysis to analyze big data.

References

Almighty uncle. (2022, May 26). *Non-public capital is prohibited from engaging in news, and Tencent News "disappeared in an instant?"* Tencent. https://new.qq.com/omn/20220526/20220526A0BVX800.html

Becketti, S. (2013). *Introduction to time series using Stata*. Stata Press.

Cai, M., Luo, H., Meng, X., Cui, Y., & Wang, W. (2023). Network distribution and sentiment interaction: Information diffusion mechanisms between social bots and human users on social media. *Information Processing & Management, 60*(2), 103197.

Chang, G. G. (2022, April 17). In Shanghai, COVID-19 has become China's political disease. *THE HILL*. https://thehill.com/opinion/international/3270498-in-shanghai-covid-19-has-become-chinas-political-disease/

Che, S., Wang, X., Zhang, S., & Kim, J. H. (2023). Effect of daily new cases of COVID-19 on public sentiment and concern: Deep learning-based sentiment classification and semantic network analysis. *Journal of Public Health*, 1-20. https://doi.org/10.1007/s10389-023-01833-4

Chen, L., Shi, J., Guo, Y., Wang, P., & Li, Y. (2019). Agenda-setting on traditional vs social media: An analysis of haze-related content grounded in the extended parallel process model. *Internet Research, 29*(4), 688-703. https://doi.org/10.1108/IntR-08-2017-0315

Chen, Q., Min, C., Zhang, W., Wang, G., Ma, X., & Evans, R. (2020). Unpacking the black box: How to promote citizen engagement through government social media during the COVID-19 crisis. *Computers in human behavior, 110*, 106380. https://doi.org/10.1016/j.chb.2020.106380

Chen, Z., Su, C. C., & Chen, A. (2019). Top-down or bottom-up? A network agenda-setting study of Chinese nationalism on social media. *Journal of Broadcasting & Electronic Media, 63*(3), 512-533. https://doi.org/10.1080/08838151.2019.1653104

Cheshmehzangi, A., Zou, T., & Su, Z. (2022, June 14). Commentary: China's Zero-COVID Approach Depends on Shanghai's Outbreak Control. *Frontiers in Public Health*. https://www.frontiersin.org/articles/10.3389/fpubh.2022.912992/full

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and psychological measurement*, *20*(1), 37-46.

Crossley, G., & Tian, Y. L. (2021, February 28). Foreign journalists in China see 'rapid decline in media freedom': survey. *Reuters*. https://www.reuters.com/article/us-china-media/foreign-journalists-in-china-see-rapid-decline-in-media-freedom-survey-idUSKCN2AT182

Dai, Y., Li, Y., Cheng, C. Y., Zhao, H., & Meng, T. (2021). Government-led or public-led? Chinese policy agenda setting during the COVID-19 pandemic. *Journal of Comparative Policy Analysis: Research and Practice, 23*(2), 157-175. https://doi.org/10.1080/13876988.2021.1878887

Ellis, R. (2022, April 30). Shanghai Residents Complain About COVID Lockdowns. *Webmd*. https://www.webmd.com/covid/news/20220430/shanghai-residents-complain-about-covid-lockdowns

English, A. S., & Li, X. (2021). Mask use depends on the individual, situation, and location—even without COVID-19 transmission: an observational study in Shanghai. *Frontiers in psychology, 12*, 1-11. https://doi.org/10.3389/fpsyg.2021.754102

Feng, G. C. (2015). Mistakes and How to Avoid Mistakes in Using Intercoder Reliability Indices. *Methodology, 11*(1), 13-22. https://doi.org/10.1027/1614-2241/a000086

Ferrara, E. (2018). Measuring social spam and the effect of bots on information diffusion in social media. In S. Lehmann & Y. Y. Ahn (Eds.), *Complex Spreading Phenomena in Social Systems: Influence and Contagion in Real-World Social Networks* (pp. 229-255). Springer.

Gan, N. (2022, June 1). Shanghai is finally 'reopening,' but the trauma of lockdown lives on. *CNN*. https://www.cnn.com/2022/06/01/china/shanghai-lockdown-reopening-intl-hnk-mic/index.html

Granger, C. W. (1969). Investigating Causal Relations by Econometric Models and Cross-spectral Methods. *Econometrica, 37*(3), 424-438. https://doi.org/10.2307/1912791

Hernández, J. C. (2019, July 12). 'We're Almost Extinct': China's Investigative Journalists Are Silenced Under Xi. *The New York Times*. https://www.nytimes.com/2019/07/12/world/asia/china-journalists-crackdown.html

Howlett, M. (1998). Predictable and unpredictable policy windows: Institutional and exogenous correlates of Canadian federal agenda-setting. *Canadian Journal of Political Science, 31*(3), 495-524. https://doi.org/ 10.1017/S0008423900009100

Jiang, Y. (2014). 'Reversed agenda-setting effects' in China case studies of Weibo trending topics and the effects on state-owned media in China. *Journal of International Communication, 20*(2), 168-183. https://doi.org/10.1080/ 13216597.2014.908785

Koetse, M. (2022, April 1). Shanghai Lockdown on Social Media: "Panic Surrounding Epidemic More Dangerous than Epidemic Itself. *What's on Weibo*. https://www.whatsonweibo.com/shanghai-lockdown-on-social-media-panic-surrounding-epidemic-more-dangerous-than-epidemic-itself/

Kosicki, G. M. (1993). Problems and opportunities in agenda-setting research. *Journal of communication, 43*(2), 100-127.

Lagerkvist, J. (2010). *After the Internet, before democracy: Competing norms in Chinese media and society*. Peter Lang.

Li, Y., & Lin, L. (2017). The Chinese Media Framing of the 2015's Tianjin Explosion. *Jurnal Ilmu Komunikasi, 14*(1), 23-42. https://doi.org/10.24002/jik.v14i1.1179

Liu, Y., & Chan, R. H. Y. (2018). The framework of crisis-induced agenda setting in China. *Asia & the Pacific Policy Studies, 5*(1), 18-33. https://doi.org/10.1002/app5.220

Luo, Y. (2013). Mapping agenda-setting research in China: A meta-analysis study. *Chinese Journal of Communication, 6*(3), 269-285. https://doi.org/10.1080/17544750.2013.789426

Luo, Y., & Harrison, T. M. (2019). How citizen journalists impact the agendas of traditional media and the government policy-making process in China. *Global Media and China, 4*(1), 72-93. https://doi.org/10.1177/2059436419835771

McCombs, M. (2005). A look at agenda-setting: Past, present and future. *Journalism studies, 6*(4), 543-557. https://doi.org/10.1080/14616700500250438

McCombs, M., Llamas, J. P., Lopez-Escobar, E., & Rey, F. (1997). Candidate images in Spanish elections: Second-level agenda-setting effects. *Journalism & Mass Communication Quarterly, 74*(4), 703-717. https://doi.org/10.1177/107769909707400404

McCombs, M. E., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public opinion quarterly, 36*(2), 176-187. https://doi.org/10.1086/267990

Melek, G. (2017). A Study on Hürriyet and Twitter Within the Framework of Intermedia Agenda-Setting. *Journal of Communication Theory and Research* (*İletişim Kuram ve Araştırma Dergisi*)*, 44*, 17-41.

Meraz, S. (2009). Is There an Elite Hold? Traditional Media to Social Media Agenda Setting Influence in Blog Networks. *Journal of Computer-Mediated Communication*, 14(3), 682-707. https://doi.org/10.1111/j.1083-6101.2009.01458.x

Nam, B. H. (2021). Online teaching experience as a member of international faculty during the outbreak of COVID-19 in China. In K. Bista, A. Ryan, & R. Chan (Eds.), *Impacts of COVID-19 on International Students and the Future of Student Mobility* (pp. 104-118). Routledge.

Ni, V. (2022, April 15). Shanghai residents forced from homes clash with police over Covid policy. *The Guardian*. https://www.theguardian.com/world/2022/apr/15/shanghai-residents-forced-from-homes-clash-with-police-over-covid-policy

Nili, A., Tate, M., Barros, A., & Johnstone, D. (2020). An approach for selecting and using a method of inter-coder reliability in information management research. *International Journal of Information Management, 54*, 102154. https://doi.org/10.1016/j.ijinfomgt.2020.102154

Peter, J. (2003). Country Characteristics as Contingent Conditions of Agenda Setting: The Moderating Influence of Polarized Elite Opinion. *Communication Research, 30*(6), 683-712. https://doi.org/10.1177/0093650203257844

Russell Neuman, W., Guggenheim, L., Mo Jang, S., & Bae, S. Y. (2014). The Dynamics of Public Attention: Agenda-Setting Theory Meets Big Data. *Journal of Communication, 64*(2), 193-214. https://doi.org/10.1111/jcom.12088

Šķestere, L., & Darģis, R. (2022). Agenda-Setting Dynamics during COVID-19: Who Leads and Who Follows?. *Social Sciences, 11*(12), 556. https://doi.org/10.3390/socsci11120556

Tang, L., & Zou, W. (2021). Health information consumption under COVID-19 lockdown: An interview study of residents of Hubei Province, China. *Health Communication, 36*(1), 74-80. https://doi.org/10.1080/10410236.2020.1847447

Toda, H. Y., & Yamamoto, T. (1995). Statistical inference in vector autoregressions with possibly integrated processes. *Journal of econometrics, 66*(1-2), 225-250. https://doi.org/10.1016/0304-4076(94)01616-8

Wang, Q. (2022). Using Social Media for Agenda Setting in Chinese Government's Communications During the 2020 COVID-19 Pandemic. *Journal of Communication Inquiry, 46*(4), 373-394. https://doi.org/10.1177/01968599221105099

Wang, S. (2008). Changing models of China's policy agenda setting. *Modern China, 34*(1), 56-87. https://doi.org/10.1177/0097700407308169

Wang, V., & Qian, I. (2022, April 7). Shanghai residents in lockdown criticize China's 'zero Covid' strategy. *The New York Times*. https://www.nytimes.com/2022/04/07/world/asia/shanghai-china-covid-protests.html

Wang, J., Zhou, Y., Zhang, W., Evans, R., & Zhu, C. (2020). Concerns expressed by Chinese social media users during the COVID-19 pandemic: content analysis of Sina Weibo microblogging data. *Journal of medical Internet research, 22*(11), e22152. https://doi.org/10.2196/22152

Yang, G. (2003). The Internet and the rise of a transnational Chinese cultural sphere. *Media, Culture & Society, 25*(4), 469-490. https://doi.org/10.1177/01634437030254003

Yang, G. (2009). *The power of the Internet in China: Citizen activism online*. Columbia University Press.

Ye, Y. (2022). How Shanghai's scientists are coping amid harsh COVID lockdown. *Nature, 604*(7906), 409-410. https://doi.org/10.1038/d41586-022-01052-z

Yiu, K. (2022, June 1). As Shanghai COVID-19 lockdown ends, residents celebrate in the streets and fences come down. *ABC News*. https://abcnews.go.com/International/shanghai-covid-19-lockdown-ends-residents-celebrate-streets/story?id=85103023

Yuan, Y. (2017). A Gradual Political Change?: The Agenda Setting Effect of Online Activism in China 1994-2011. In M. Adria & Y. Mao (Eds.), *Handbook of research on citizen engagement and public participation in the era of new media* (pp. 248-268). IGI Global. https://doi.org/10.4018/978-1-5225-1081-9.ch014

Zhang, N., Shi, T., Zhong, H., & Guo, Y. (2020). Covid-19 prevention and control public health strategies in Shanghai, China. *Journal of Public Health Management and Practice, 26*(4), 334-344. https://doi.org/10.1097/PHH.0000000000001202

Zhao, X., Liu, J. S., & Deng, K. (2013). Assumptions behind intercoder reliability indices. *Annals of the International Communication Association, 36*(1), 419-480. https://doi.org/10.1080/23808985.2013.11679142

Zhou, Y., & Moy, P. (2007). Parsing framing processes: The interplay between online public opinion and media coverage. *Journal of communication, 57*(1), 79-98. https://doi.org/10.1111/j.0021-9916.2007.00330.x

Zhou, S., & Zheng, X. (2022). Agenda Dynamics on Social Media During COVID-19 Pandemic: Interactions Between Public, Media, and Government Agendas. *Communication Studies, 73*(3), 211-228. https://doi.org/10.1080/10510974.2022.2082504

Zhu, J., Chen, Q., & Ma, X. (2022). Comparison of News Reports on Public Health Events in Mainstream Media in China and the West: the 2022 Shanghai COVID-19 Outbreak as an Example. *Journal of Humanities and Social Sciences Studies, 4*(4), 17-24. https://doi.org/10.32996/jhsss.2022.4.4.4