



Research article

Cognitively motivated or emotionally charged? Issue-switching mechanism of second screening-facilitated political participation during the 2022 COVID-19 waves in China

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ABSTRACT

This study examines the effects of mass media and mobile media on civil behaviors in China during COVID-19 outbreaks. It explores the media practices of the Chinese public and the psychological mechanisms that led to their protests and boycotts against the government's COVID policies. Chinese official media has a reputation for depoliticizing natural disasters and censoring the online mobilization of collective actions. Based on previous research and theories regarding media multitasking and political communication, this study demonstrates the psychological mechanism by which a special type of media multitasking—second screening—contributed to political participation in a politically restrictive environment. This study contributes to existing research on media multitasking by proposing a unique theoretical framework that entails an issue-based typology of second screening. The framework expands knowledge by highlighting the importance of issue-switching and investigating its psychological influence on political participation. Previous studies have primarily focused on device-switching and its effects, so this study offers fresh insights in this field. Drawing on a nationwide online survey ($N = 1180$) conducted during the late-2022 wave of COVID-19 in China, this study reveals that second screening on official televised COVID-19 news can elicit simultaneous issue-switching among Chinese audiences: from the de-politicized COVID-19 propaganda toward politics. Further, second screening on different issues (i.e., politics vs. health sciences) may instigate political participation through cognitive and emotion channels differently. That is, both political efficacy (cognitive) and negative emotions (emotion) facilitate the process, with the former making a greater contribution.

1. Introduction

Mainland China finally abandoned its zero-COVID-19 policy, which had lasted for three years, after nationwide protests in late 2022 [1]. Days before the protests, citizens had witnessed the repeated poor performance and misbehavior of local officials at COVID-19 briefings occurring in the Henan, Inner Mongolia, and Xinjiang provinces. These press conferences simultaneously sparked online firestorms against authorities [2,3]. Later, offline protests occurred in several major cities [4]. Mainstream Western media interpreted these protests as the largest political disobedience in China since that in the end of the 1980s [5]. Many researchers have

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documented the important role played by social media platforms, such as Weibo and WeChat, in promoting China's COVID-19 protests [6,7]. However, little attention has been given to television's part in spurring those protests, given that television and social media have been the two major information sources through which Chinese audiences access COVID-19 information [8].

Previous studies suggest that audiences often engage in a type of media multitasking called "second screening" when watching television accompanied by smart devices [9]. Therefore, Chinese audiences may have engaged in second screening behaviors when they watched COVID-19 news on television.

This study assesses whether second screening played a part in sparking the aforementioned protests in China, given that when massive political activities are presented as media events, like television debates among presidential candidates, or when a public crisis breaks out that attracts social attention, audiences are likely to engage in second screening [10,11]. This further promotes their political participation (POPA) on those occasions [12–14].

Several significant theoretical issues remain unaddressed in previous studies. First, the current research on second or dual screening has reiterated the liberating effects of the Internet and social media but has not adequately considered how the two screens differ and why such discrepancies matter. Second, the framework that explains how second screening facilitates POPA must be documented with further empirical evidence. For instance, to the best of our knowledge, the role of emotion has not been adequately examined in second screening studies. Third, it remains unclear whether second screening encourages POPA primarily through cognitive or emotional channels. Lastly, in societies with different political systems and media landscapes than those in the West, such as China, second screening behaviors have received less attention [15]. China's media system is known for its television-based propaganda [16] and its effective Internet censorship [17,18]. These conditions leave open the question of whether second screening would promote POPA in China.

To fill these gaps, our study identifies different second screening behaviors (informational and expressive second screening), an issue-based typology of those behaviors, and the mediating variables of negative emotions (NGEMs) and political efficacy (POEF). We focus on identifying the mechanism through which second screening promotes POPA in an environment with strong political restrictions based on observations during the COVID-19 epidemic in China in 2022.

How the issue-switch effect of second screening contributed to re-politicization of COVID-19 issues in China.

Given the nationwide protests that occurred at the end of 2022, this study considers Chinese citizens' POPA against the Zero-COVID policy as one of the many symbols of a trend—the re-politicization of COVID-19-related issues in China. It is an indicator of re-politicization at the individual level. The current study makes an initial observation: Chinese audiences' "second screening" behavior has contributed to the process of "re-politicization". By definition, the politicization of public policymaking refers to situations in which a particular matter is made the subject of public debate or political conflict [19], whereas depoliticization implies the opposite: it aims to prevent a public matter from becoming the subject of political conflict and social controversy [20]. In this sense, "re-politicization" means reapplying political features to a depoliticized issue.

In China, where the one-party regime has managed to depoliticize public affairs, a natural disaster is likely to be depoliticized to avoid channeling popular grievances toward the authorities and undermining the legitimacy of the government [21]. Previous research on the Chinese context around SARS has noted that the official maneuver of depoliticization was to sub-divide the epidemic matters into "political issues" (e.g., political misbehavior or corruption) and "health sciences issues" (e.g., death rate and personal prevention measures) and then highlight the latter while obfuscating or repressing the former through propaganda and censorship [22, 23]. A similar tactic was also noted in the early stages of the COVID-19 outbreak by *The New York Times* [24].

Consequently, Chinese social media users were found to self-censor and avoid engaging in political speech related to COVID-19 and current events in their daily online expressions during the outbreaks [25]. Notably, such an issue-biased proclivity may not be an autonomous act by users but rather a strategy they undertook to cope with the Chinese media environment. In fact, in recent years, Chinese social media users have been developing disobedient (albeit scattered and less organized) behaviors, such as posting irrelevant but safe Weibo messages or spreading political satire by commenting on government media content with political memes and emojis [25]. However, these efforts have not usually been collaborative or thought-provoking. In contrast, second screening allows for the free but purposeful switching of issues, which can then inspire audiences to take simultaneous and coordinated action, thus facilitating a breakthrough against depoliticization.

Researchers have coined and defined the concept of "second screening" [10] as

"a process in which individuals watching television use an additional electronic device or 'screen' to access the internet or social networking sites to obtain more information about the program or event they are watching or to discuss it in real time." (p. 5)

From this perspective, second screening has two essential features: (1) the dual-screen use of a broadcasting TV (first screen) and an Internet-connected smart device (second screen) [13]; and (2) the audience's behaviors on the second screen being largely related to the news or media event broadcasted on the first one. Second screening, in this sense, combines the characteristics of television and Internet media usage, such that television brings synchronicity to the audience's reactions while social media allows the audience to react in a synergistic manner.

Further, to elucidate the process by which second screening encourages POPA, researchers have created two sub-concepts: information consumption and expressive actions [12]. The former emphasizes information acquisition behaviors of second screening, such as the act of watching TV while seeking alternative related information via a second screen [9]. Researchers refer to the latter as the act of expressing opinions and feelings or engaging in conversations about live TV content in real time, such as on a second screen [26,27]. To avoid confusion, this study uses the terms "informational" and "expressive" second screening.

Further, Huber et al. [27] find that not only second screening prompt further discussions online, but also "this discussion might, subsequently, lead to conversations about other topics in other discursive contexts" [27, p. 4]. That is to say, audiences' engagement in

real-time online conversations related to live televised news may lead to discussions about other topics. In short, audiences switch between issues during expressive second screening.

Therefore, the current study holds that the issue-switching mechanism in second screening might lead Chinese audiences to simultaneously shift from health sciences issues to political ones and collaboratively manifest civic disobedience. Further, it could “re-politicize” the COVID-19 issue. In one example, Chinese feminists endeavored to re-politicize COVID in China by mobilizing an online social movement that encouraged political satire against the official artificial intelligence (AI) live streamer “Jiang Shanjiao” (an anime-style teenager), promoted by the Communist Youth League of China (CYLC). They believed the official AI streamer was too frivolous to represent Chinese women fighting the epidemic [7]. Similarly, for second-screening audiences, the televised official COVID-19 news might also have functioned as a common target, as it drew public attention to their compatriots’ status. In the meantime, networked smart devices served as portals to expand information accessibility and build solidarity and communality among individuals.

However, “issue-switching” is not adequately examined in other dual-screening research, probably because most of these studies were conducted in Western democracies wherein political dissent is not taboo and, in public discourse, COVID-19 has always been a political issue as well as a scientific one. Nonetheless, given China’s situation, this issue-switching process warrants closer examination among Chinese audiences.

According to Huber et al. [27], issue-switching seems to be more likely in expressive second screening. Therefore, to capture the process through which issue-switching in second screening assists the re-politicization of COVID-19 in China, the current study finds it necessary to distinguish the “expressive second screening of political issues” (ESSP) from the “expressive second screening of health sciences issues” (ESSS). In addition, as there is limited prior research on issue-switching during the second screening process, this study avoids categorizing second screening by specific issues. To avoid confusion, we use the term “informational second screening of COVID-19 news” (ISSC) to refer to audiences’ informational second screening of televised official COVID-19 news content.

Owing to the limited prior literature on classifying second screening behaviors according to the type of issue, this study provides working definitions of the newly coined terms. Table 1 illustrates three specific sub-categories of second screening during COVID-19 outbreaks in China.

Regarding the relationship between informational and expressive second screening, previous studies have demonstrated that the former usually precedes and leads to the latter [28]. In a sense, if the issue-switching process in second screening re-politicizes the official COVID-19 agenda as inferred, we can derive the following. First, as depoliticized television news and related online information naturally trigger health sciences-related discussions, ISSC should lead to ESSS; second, ESSS and ESSP should be correlated; third, ISSC should lead to ESSP. Though previous studies have not specified whether issue-switching may occur when informational second screening leads to expressive second screening, given the prevalence of incidental exposure and the convenience of moving from site to site online [29], this study holds that viewers may be exposed to other people’s political comments or discussions related to COVID-19 news while actively seeking information online and may instantly join the conversation and express themselves. Therefore, issue-switching may also occur when ISSC leads to ESSP.

Hence, this study proposes the following hypotheses.

H1. Chinese audience members’ ESSS is positively correlated with their ESSP during COVID-19 outbreaks in China.

H2. Chinese audience members’ ISSC positively influences their (a) ESSS and (b) ESSP during COVID-19 outbreaks in China.

This research aims to not only highlight the results of re-politicization (e.g., POPA), but also to explore its underlying process. We hold that through informational and expressive second screening, Chinese audiences may switch the censored and depoliticized COVID-19 agenda back to its normal status, where it yields as many political issues as scientific ones [30]. This procedure will be validated if the path from ISSC to ESSP is found to be significant. Moreover, ESSP and ESSS may further lead to POPA, while POEF and NGEM may serve as mediators in the process. The next section will focus on how POEF may serve as a mediator.

2. The mediating role of political efficacy

POEF has been studied extensively since the 1950s. Campbell et al. [31] defined POEF as the “feeling that individual political action does have, or can have, an impact upon the political process, namely, that it is worthwhile to perform one’s civic duties” (p. 187). The focus of this concept is not only on individuals’ ability, but also their cognition. In psychology, the term “cognition” is commonly used in the context of an individual’s psychological functions, particularly within the framework of information processing, indicating the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses [32]. In the study of

Table 1
Typology of second screening.

Terminology	Working Definition
Informational second screening of COVID-19 news (ISSC)	Audiences acquire online information related to the COVID-19 news content that they are watching on TV
Expressive second screening of health sciences issues (ESSS)	Audiences engage in real-time online health sciences discussion or expression related to the COVID-19 news content that they are watching on TV
Expressive second screening of political issues (ESSP)	Audiences engage in real-time online political discussion or expression related to the COVID-19 news content that they are watching on TV

social cognition and political psychology, the term is used to explain attitudes, attribution, and group dynamics [33]. Many researchers in the field of political science and communication studies have considered political efficacy as a cognitive factor. For example, Caprara et al. [34] noted that “political efficacy is addressed within the framework of social cognitive theory” (p. 1002).

Though POEF was initially conceived as unidimensional, later studies have defined it as a three-dimensional concept comprising internal, external, and collective efficacy [35]. Internal efficacy primarily pertains to individuals’ perceived influence based on their own capabilities, while external efficacy concerns the perceived influence stemming from the functioning of the political system. Previous studies have demonstrated a correlation between internal political efficacy and perceived competence, civic engagement indicators, and interest in politics [36,37]. Conversely, external political efficacy has been associated with general trust in the political system and institutions [38]. Additionally, researchers have introduced the concept of collective efficacy, which reflects an individual’s belief in the potential impact of collective actions [35]. Ultimately, these dimensions reflect individuals’ cognition regarding their ability and effectiveness of their POPA. In our context, these perceptions and feelings are outcomes of second screening, which involves a media multitasking approach to information processing.

As mentioned above, many prior studies have suggested that second screening during political events or crises mobilizes POPA. In terms of its mechanism, previous studies suggest that relatively free discussions online can boost the POEF of the audiences [39]. By adapting a combination of communication mediation and cognitive mediation models in the second-screening context, Chen [28] demonstrates a mechanism wherein informational second screening leads to POPA through the serial mediation of expressive second screening and POEF. Moreover, POEF mediates the positive relationship between expressive second screening and POPA. The researcher explains that expressive second screening helps audiences crystallize their dispositions, as the political expression entails mental elaboration and the collective consideration of diverse arguments from various sources [40]. Once the public believe in their ability to make a difference and that the government will respond accordingly, they will be more willing to take practical action [41].

Chen [28] neither hypothesized a direct relationship between informational second screening and POPA, nor did she find a significant relationship between the former and POEF. However, given that no further explanations were provided in her paper, we would like to revisit this hypothesis and her results. Informational second screening enables viewers to actively access extensive information related to the official televised news content, thereby offering an opportunity for viewers to autonomously audit the details and backgrounds of the news. Such active media usage may trigger audiences’ internal efficacy, or self-efficacy [42,43], and prime their awareness of their responsibilities that may contribute to POPA. In addition, as mentioned above, incidental exposure during information seeking may lead people to join open conversations online [30]; thus, some of the impact of expressive second screening is also attributable to informational second screening, such that they may both boost collective efficacy and inspire political engagement.

Based on previous research, we argue that informational second screening may also boost POEF and promote POPA. In addition, as both ESSP and ESSS fall under the category of expressive second screening, we consider that both have a direct impact on POPA. Hence, this study proposes the following hypotheses.

H3a. The positive relationship between the Chinese audience members’ ISSC and POPA is mediated by their POEF.

H3b. The positive relationship between the Chinese audience members’ ESSS and POPA is mediated by their POEF.

H3c. The positive relationship between the Chinese audience members’ ESSP and POPA is mediated by their POEF.

3. Exploring the mediating role of negative emotions in second screening

Emotions predict POPA, information processing, and decision-making [44,45]. Moreover, many researchers have pointed to the decisive role of emotions in influencing the relationship between epidemic information exposure and the behavioral intentions of Chinese people during the COVID-19 pandemic (e.g. Refs. [46,47]). In addition, visual media are more likely than text to trigger emotions, capture users’ attention, and promote political engagement [48]. As a behavior that explores visual and textual media, second screening can be assumed to arouse emotions. Nonetheless, little prior dual-screening scholarship has examined emotions (e.g. Refs. [49,50]). The current study fills this gap.

Previous studies considering the valence of emotions aroused in public crises demonstrate that, during pandemics, social media users often post messages conveying NGEMs [51,52], whereas positive sentiments are less prevalent online [53]. Moreover, exposure to online speculations and chaotic information may lead to NGEMs for social media users confronted with COVID-19 [54,55]. Meanwhile, during disasters, TV news viewing was found to be positively associated with the NGEMs of audiences [56]. Thus, the emotions elicited by the second screening during COVID-19 should be mainly negative. Therefore, to establish a dialogue between the literature and our context, this study finds it necessary to include NGEMs as a key factor for mapping the mechanism of second screening promoting POPA.

NGEMs, including anger, fear, anxiety, and sadness, are frequently assessed together, regardless of their individual characteristics [57]. However, anger and anxiety are recognized as action-oriented NGEMs and are considered to be predictors of political activities [58]. Several studies define anger as a goal-pursuing and approach-linked emotion that promotes confrontation, physical exercise, and a “fighting” reaction [59,60]. In political psychology, researchers report that perceived unfairness evokes anger. Further, anger resulting from perceived political injustice can motivate “corrective” actions and a willingness to restore fairness [60,61].

Anxiety, by contrast, is elicited when an ambiguous, uncertain, or less specified risk or threat is detected, which leads to both approach and risk-avoidance reactions [62,63]. Moreover, anxiety influences attitudes and political behavior, such as those leading to deliberation [64] and other low-cost political actions [60].

Owing to their action-oriented attributes, this study identifies anger and anxiety as the most pertinent NGEMs that may be

provoked by second screening televised COVID-19 news and, subsequently, promote political action in China. Therefore, we suggest that NGEMs, namely, anger and anxiety, may function as a mediator, paralleling POEF, in the relationship between second screening behaviors and the POPA of Chinese people. Hence, we propose the following hypotheses.

H4a. Chinese audience members' NGEMs mediate the relationship between ISSC and POPA.

H4b. Chinese audience members' NGEMs mediate the relationship between ESSS and POPA.

H4c. Chinese audience members' NGEMs mediate the relationship between ESSP and POPA.

Further, Chen [28] maintains that second screening differs from other media multitasking because it facilitates active learning and POEF and, therefore, boosts cognitive performance, whereas the others distract and limit cognitive capacity [65]. However, such a claim contradicts the notion that emotions, particularly anger, can inhibit cognitive processes [58]. In this regard, it remains unclear whether the cognitive or emotional channel contributes more to the second screening process, which leads to political engagement. Hence, this study proposes the following research question (RQ).

RQ1: Which mediator contributed to the relationship between the second screening behaviors and political engagement of Chinese audience members during COVID-19—POEF or NGEMs?

In summary, this study proposes six major variables: three independent variables—ISSC, ESSP, and ESSS; two mediators—POEF and NGEMs; and one dependent variable—POPA.

Moreover, given that informational second screening is somehow considered a precursor of expressive second screening by previous research [27,28], this study also inquires how ISSC can affect POPA through multiple mediators, including ESSS, ESSP, POEF, and NGEMs. The answers are critical to uncovering the nuances of how Chinese audiences have processed and reacted to television news on state media during national crises. In this context, this study aims to explore and compare the effects of different indirect paths between ISSC and POPA based on the hypotheses. Therefore, we propose the second RQ as follows.

RQ2: To what extent does Chinese audience members' ISSC indirectly influence their POPA through the mediation of ESSS, ESSP, POEF, and NEGEMs?

As we are comparing multiple direct and indirect links, as well as the correlation between factors, structural equation modeling (SEM), and path analysis would be most helpful and appropriate. Given the possible associations that we have proposed, a hypothesized model is given in Fig. 1.

4. Materials and methods

4.1. Sampling

An online survey was administered in China in early December 2022, when online collective activities and nationwide protests had just ended. Participants were recruited from the national research panels managed by Credamon, one of the largest (i.e., with approximately three million users online) and most reliable survey platforms in mainland China. A stratified random sampling

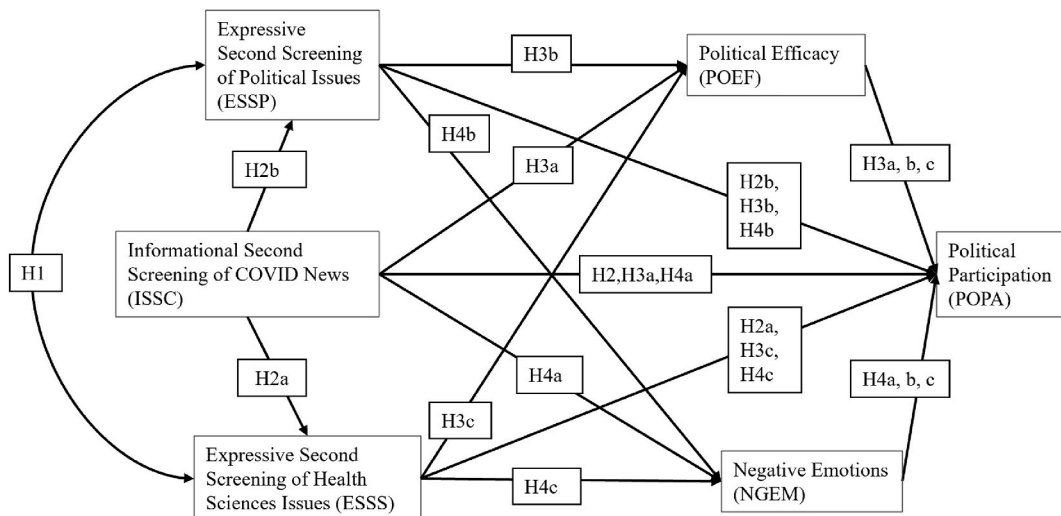


Fig. 1. Proposed research model.

procedure was applied in order to reflect the overall situation in China. The goal was to collect at least 1200 samples from different regions across the country. To achieve this, this study referred to the 2020 China Population Census data to determine the required sample size for each gender and age stratum. These requirements were then provided to a survey platform, who randomly recruited participants from its panel and selected individuals for each stratum randomly. This ensured that all eligible participants had an equal chance of being included in the study and that the sample strata accurately reflected the distribution of the Chinese population in terms of gender and age as much as possible. However, owing to the exclusion of inadequate samples, such as straight-liners and speeders, the final result was not perfectly consistent with the expected sample size for each level. Nevertheless, this outcome is still within an acceptable range. Of the 1300 finished questionnaires, 1180 were identified as valid. Participants provided clear consent to be involved in the online survey. Females accounted for 48.7 % ($N = 575$) of participants, while 51.3 % ($N = 605$) were male. Almost 10 % of the sample was older than 60 years ($N = 121$), whereas approximately half of the participants (47.3 %) were middle-aged, ranging from 30 to 49 years ($N = 566$).

Notably, the study had a diverse sample size, with participants hailing from more than thirty provinces and major cities across China (see Fig. 2). The heatmap presented in Fig. 2 illustrates the standardized mean values for each variable in each sampling region. These regions span from highly developed metropolises like Beijing, Shanghai, and Canton to lesser-developed regions like Xinjiang and Inner Mongolia. According to the regional distribution (Table 2), our nationwide sample covered all the seven geographical regions in China. Though people with a bachelor’s degree have been overly represented, the diversity of our sample provides a unique and comprehensive view of the experiences and perspectives of people from different regions in China.

4.2. Measures

4.2.1. Informational second screening of COVID-19 news

The survey instrument items for the second screening variables were based on previous studies [10,28]. For ISSC, participants were asked: “During the latest COVID-19 outbreak, how often did you watch COVID-19 news programs on television (e.g., press briefings) while using a second screen to seek more information related to the televised news from: (1) search engine(s), (2) social media, (3) informational pages (official or news media), and (4) other sources available on a second screen?” These four items were measured on a

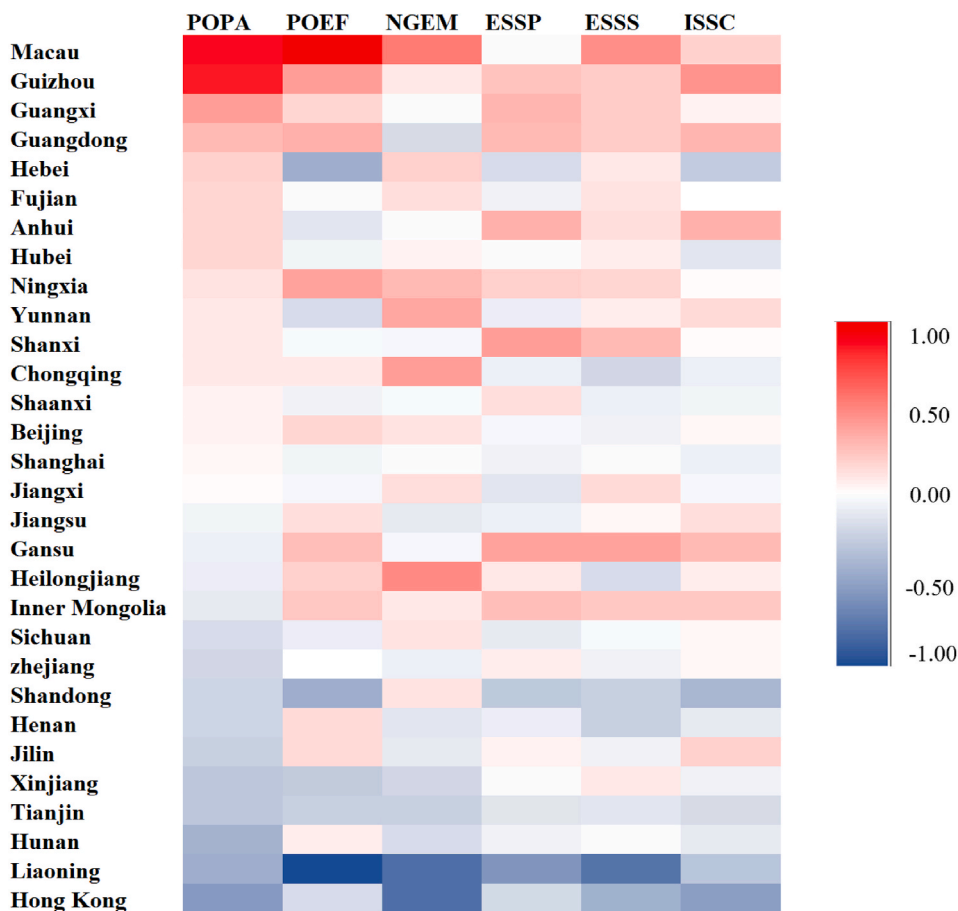


Fig. 2. Heatmap of standardized mean for each variable in each sampling area.

Table 2
Demographics of survey participants.

		<i>n</i>	Percentage
Age	18–29	299	25.3 %
	30–39	273	23.1 %
	40–49	293	24.8 %
	50–59	194	16.4 %
	60+	121	10.3 %
	Total	1180	100.0 %
Gender	Male	605	51.3 %
	Female	575	48.7 %
	Total	1180	100.0 %
Education	Middle School	20	1.7 %
	High School	79	6.7 %
	Bachelor's	722	61.2 %
	Master's	328	27.8 %
	Doctorate	31	2.6 %
	Total	1180	100.0 %
Monthly Income	2000 CNY and below	422	35.8 %
	2001–5000 CNY	204	17.3 %
	5001–10,000 CNY	354	30.0 %
	10,001–20,000 CNY	175	14.8 %
	20,001 CNY or more	25	2.1 %
	Total	1180	100.0 %
Region	Central China	173	14.7 %
	East China	333	28.2 %
	North China	210	17.8 %
	Northeast China	49	4.2 %
	Northwest China	74	6.3 %
	South China	168	14.2 %
	Southwest China	173	14.7 %
	Total	1180	100.0 %

4-point scale (1 = never to 4 = always) and averaged to construct the index ($M = 3.02$, $SD = 0.71$, $\alpha = 0.81$).

4.2.2. Expressive second screening of health sciences and political issues

Regarding ESSS, the participants were asked: “During the latest COVID-19 outbreak, how often did you watch televised news programs about COVID-19 while engaging in real-time online health sciences (e.g., death rate or personal prevention measures) discussions or expressions related to the COVID-19 news through (1) posting, (2) commenting, (3) forwarding, (4) discussing, (5) clicking like/dislike or emoji, or (6) other expressive activities available?” These six items were all measured on a 4-point scale (1 = never to 4 = always) to avoid ambiguity and averaged to construct the index of ESSS ($M = 2.36$, $SD = 0.68$, $\alpha = 0.80$). Regarding the ESSP, the items were the same, but with a different question, asking “How often did you watch televised news programs about COVID-19 while engaging in real-time online political discussions or expressions (e.g., political misbehavior or corruption) related to the COVID-19 news?” Here too, items were averaged to construct the index of ESSP ($M = 2.09$, $SD = 0.68$, $\alpha = 0.82$).

4.2.3. Political efficacy

To assess POEF, six items were adapted from prior research [35] and measured on a 7-point scale (1 = strongly disagree to 7 = strongly agree): (1) “I am capable of understanding political matters in China”; (2) “I am capable of participating in political affairs in China”; (3) “the collective action of Chinese people can have a great impact on public affairs”; (4) “the collective action of Chinese people can improve society” (5) “the Party (i.e., the Chinese Communist Party); and state respond to public opinion effectively”; and (6) “the government and its officials respond to public opinion effectively.” Items 1 and 2 measured internal efficacy, Items 3 and 4 measured collective efficacy, and Items 4 and 5 measured external efficacy. All six items were averaged to form the measure of POEF ($M = 4.64$, $SD = 0.94$, $\alpha = 0.79$). Moreover, external efficacy ($M = 5.11$, $SD = 1.14$) was rated the highest compared with individual ($M = 4.68$, $SD = 1.10$) and collective efficacy ($M = 4.13$, $SD = 1.26$).

4.2.4. Negative emotions

The measures of anger and anxiety were adapted from Kim [66] and the Hospital Anxiety and Depression (HAD) scale [67]. There were six items in total, including (1) “I felt angry”; (2) “I felt as if I had been misled and unjustly treated”; (3) “I had an indignant feeling, as if something unjust was about to happen”; (4) “I felt tense”; (5) “worrying thoughts went through my mind”; and (6) “I had a frightened feeling, like there were butterflies in my stomach.” Participants were asked to rate how often they felt the way described by the statement during the latest wave of COVID-19 on a 4-point scale (1 = never to 4 = always). These items were averaged to construct the scale of NGEM ($M = 2.07$, $SD = 0.60$, $\alpha = 0.71$).

4.2.5. Political participation

This study specifies that China’s authorities are the target of civic POPA. Participants were asked if they conducted any of the nine

types of political activities, either online or offline, against the authorities during the recent COVID-19 outbreaks: (1) call others and ask them to pay attention to certain issues or current events online; (2) provide opinions and suggestions on public affairs online; (3) satirize, tease, or criticize political figures or institutions online; (4) participate in online collective actions (such as collective posting or co-signing a petition); (5) initiate online collective actions; (6) participate in offline collective actions (a rally or delivering a petition); (7) initiate offline collective actions; (8) donate to collective actions; and (9) publicly express opinions on political figures or institutions via offline channels. Responses to each statement were coded in binary form (1 = yes, 0 = no). The points were summed into a single index of POPA ($M = 1.85$, $SD = 1.35$).

4.2.6. Controls

The following demographic characteristics were controlled for: age, gender, education level, and personal income per month. For details, see Table 2.

5. Results

5.1. Descriptive analysis

Our investigation also included questions regarding media usage and the frequency of second screening. The data show that, to access information relevant to COVID-19, 82.5 % ($n = 973$) of participants use mobile media and 71.3 % ($n = 841$) watch TV, whereas only 22.5 % read newspapers and 39.9 % listen to the radio. Moreover, 69.7 % ($n = 822$) of participants reported that they always engage in second screening when accessing COVID-19 news during the 2022 outbreaks in China, whereas only 2 participants reported that they never try second screening. Our findings are consistent with those of previous studies regarding television and the significant role that televised news plays in COVID-19 news consumption (see Ref. [8]). In short, not only social media but also television plays a significant role in COVID-19 news consumption in China, while second screening is common among Chinese audience members.

5.2. Test of model fit

This study used Mplus 8 to conduct a path analysis with maximum likelihood estimation. Demographic variables including gender, age, education level, and income were residualized for each key variable before the hypothesized model was tested to free the key variables from the impact of the demographics. Table 3 indicates the correlation between key variables. ISSC and NGEMs, as well as POEF and NGEMs, were found to be uncorrelated.

5.3. Testing the proposed model

The proposed model hypothesized that the positive relationship between ISSC and POPA is mediated by multiple mediators. The results show that the total effect ($\beta = 0.238$, $p < 0.001$), total indirect effect ($\beta = 0.163$, $p < 0.001$), and direct effect ($\beta = 0.075$, $p < 0.05$) of ISSC on POPA were all significant. These results signify that informational second screening behavior can directly promote POPA. Moreover, the direct effect is mediated by ESSS, ESSP, POPA, and NGEMs. For RQ2, the only non-significant indirect path was a serial mediation, namely $ISSC \rightarrow ESSP \rightarrow NGEM \rightarrow POPA$ ($\beta = -0.002$, $p = 0.109$). This may be because the proposed relationships between ISSC and NGEMs ($\beta = -0.040$, $p = 0.167$), as well as ESSP and NGEMs ($\beta = -0.078$, $p = 0.055$), were the only two direct relationships that were found to be non-significant. In other words, ISSC and ESSP did not significantly promote NGEMs among Chinese audiences during COVID-19 outbreaks in late 2022. Fig. 3 shows the finalized model with regression coefficients.

5.4. Test of hypotheses

5.4.1. Examining issue-switching

Our hypotheses regarding the relationships between the three focal variables were fully supported. First, ISSC positively predicts ESSS (H2a: $\beta = 0.346$, $p < 0.001$) and ESSP (H2b: $\beta = 0.280$, $p < 0.001$). Thus, H2a and H2b are supported. Moreover, H1 proposed that ESSS is positively correlated with ESSP. This hypothesis is also supported (H1: $\beta = 0.637$, $p < 0.001$). These findings imply that issue-

Table 3

Partial correlation of focal variables.

	1	2	3	4	5
1. Informational second screening of COVID news (ISSC)	–				
2. Expressive second screening of health sciences issues (ESSS)	0.346***	–			
3. Expressive second screening of political issues (ESSP)	0.280***	0.671***	–		
4. Political efficacy (POEF)	0.366***	0.379***	0.408***	–	
5. Negative emotions (NGEM)	0.043	0.237***	0.114***	0.043	–
6. Political participation (POPA)	0.238***	0.395***	0.35***	0.302***	0.175***

Note: $N = 1180$ * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

According to Hu and Bentler [68], our validity test indicates a good model fit: AIC = 15233.317 and BIC = 15355.076; the $\chi^2_{(1)} = 1.056$ with $p = .304$ and $\chi^2/df = 1.056$; RMSEA = 0.007, CFI = 1.000, TLI = 0.999, and SRMR = 0.005. Therefore, the hypothesized model is acceptable.

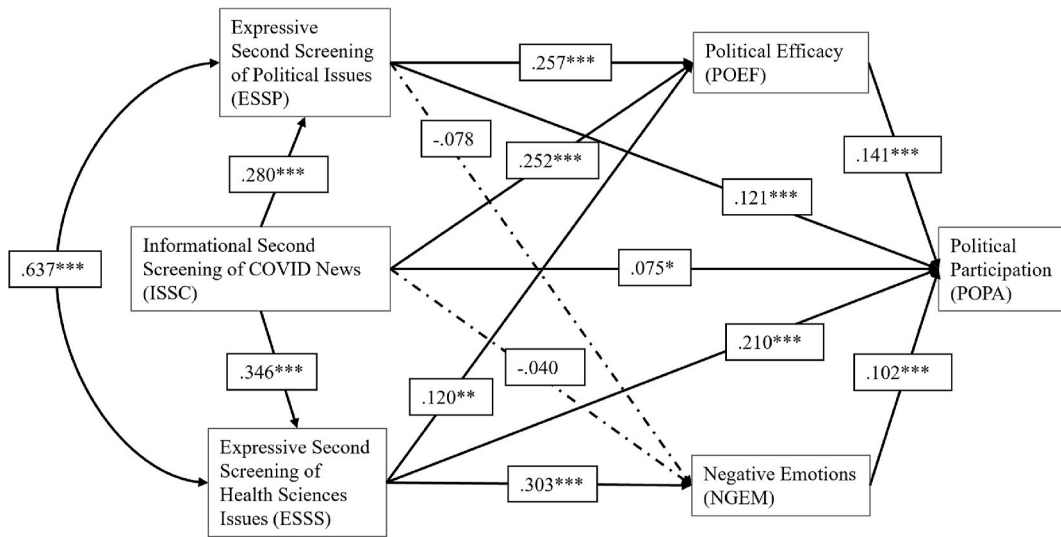


Fig. 3. Finalized model with regression coefficients.

switching can occur not only during expressive second screening, as noted by previous research [27], but also during the transition from informational second screening to expressive second screening, such that watching the health sciences-centered, depoliticized COVID-19 television news while seeking related information online can simultaneously facilitate political expressions and discussions against the Chinese authorities during COVID-19 outbreaks in late 2022.

Path14 (see Table 4) was found to be significant; therefore, ESSP mediated the positive relationship between ISSC and POPA. Thus, we can conclude that ISSC in China can trigger political discussions and then instigate political engagement. Hence, this study finds that second screening has contributed to re-politicizing the COVID-19 issue in China by triggering a bandwagon of issue-switching and promoting POPA. This finding extends the current literature in terms of the impact of issue-switching in second screening.

5.4.2. Examining mediation by political efficacy and negative emotions

H3 and H4 proposed that POEF and NGEMs mediate the relationship between audiences’ second screening behaviors and POPA. H3a ($\beta = 0.035, p < 0.001$), H3b ($\beta = 0.017, p < 0.05$), and H3c (H3b: $\beta = 0.036, p < 0.001$) were all found to be significant; therefore, POEF was a significant mediator between all 3 s screening behaviors and POPA. Moreover, though Chen [28] found that informational

Table 4 Summary of hypotheses testing for H1–H4 & RQ2.

Hypotheses	Path No.	Relationships	Estimate β	95 % CI LLCI ULCI	Two-Tailed P-Value	Hypothesis decision
		Total effect	0.238	0.190 0.284	0.001***	Supported
		Total indirect	0.163	0.137 0.191	0.001***	Supported
H1	1	Correlation ESSS ↔ ESSP	0.637	0.600 0.672	0.001***	Supported
H2a	2	Direct effect ISSC → ESSS	0.346	0.300 0.391	0.001***	Supported
H2b	3	Direct effect ISSC → ESSP	0.280	0.235 0.326	0.001***	Supported
H3a, H4a	4	Direct effect ISSC → POPA	0.075	0.026 0.122	0.011*	Supported
H3b, H4b	5	Direct effect ESSS → POPA	0.210	0.151 0.268	0.001***	Supported
H3c, H4c	6	Direct effect ESSP → POPA	0.121	0.068 0.175	0.001***	Supported
H3a	7	Indirect effect ISSC → POEF → POPA	0.035	0.023 0.050	0.001***	Supported
H3b	8	Indirect effect ESSS → POEF → POPA	0.017	0.008 0.030	0.010*	Rejected
H3c	9	Indirect effect ESSP → POEF → POPA	0.036	0.024 0.052	0.001***	Supported
H4a	10	Indirect effect ISSC → NGEM → POPA	-0.004	-0.010 0.000	0.205	Rejected
H4b	11	Indirect effect ESSS → NGEM → POPA	0.031	0.017 0.049	0.001**	Supported
H4c	12	Indirect effect ESSP → NGEM → POPA	-0.008	-0.018 0.000	0.105	Rejected
RQ2	13	Indirect effect ISSC → ESSS → POPA	0.073	0.051 0.098	0.001***	Supported
	14	Indirect effect ISSC → ESSP → POPA	0.034	0.019 0.052	0.001***	Supported
	15	Indirect effect ISSC → ESSS → POEF → POPA	0.006	0.003 0.011	0.013*	Supported
	16	Indirect effect ISSC → ESSP → POEF → POPA	0.010	0.006 0.015	0.001***	Supported
	17	Indirect effect ISSC → ESSS → NGEM → POPA	0.011	0.006 0.017	0.002**	Supported
	18	Indirect effect ISSC → ESSP → NGEM → POPA	-0.002	-0.005 0.000	0.109	Rejected

Note: Standardized regression coefficients (β) represented with 95 % confidence interval bias-corrected bootstrap test. ISSC = informational second screening of COVID news. ESSS = expressive second screening of health sciences issues. ESSP = expressive second screening of political issues. POEF = political efficacy. NGEM = negative emotions. POPA = political participation; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.00$.

second screening cannot improve POEF, we found the opposite result, given that H3a is supported.

NGEMs were found to be a significant mediator between ESSS and POPA (H4b: $\beta = 0.031, p < 0.01$), whereas ISSC and ESSP cannot significantly influence POPA through the mediation of NGEMs (H3a: $\beta = -0.004, p = 0.205$; H3c: $\beta = -0.008, p = 0.105$). This was also because ISSC and ESSP did not directly evoke anger or anxiety, while ESSS did ($\beta = 0.303, p < 0.001$).

These findings suggest that informational second screening and expressive second screening may function differently in China: watching the health sciences-centered, depoliticized television news on COVID-19 while seeking related information online cannot provoke anger or anxiety, whereas discussing health sciences issues such as the symptoms and death rate of the Omicron variant may lead to worry and anger.

Moreover, these findings imply that our issue-based classification of expressive second-screening behaviors has revealed theoretical implications, as health sciences issues evoke both cognitive and affective processes, whereas political issues are more likely to elicit cognitive rather than affective channels. In this sense, we may anticipate that when Chinese viewers were engaged in political expression and discussion related to the live TV news content, they were (to some extent) rational, rather than scared or outraged.

Regarding RQ1, this study specified in Mplus 8 the contrast between the mediations proposed by H3 and H4. Regarding the indirect effect between ISSC and POPA, POEF was significantly more effective than NGEMs in playing a mediating role ($\beta = 0.040, p < 0.001$). Regarding the indirect effect between ESSP and POPA, POEF was also significantly more effective than NGEMs in terms of mediation ($\beta = 0.044, p < 0.001$). However, regarding the indirect effect between ESSS and POPA, the difference between POEF and NGEMs as mediators was found to be non-significant ($\beta = -0.014, p = 0.243$). In this sense, we may conclude that POEF is generally more effective than NGEMs in mediating the relationship between the Chinese audiences' second screening behaviors and POPA during COVID-19 outbreaks in late 2022.

6. Discussion

This study provides insight into the media habits of the Chinese public and the psychological mechanisms that might have led to protests and boycotts against the government's COVID policies. As these events are uncommon in China, it is essential to understand the factors that motivate people to participate. Some recent studies have also aimed to validate the spurring influence of Chinese individuals' utilization of social media on public engagement and collaborative efforts [69,70]. This research further explores this topic by proposing an explanatory framework that provides a suitable analytical toolkit for studying the dynamics between media multitasking and civil behaviors.

This framework makes novel contributions to the literature by presenting an issue-based typology of second screening. We found that second screening behavior centered on different issues may influence people's cognition and emotions differently. While all 3 screening behaviors promoted POEF, only ESSS spurred NGEMs. This is incompatible with our hypotheses, as ISSC and ESSP did not lead to NGEMs. However, this finding still aligns with and adds support to prior research on the utilization of social media in China during the pandemic, which revealed its potential to intensify feelings of stress and anxiety [71].

Nevertheless, considering that POEF is generally more decisive than NGEMs as a mediator, this study suggests that second screening behaviors boost political engagement in a primarily rational manner. These results could be attributed to the "positive energy effect" of the Chinese media environment. According to prior research, China's official propaganda system, which includes all television stations and networks, provides what is referred to as "positive energy" content. This content "produces self-disciplined docile subjects, and quietly resolves the tension between mobilization and control by having subjects internalize the interests of the state as their own good" ([72], p. 201). Therefore, Chinese audiences have always been cautious and rational when dealing with COVID-19 and political information. Secondary screening behaviors focused on different issues exhibit differences in their evocative pathways, affecting Chinese psychological activity differently. It is unclear whether this difference in psychological responses based on issues holds true in other cultural or political contexts. It appears that specific political, media, and cultural contexts can moderate the psychological pathways of human information processing on specific topics. However, this inference still warrants further examination. Moreover, as external efficacy was rated the highest as a sub-dimension of POEF, this study indicates that not only do the Chinese people realize that their political opposition is likely to be useful and that they are not alone, but also that they believe the Chinese government will follow the wishes of the public and abandon the harsh COVID-19 lockdowns.

The discrepancy between the two screens during a crisis is particularly significant in a politically rigid context such as that of China. The first screen is loaded with propaganda and manipulation from the authorities, while the second screen conveys the public's disobedience. Through second screening, Chinese audiences are almost "provoked" or "reminded" by the official agenda to recognize, participate in, and implement a process of mass deliberation against the official will. This is similar to the CYLC example [7].

Moreover, this study shows that the second screening behaviors of Chinese audiences have contributed to the process of re-politicization of COVID-19 issues. The path analysis demonstrates the statistical significance of this contribution, particularly in the path from ISSC to ESSP. This indicates a change in audiences' focus after the government-dominated COVID-19 propaganda was scrutinized during their second screening. Additionally, we have identified a statistically significant mediating path from ISSC through ESSP to POPA, suggesting that the issue-switch triggered by second screening can ultimately stimulate POPA. These key points convey the essential information that we expect our model testing to reflect. Second screening matters in politically restrictive environments such as that of China, as it brings synchronicity and synergy to people's disobedience by triggering a bandwagon of issue-switching. Specifically, people gathered around the live televised news, seeking alternative information, communicating with one another, and congregating into a discontented but rational political force. Consequently, scattered and subtle resentments were encouraged to consolidate and emerge together. The important aspect of issue-switch in second screening is that it represents a form of attentional reallocation, heightening attention to the characteristics of the political regime, the relational implicature, and the meaning of the

participatory activities. Overall, these findings help us better understand the significant power of connective action, which is reliant on rational citizens, and the further development of regime resilience on the part of the Chinese political system in response to digital activities [46].

7. Limitations and future research

This study presents certain limitations and opportunities for further exploration. While it offers insights into the dynamics between first and second-screen usage, a deeper analysis at the content level is warranted. Future research could enrich this understanding through detailed social media analysis and content evaluation. Additionally, the study highlights variations within mediating variables, such as different types of efficacies and NGEMs, yet their specific roles within the model remain unexplored.

As people with a university degree were oversampled, our findings did not include the additional general population in China, suggesting the need for more inclusive sampling in future studies. Moreover, the use of a cross-sectional survey method limits the ability to establish causal relationships. Future research, employing panel designs and comparative studies, would be essential for substantiating and refining our findings, offering a more comprehensive view of the subject matter.

8. Conclusion

This research offers significant insights into the impact of TV and mobile media on civil behaviors in China during COVID-19, emphasizing the role of media multitasking, particularly second screening, in fostering political participation. Our findings illustrate how second screening facilitated a shift in focus among Chinese audiences from depoliticized COVID-19 content to political issues, thereby contributing to protests and boycotts against government policies. This shift, predominantly rational in nature, was influenced both cognitively, through political efficacy, and emotionally, though to a lesser extent. A key contribution of this study is the development of an issue-based typology of second screening, which has broadened the understanding of media multitasking's role in political engagement. This suggests that in China's unique media environment, characterized by its "positive energy" content, audiences engage with media in a cautious and rational manner. Our research also indicates that the Chinese public not only acknowledges the potential effectiveness of their political opposition but also harbors a collective belief in the government's responsiveness to public opinion. In conclusion, this study highlights the complex dynamics of media consumption and political participation in the digital age, particularly in contexts with restrictive political environments like China.

Ethical statement

The study protocol has been approved by the Survey and Behavioral Research Ethics Committee of the Chinese University of Hong Kong (reference No. SBRE-22-0514) under the project titled "Television Use and Civic Engagement in COVID-19 Outbreaks." The original title of the study evolved naturally as the paper underwent revisions.

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Data availability statement

The data that support the findings of this study are available from the authors upon reasonable request.

CRediT authorship contribution statement

Chen Xing: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Validation, Visualization, Writing – original draft, Writing – review & editing. **Yang Hu:** Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Jingtai Tang:** Writing – review & editing, Validation, Supervision, Resources, Project administration, Funding acquisition.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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