Information credibility under authoritarian rule: evidence from China

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Do citizens under authoritarian rule trust government information? To answer this question, I compared citizen statements and movement trajectories from smartphone social media communication in real-time with precise timestamps and locations in response to the government's press releases during the Kunming railway station attack in southwestern China in 2014. I find that while outward engagement with government information may increase as the government releases more information, citizen trust in such information, in fact, diminishes, even when the information itself is straightforward and factual. In other words, an authoritarian government's efforts to disseminate information comes with a cost—its credibility.

Keywords: information credibility; smartphone; geolocation; social media; China

Introduction

Information disseminated by an authoritarian state is sometimes deemed credible, but at other times suspect. Why is this the case? Most established literature understands information dissemination under authoritarian rule to be a form of propaganda that has proven to be effective for political control (Geddes and Zaller 1989; Yanagizawa-Drott 2014; Adena et al. 2015; Bleck and Mitchelitch 2017). Propaganda works because citizens who lack other sources of information might turn to it to update their beliefs, especially in authoritarian states, where the sources of information and its distribution are tightly controlled. Even if citizens disbelieve the information and consider it propaganda, they are still reminded of autocrats' capacity to control or are intimidated by other citizens' support of the authoritarian state so that they refrain from political actions unfavorable to autocrats (Little 2017; Huang 2018). As a result, autocrats have

an incentive to distort and otherwise misrepresent the information they disseminate.

However, besides distorting evidence to deceive citizens for political ends, autocrats also need to disseminate practical information on such issues as public security, health, and economic performance, for such fact-based information in possession of citizens is essential to effective governance. Autocrats are therefore motivated to see that the facts in the information are accurate and resist the temptation to misrepresent them. In other words, they must curtail their desire to manipulate and allow the facts in the information to speak for themselves.

Because citizens under authoritarian rule have had at least some experience detecting a discrepancy between the information given by autocrats and the ground truths they know from their everyday life, they are aware that information disseminated by autocrats can be false. To citizens, the credibility of autocrat information is far from given. It can happen that even when autocrats deliver their information in a calm and deliberative manner in the hope of convincing citizens of its truth, citizens may still question its credibility. Take authoritarian China, for example. When a deadly infectious disease, known as SARS, broke out in 2003, ordinary Chinese questioned the Chinese Communist Party's credibility in matters of public health, and this despite the one-party state's repeated reassurances of safety (Saich 2005). With the rise of smartphones and social media, autocrats have shown sophisticated ability to discover, manipulate, and fabricate information on the internet (Morozov 2012; King, Pan, and Roberts, 2013; 2014; 2017; Roberts 2018; Lu and Pan 2020). As autocrats gain a tightening grip on information flow in the smartphone-social media age, the critical question remains: can citizens find the information disseminated by autocrats credible?

This article examines how the spread of practical information by autocrats affects the credibility of their information more broadly understood. I argue that even

autocrats' practical information, disseminated calmly and authoritatively, can be held at a discount because citizens are in the habit of suspecting information from autocrats. In an information environment fed by competitive smartphone and social media users, citizens receive a wide range of political attitudes and opinions. However, they lack independent sources of information and are unable to verify the information they do have. When citizens receive practical information from autocrats on their smartphones from social media, they can discern a discrepancy between autocrat information and the sensational information they usually receive. Even when the practical information serves citizens and is thoughtfully given, citizens may still suspect its credibility and this is because they are so used to being fed with propaganda that, not only sensational news, but even information thoughtfully given, can be viewed as a technique that autocrats use to promote their point of view and political agenda. At issue here is that citizens have shown a tendency to attend not so much to the information itself, which may be practical, as to the intention behind its propagation. A cost is exerted on the credibility of autocrats' effort at disseminating practical information, based on autocrats' intention, which I call the intentional cost.

To test the intentional cost associated with information dissemination, I compare two types of citizen behavior in response to multiple press releases following a terrorist attack that shocked China in 2014. The Chinese government quickly reassured citizens that it was firmly in control and that the safety of the area where the attack occurred had been swiftly restored. Citizens responded to government information by voicing their opinions on social media and adjusting their movement trajectories. I analyze these two behaviors as they have been registered in smartphone social media posts from a large sample of citizens who were present at or close to the area under attack. I find that citizens' engagement with government information significantly increased in response

to the government's effort to disseminate the information. At the same time, their trust in that information decreased.

Theory

Information dissemination in authoritarian states

A large body of literature has studied information dissemination under authoritarian rule, particularly the distribution of highly manipulated information such as propaganda (Edmond 2013; Gehlbach and Sonin 2014; Guriev and Treisman 2015; Shadmehr and Bernhardt 2015; Peisakhin and Rozenas 2018). Propaganda works not because citizens under autocracy are all brainwashed to believe it. It works because even if it fails to persuade, it can still benefit autocrats, for propaganda is a form of "cheap talk," often exaggerated and distorted, that can signal citizens to take a course of action that is favorable to autocrats; and for that to happen, neither autocrats nor citizens need to believe in the talk's content (Crawford and Sobel 1982; Sobel 1985; Austen-Smith 1992; Austen-Smith and Banks 2002; Crawford 2003; Kartik, Ottaviani, and Squintani 2007). Two procedures work in favor of autocrats. One, by disseminating manipulated information broadly, autocrats project their strength of control over the information flow. Such a projection of strength can deter citizens from participating in collective action that potentially harms the regime (Huang 2015, 2018). Two, manipulated information can mobilize citizens who believe in autocrat information, thus further deterring possible actions from those who disbelieve or doubt (Little 2017).

However, when autocrats need to disseminate practical information, they are incentivized to be accurate, for information regarding such matters as public safety, health, and economic performance can benefit autocrats' governance if citizens perceive it as credible. Autocrats face a dilemma. They need to engage with citizens so that their

information, often politically driven, can spread, but simultaneously they need to persuade citizens of the credibility of their information such that governance of citizens can improve and, by improving, redound in autocrats' favor.

From citizens' perspective, autocrat's effort at information dissemination is suspect, and they will not trust it unless it can be verified. However, in most cases, citizens lack the resources to verify the information for themselves. Unable to evaluate the credibility of the information, they assess the autocrats' motive or intention. Adding to the lack of confidence in autocrat information is the rise of alternative sources of information from social media and smartphones. Citizens can obtain information from journalists and critical citizens, and judge for themselves as to which opinions they will give credit to and which not or less so (Egorov et al. 2009; Lorentzen 2014; Chen and Xu 2016). Citizens can choose whom to follow and what information to read. The instantaneity and spontaneity of views and opinions in smartphone and social media present a new challenge to autocrats in their effort to disseminate practical information. They must now do so in an accurate and timely manner without interfering with what citizens prefer to consume from social media on their smartphones.

Autocrats distort the competitive information environment when they seek to engage with more citizens, for although much information supplied by autocrats can seem straightforward and accurate, citizens may notice a reduction in information's sources and a uniformization in information's content. Such reductions feel manipulative and remind citizens of their being fed with propaganda. They then suspect autocrats' intention and that suspicion is transferred to the information itself. When this

happens, a cost is exerted on information's credibility, which I theorize as an intention cost.[1]

Information Dissemination and Credibility in China

I focus on China, an authoritarian regime that is well-known for its propaganda, especially its extraordinary ability to disseminate information to citizens on media and social media (Brady 2008, 2009; Shirk 2011; Jaros and Pan, 2018); and, contrariwise, its extraordinary ability to curtail or stop the information flow in times that the regime considers politically sensitive (MacKinnon 2011). An example of this latter ability was demonstrated in 2009 when cities in Xinjiang came under attack, and the government's response was to cut off the internet entirely, claiming that the attackers, believed to be Uighur separatists, used it along with mobile phones to coordinate their actions. During the same period, the only news released was by the government press.[2]

However, in recent years, with the rise of social media and smartphones, the Chinese Communist Party (CCP) has steered away from hard propaganda and crude censorship in favor of a mixed procedure that comprises both information dissemination and online engagement, particularly regarding digital technologies and social media (Lorentzen 2014; Schlæger and Jiang, 2014). Shifts in e-governance have also made the CCP more attentive to the quality of information and engage with citizens online (Chen,

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[1] In liberal democracies, information dissemination at rare occasions may be similar to the process in autocracy, though different sources, such as liberal newspaper and conservative outlets, often disseminate the same information in different ways at most times.

[2] Edward Wong, "After long ban, Western China is back online" at https://www.nytimes.com/2010/05/15/world/asia/15china.html, accessed on February 23, 2021

Pan, Xu 2015; Han 2015; Truex 2017). In the process, it has curtailed ideology-based information dissemination, such as Marxism or Maoism, in favor of information that is well-grounded, yet favorable to the party, such as economic growth and large-scale infrastructural construction (Shambaugh 2017; Repnikova and Fang, 2018). By adding facts and evidence in their information dissemination, CCP can blend their propaganda with verifiable information so that CCP can lure ordinary citizens to consume their fabricated information and also, at the same time, balance their information's overall credibility (Lu and Pan 2020).

This way of disseminating practical information may be described as partially fact-based. It has played well for the CCP. Over the years, the party has transformed its propaganda apparatus so that it can join commercialized media and social media companies whose information content has high appeal to citizens (Stockmann and Gallagher 2011; Stockmann 2013). The creation of a competitive information environment by commercial and social media means that the government can sensationalize its information further to meet the preferences of ordinary Chinese. For example, the nationalistic tabloid Global Times and the liberal-leaning newspaper Caixin each targets its own audience and does not shy away from playing to its respective gallery. In addition, there are the social media celebrities and opinion leaders on social media. All compete for the attention of ordinary citizens (Nip and Fu 2016).

The competitive information environment brings challenges to CCP's effort at information dissemination, one of which is that information's credibility. In a rapid adaptation to this emerging competitive information environment, ordinary Chinese have become less reticent and more vocal about voicing their opinions online (Lei, 2016). Especially when they are accustomed to receiving information from various sources, many tend to be dismissive of political information (Chen and Yang 2019).

Even if they are interested in such information, they are susceptible to thinly evidenced rumors and are also inclined to resist rebuttals from the government (Huang 2017). This means that the CCP, well known for its exercising of censorship, coercion, and repression, cannot altogether coerce Chinese citizens from voicing their critical opinions publicly or even perform activism towards the government and its policies (Yang 2009; Yang and Jiang 2015).

Documented evidence regarding the effect of CCP's information dissemination are few. However, previous studies have found that Chinese citizens can be skeptical about even practical information when it is suddenly injected into the competitive information environment as, for example, when the issue is one of public safety (Landry and Stockmann 2009). To the extent that the government forcefully disseminates practical information to engage ordinary Chinese on social media, the effort can backfire, for it inevitably tilts the demand and preferences for information on the part of ordinary citizens away from government-supplied practical information. Government information that is given at a volume higher than usual further raises doubt in citizens as to its authenticity, particularly when they cannot verify the information themselves.

The 2014 Kunming Railway Station Attack

To test my theory, I focus on a terrorist attack in 2014 when, in its aftermath, the CCP disseminates many pieces of information regarding public safety. The Kunming railway station attack is one of the deadliest in China in recent years, sometimes being referred to as China's "911" (Hou and Quek 2015). Kunming is a major regional metropolitan center in southwestern China, comparable in size and population to Toronto. At 9:20 p.m., on March 1, 2014, five men, wearing black cloaks or face veils, pulled out long knives and stabbed 144 passengers at the Kunming railway station, resulting in 31 fatalities.

Before the attack, the railway station is a central transportation hub, located close to the downtown area where provincial and municipal government entities, business centers, and restaurants flourished. Although the attack caught the CCP by surprise, it swiftly responded with multiple press releases to reassure the public that safety and order have been restored. In the mainstream commercial media and social media, the first press release from the government appeared simultaneously at various outlets only one hour after the attack. It stated that a criminal act had occurred at the Kunming railway station that had left some casualties. More press releases followed, giving the public details about the government's handling of the attack: for example, a release hours after the attack stated that all suspects were either killed or arrested and no more further threat was present, and another release noted that the railway station was back to regular operation with only the temporary shed blocked for the police investigation. Thus far, the government's press releases did not seem to be motivated by politics, for control was indeed quickly established, and no further acts of terrorism occurred in Kunming.

Hypotheses

The government's spreading of information on the attack has led to two distinct yet related mechanisms in citizens' perception of their information. The primary mechanism of information dissemination is the signaling effect, which does not differ from classical theory in propaganda. As the monopolistic gatherer and supplier of information on public safety, CCP seeks to attract citizens' attention by sending out vital information on media and social media. Such information can engage citizens in political discussions and set the agenda of communications.

Citizens, for their part, are recipients of the government information regardless of their preferences, because they have little access to either the resources of

information gathering, such as the surveillance system or policing management, or the channels of information distribution, such as media, laws, and regulations. However, citizens need government information in times of crisis, and one such crisis was the Kunming railway attack.

The government responded to the attack by disseminating several pieces of information about public security and safety around the railway station and, beyond that, the city of Kunming at large. The government made the first announcement within an hour of the attack. It was followed by multiple pieces of information that are calmly disseminated to update citizens in Kunming about practical matters such as the government's handling of the suspects, updates on the railway station where the attack occurred, and the number of casualties and injuries. Most information is disseminated in a brief, calm, and authoritative manner, and is clearly aimed at reassuring citizens. Because citizens lack the means to obtain such information and they are in need of information for their safety, they are likely to be engaged with government information. My first hypothesis, then, is a straightforward test of the signaling mechanism—whether information disseminated by the government disseminated elicits an increase in citizens' response and engagement (*H1*).

However, information dissemination is also subject to a secondary mechanism that is distinct yet related to the signaling mechanism. As a strategic communication device, the government can disseminate information to persuade citizens. Nevertheless, the way the government disseminates information can exert a cost on its credibility. Lacking democratic institutions that safeguard information distribution concerning policies, CCP has limited options to convince ordinary Chinese that their information is free of the intention to spread a political agenda.

To convince citizens that their practical information is credible, autocrats must overcome the distrust sown by their habit of disseminating misinformation. Conceivably they can earn citizens' trust by taking the extreme step of changing the leadership. For example, in the event of the 2003 SARS and 2020 COVID-19 public health crises, CCP dismissed major leadership to convince the public that they no longer cover up evidence. Unless the CCP inflicts such a cost on itself, citizens will have little reason to credit government information as motivated solely by citizens' welfare.

In the case of the Kunming railway station attack, the CCP has made no effort to burnish its motive by targeting its own members as culpably responsible. Moreover, citizens cannot evaluate the information's reliability such as the number of casualties, the possibility of a further threat, or, more generally, the ability of the government to respond to such threats in an appropriate manner. What citizens can do is to evaluate the credibility of government information based on its motive.

Such an evaluation of information credibility comes at a cost, which I have called earlier the intention cost. The more aggressively the government disseminates its information, the more likely is the cost of a sudden increase of government intrusion into the competitive information environment. The result is that increasingly citizens' interest in the information differs from that intended by the government. As the discrepancy increases, citizens are inclined to perceive government information as manipulative. My second hypothesis tests whether the credibility of information is inversely related to the government's information dissemination strategy (*H2*).

Data

Information Disseminated on the Attack

To collect the government's effort at information dissemination and citizen responses to such information, I turn to Sina, which owns one of the largest public social media platforms Sina Weibo (similar to Twitter), and one of the largest commercial news platforms Sina News. First, I collect information on the attack disseminated from the Chinese government in real-time by using Sina News. With major Western media and social media blocked, political communication in China is mostly domestic (Shirk 2011). In 2014, half of the Chinese population frequently used the internet: of this population, 80% read news online, and 90% use smartphones (CNNIC 2015). Being one of the largest media companies in China, Sina integrates its news and social media platforms. This procedure inclines its users to be more invested in using both platforms and to sensationalize news based on user interest and demand whenever it is allowed.

I have collected all the news items published by Sina News. Concerning the attack, Sina News has published timely information and updates from the government's press releases. The press releases appear in a calm and considered manner and seem to make a point of being a coordinated effort consistent with their publications on other major media outlets in China. Some of these press releases are informative updates about public security and livelihood that are of concern to Kunming residents. A few are politically charged, indicating that Xinjiang separatists were behind the attack. Sina News has published several sensational stories that either incite the nationalistic sentiment of "rallying behind the flag" or preying on the fear of citizens. For robustness checks, I have collected all the news stories about the attack on Tencent News, the other major online news in China. Tencent owns WeChat, the most popular social media

messenger. I have also collected major news circulation on Sina Weibo immediately after the attack.

Citizen Responses on Social Media

In regard to citizen responses in real-time, I have collected them using Sina Weibo. Despite tight control on opinions, ordinary Chinese can voice their opinions, even criticism, on Weibo (Fu, Chan, and Chau 2013; Cairns and Carlson, 2016). I have collected in real-time an original dataset of Sina Weibo posts and news items on Sina News that not only cover the entire "terrorist" period, but also months before its occurrence. My dataset covers the four months, from 9 p.m., on March 1, 2014, to July 1, 2014, when the terrorists were officially prosecuted on, along with the matched four-month before the attack. Altogether I have collected 1.24 million geotagged Weibo posts from approximately 270,000 individual users (Appendix A). Collecting geotagged posts allows me to obtain the location of the Weibo user while she is posting. Geotag is simply a part of metadata attached to a Weibo post, with the tag being the name of a place that the Weibo user chooses to designate as her whereabouts. The geotag on Weibo provides highly accurate geographical coordinates for the user (i.e., 2-10 meters), which is obtained by using the GPS module on smartphones and are only visible to developers through Sina Weibo APIs (Zandbergen and Barbeau 2011). Geotagged posts do raise a question concerning their possible political bias as compared with non-geotagged posts. However, both a survey obtained shortly after the attack and additional datasets show this not to be the case (Appendix B).

Collecting geotagged posts can better identify average citizens who live in the geographical area that is affected by the political event (Steinert-Threlkeld 2017; Hobbs and Roberts 2018). It also has several other advantages. First, gauging opinions from average citizens on Sina Weibo can be difficult because paid commentators may send

posts (King, Pan, and Roberts 2017; Qin, Stromberg, and Wu 2017); advertising bots may dilute grassroots opinions (Fu, Chan, and Chau 2013), and the state may have censored citizen posts (Ng 2013; King, Pan, and Roberts 2013, 2014). However, using geotagged posts can overcome these difficulties because they are sent only from smartphones or other mobile devices such as iPads. These mobile devices are ill-equipped for bots to be used. Also, typing (as well as copying and pasting) on smartphones is harder than on a computer keyboard, and this makes smartphones inefficient for paid commentators to use. Moreover, a high-volume of posts sent repeatedly from the same location would effectively expose the paid commentators. Also, geotagged posts from smartphones carry only original posts, not reposts, which constitute 61% of all posts (Nip and Fu 2016). Lastly, smartphone Weibo users experience negligible censorship.[3] According to a prominent Weibo project based at the University of Hong Kong (i.e., Weiboscope), only 26 out of 1.7 million geotagged posts have been censored (Fu and Chau 2013). In the previously mentioned survey, I find that out of 2,620 respondents, 67% of Weibo smartphone users claim that they have not seen any post deletion in their Weibo feeds. I have collected, in addition, all the posts that have a keyword related to the attack on Weibo to examine whether paid commentators are disseminating government news stories from March 1 to 3. My preliminary examination, using the list of paid commentators in King, Pan, and Roberts (2017),

[3] Ordinary Weibo users also have fewer followers on average than the celebrity users on Weiboscope.

shows no sign of paid commenting at the initial stage of this event. This result is consistent with these authors' findings.[4]

Method

Measuring Dissemination of Government Information

Altogether, Sina News has published 150 news items on the attack during my study period. I code them into three categories: (1) government's press releases of practical information; (2) political assertions for state control; and (3) sensational stories for inciting nationalism. The first category, the government's press releases, appears as being deliberately assembled and disseminated from various government sources, including local police stations near the Kunming railway station. They reassure the public of safety at the train station and provide timely updates on the government's handling of the situation. They are the key variables for my analysis. In addition, political assertions and sensational stories are coded for robustness checks. Coding for all the news items is included in Appendix C.

Measuring Citizen Opinion

To measure citizens' opinions as recorded on their social media, I distinguish those that are political from those that are nonpolitical. I devise a codebook centered on this event

[4] I have collected 120,835 Weibo posts—both geotagged and non-geotagged, using Weibo keyword search after the attack. I find only 29 posts sent from 19 paid-commentators. None of these posts were geotagged and none of them were sent before the same story was disseminated on Sina News. In fact, most of the paid-commentator posts are simply reposts of the stories on Sina News. This finding is consistent with the findings of King, Pan, Roberts (2017) that the attack is not particularly flooded with paid-commentators.

and use a broad set of 539 Chinese characters and terms to identify 28,818 posts out of the 1.24 million posts that may be potentially relevant to politics (Appendix D). However, because such a procedure may also allow many irrelevant ones (i.e., false positives) to enter, I code by hand political posts from this sample, which results in a total of 19,522 political posts. Because the attack is the only major political event during my study period, the political posts are mostly related to discussions on the attack.

Measuring Citizen Movement

A methodological challenge is that citizens' opinions under authoritarian rule may be falsified under the pressure of government repression (Kuran 1997). Also, they can be influenced by popular nationalism on social media (Hou and Quek 2015). Therefore, I turn to a device that measures citizens' trust in government information by comparing how they have "voted with their feet" before and after they have received information about the attack (Tiebow 1956; Hirschman 1970).

Following the attack, a central directive from the government is that safety and order at the railway station have been quickly restored. The government repeatedly gives updates about its security measures against suspects and the railway station area. Its directive implies that Kunming citizens can safely return to their everyday routines, which, for many, means visiting and dining in the downtown areas close to the station. However, citizens have to assess whether they want to comply with this piece of advice. An indication of their assessment is citizens' relative distance to the railway station, geotagged with their timestamped social media posts with precise location. Citizens can take different actions: if they assess that the train station and its neighborhood are safe, they might even approach the area out of curiosity. Alternatively, they might deem the government's practical information reliable but insignificant, and so return to their

routine. In this case, their relative distance to the railway station would not have much changed. Or, they might deem the information unreliable, which means that a second attack can occur or that police search and intrusion can adversely impact them. They would then seek to avoid the railway station and its neighborhood.

Model Specification

I first use simple logistic regression to test my first hypothesis. I estimate whether the dissemination of practical information by the government can engage citizens.

$$Opinion_i = f(\alpha * X_i + \beta * W_i + \varepsilon)$$

where $Opinion_i$ is a binary variable of a citizen opinion: 1 being political, 0 nonpolitical. X_i is the amount of government information disseminated about the attack that she consumes at the time of her posting. W_i indicates the number of political assertions and sensational stories at that time which are the control variables. ε is the error term.

Also, I estimate the effect of information dissemination on its credibility by comparing citizens' movement responses. As the government scrambled to disseminate information, citizens have begun to learn about different volumes of information when they log onto social media at different times. Nonetheless, their consumption of such information was endogenous because the interest level and the perception of risk of citizens changed over time as they moved. To estimate the effect of citizens consuming government information, I use the time after the attack as an instrumental variable (Angrist, Imbens, and Rubin 1996; Sovey and Green 2011). The instrumental variable is a temporal variable that does not directly affect the movement trajectory. Moreover, there are neither other major political events in Kunming nor significant changes in commuting networks during the study period that alter citizens' movements. Nevertheless, it affects citizens' interest level because citizens would become less interested in the attack and their perception of risk over time.

The main quantity of theoretical interest is the effect of the information consumption on citizens' relative distance to the railway station. I code a binary variable that takes the value 1 for citizens who can consume a piece of information after the government's press release and 0 for those before the release. Over time, citizens' exposure to government information multiplies by the X number of press releases from the government. I also code a continuous instrument that indicates the time difference between the timestamp of a citizen's post and the attack. I estimate the average treatment effect of government information with the Two-Step Least Squared (TSLS) by first estimating the citizens' information consumption at times when they post on social media.

$$\widehat{X_\iota} = \beta * X_i + \gamma * Z_i + \varepsilon$$

where X_i is the amount of information disseminated by the government when a citizen posts on social media and Z_i is the instrumental variable that indicates the time past the attack at that moment. Using X_i and Z_i, I estimate $\widehat{X_\iota}$, which is the citizen's consumption in the government information on the attack. In the second step, I estimate how the information consumption affects the citizen's movement trajectory around the railway station where the attack occurred.

$$Movement_i = \alpha * \widehat{X_\iota} + \mu$$

where the outcome variable *Movement*$_i$ is a citizen's relative distance to the railway station at the time of her social media posting.[5] Unlike opinions on social media, citizens are not able to view the precise geolocation of each other unless they are

[5] Because citizen opinions can be seen publicly on social media, IV estimation of citizen opinions will likely violate the exclusion restriction. I discuss this potential violation and I perform some further analysis using citizen opinions in Appendix G.

software developers of Weibo, which makes the estimation less likely to violate the Stable Unit Treatment Value Assumption (SUTVA).

I conduct multiple analyses to address the potential concerns of identification assumptions of IV estimation (Sovey and Green 2011). The monotonicity and the correlation between instrument and treatment are ignorable. To address the potential violation of ignorability, I compare citizen responses a short period before the attack with a period after the attack but before the government made its first press release. IV estimates local average treatment effects that may pose concern when the sample in the study is different from the general population. To address this concern, I have also tested the differences between Weibo users and ordinary citizens in a survey result gathered shortly after the attack. Moreover, because of the concerns of other unobserved characteristics, such as citizens' trust of government, their prior belief, response rate, and sources of information, I narrow the data to a subset of samples in the spirit of a Regression Discontinuity Design (Cattaneo et al. 2016). I compare citizen movements only within a short period, for example, 24 hours, 2 hours, and 30 minutes, before and after each time when the government releases a press report. To ensure the validity of the IV estimation, I also conduct a weak instrument test for the instrumental variable used in the estimation.

Robustness Checks and Placebo Tests

I perform several other robustness checks. First, among the government's press releases that offer practical information about the attack, I separate government reassurances such as security is in place at the station and around Kunming, from the unfolding of the attack, as, for example, when the government provides updates on the number of casualties. Even though both categories of press releases are intended to reassure the public, some citizens may find the periodic updating of events more disturbing than

reassuring. Second, I estimate the effects by including other covariables (Abadie 2003). In one model, I include the holidays and off-work hours as covariates because citizens' use of social media and exposure to information may be randomly assigned in these periods. Third, I include citizens' social media profiles, such as the number of following accounts and followers' accounts, as covariables, because they may reflect citizens' preference in using smartphones to access information. Fourth, I include other stories about the attack that appear on Sina because citizens may use them to evaluate the political sensitivity of topics and, relatedly, the credibility of government information. I further test other alternative mechanisms of information dissemination; for example, the information citizens can receive from Tencent. I also conduct a placebo test by using news stories on Kunming before the attack to see if such information changes citizens' movements.

Lastly, I perform a placebo test using a similar event. On May 1, 2014, approximately two months later, another attack occurred at the Guangzhou railway station with features that resembled the attack in Kunming: the attacker wore a black cloak and veil, used a knife, and targeted passengers at a railway station. The attack immediately captured headlines. However, unlike the attack in Kunming, the information on the attack is dispersed and seemingly without government intervention. I use the same empirical specifications discussed in previous sections to test whether the lack of government dissemination effort can also lead to citizen distrust of information.

Does Information Dissemination Increase Citizen Outward Engagement?

Preliminary Assessment

One hour after the attack and soon after the first press release, the number of political posts sent by citizens surges (Figure 1). Before the attack, the percentage of political

posts constitutes approximately 1% of all posts on Weibo, which is typical of the level in normal times. After citizens have learned about the attack from the government's first release, the number has been shot to more than 30%. Visual inspection of the posts shows that most citizens immediately turn their attention to what has happened at the railway station, for most in Kunming are familiar with it and with the surrounding downtown area. However, some citizens have not participated in the discussion, perhaps because they have no interest in politics or they seek safety in self-censorship. Here are two examples of posts, one political and the other nonpolitical.

Political:

"News reported that Kunming violent event was over. Nonsense! All kinds of armed forces are patrolling everywhere, and sirens can still be heard. Is this kind of news intended to deceive people? The more it is intended to reassure, the more panic [it causes]!!!"

Nonpolitical:

"The cherry blossoms are blooming, and I am still there. . ."

Unsurprisingly, most citizen opinions that are political have taken on a nationalistic tone. It is a question of "rallying behind the flag," made all the more urgent because the attack is viewed as ethnically charged and violent (Hou and Quek 2015). On the other hand, a small minority of citizens show their political engagement by criticizing the party for its inadequate handling of the situation, including its information's credibility. Over time, such discussions decline as people return to their everyday topics on social media. Nevertheless, social media evidence (Figure 1) lends preliminary support to *H1* that government information dissemination can increase and even cause a surge in citizens' engagement in government information.

Results from Logistic Regression

I now show the results obtained by using simple logistic regression. Table 1 presents the estimated average treatment effects of the information disseminated by the government on citizens' interest in politics. My estimation shows that citizens are significantly more engaged in government information when the government disseminates their information about the attack on media and social media. By controlling other mechanisms from political assertations and incendiary stories, the effect of information dissemination is still salient in stimulating the political discussion of citizens. On average, for each press release of practical information, we expect to see about 57% of increase in the odds of citizens' discussing politics. The results support *H1* that the government's effort at information dissemination strongly stimulates citizen engagement of government information.

[Table 1 about here]

Does Information Dissemination Decrease Information Credibility?

Preliminary Assessment

Kunming citizen footprints suggest that information dissemination from the government has backfired in the early hours (Figure 2). After the attack, the average relative distance to the railway station by post shows a slightly different pattern from that of the previous night, with citizens appearing somewhat farther away from the station between 9 p.m. when the attack occurred, and 2 a.m., before they begin to make adjustments. However, the next night, citizens appear much farther away from the station, especially at night during the off-work hours as compared with previous nights. These abrupt shifts of movement trajectories lend preliminary support to *H2*.

[Figure 2 about here]

Results from IV estimation

Table 2 presents findings from IV estimation. In the eight-month period, citizens appear significantly farther away from the railway station upon receiving more government information, thus contradicting the government's directive (Table 2 Model 1). The estimated treatment effect in a narrow 24-hour bandwidth shows that after acquiring an additional press release, citizens appear 289.9 meters away from the station as compared with their location before the story has reached them. By choosing narrower bandwidths—2 hours and 30 minutes, respectively—the estimated average treatment effect remains significant with slightly decreased values.

Further tests and robustness checks confirm the validity of the results. The IV is strong enough to pass the weak instrument test. One concern is that more citizens may speak after the government's press release to attract attention and social media followers, or they may seek more sources of information by following others. However, when I examine the number of followers and their followings, I find that no significant changes have occurred in citizens' social networks before and after they received government information (Table A10). Along with the density test, the results suggest that observations before and after the press releases are balanced and similar.

[Table 2 about here]

Mechanism and Alternative Explanations

Placebo tests of Guangzhou Railway Station Attack

To test a different scenario of my hypotheses, I use the attack at the Guangzhou railway station. The information about the attack was not actively disseminated by the CCP, and none of interference from central leadership of CCP was injected in the government information. Despite that, citizens in Guangzhou initially had similar responses to its

attack, they received no particular reassurance from the CCP other than the routine reports and stories from media and social media. In this case, government information did elicit trust from Guangzhou citizens. After they received government information about the station's safety, they did not move away from it (Table 3). This scenario suggests that Chinese citizens generally do heed government's practical information but become suspicious when it—the practical information or directive—seems tainted by politics.

[Table 3 about here]

Source of Information

Citizens may consume government information from mainstream media other than Sina News. Table A.20 presents the results of treatment effects using information the government spreads on Tencent News. Most press releases on Tencent News bear the same timing and content as those on Sina News, except that they are often published piecemeal. The estimated effect remains significant. Moreover, by controlling the sources of information from social media, such as the number of social media accounts that each user is following, findings are consistent (Table A.17).

I also control for government's political assertions, which can be punishing and indiscriminate and, for that reason, induce citizens to avoid the station and its environs. When I include this eventuality in another control, I find that the effect of information dissemination is still significant (Table A.16). In addition, if the citizens' interest in the government information remains constant, the estimated effects of the government's information dissemination are still significant (Table A.14).

Anxiety and Reassurance

An alternative explanation of the results is that some press releases intended to reassure citizens might have included facts that have triggered anxiety rather than disbelief. To avoid this possibility, I have confined myself to examining press releases that are explicitly intended to reassure. Table A.13 presents the results. It shows that the treatment effects are even more salient when only citizen footprints that respond to reassuring information are used in the comparison.

Security Control and Holiday Pattern

A third possible explanation is that citizens have avoided the station and its environs mainly because the government has taken strong security measures to block the railway station and its surrounding areas. While the government has blocked off a temporary shed at the railway station for investigation, many citizens have visited its nearby downtown areas after the attack (Figure A.3). To be sure, I have controlled the citizens who appear within a 1-kilometer radius of the shed before and after the attack. The results remain the same (Table A.18 and A.19). Furthermore, Chinese citizens travel to the railway station more often than usual during the holiday season or weekends, which may affect my test. To control this scenario, I code all holidays, weekends, and off-work hours and control them in a test (Appendix E). The results remain the same when controlling the off-work factor (Table A.15).

Conclusion and Discussion

My findings show that government information dissemination has two distinct yet related effects: the effect of signaling in engaging citizens with political discussion and a secondary effect of the intentional cost that harms the credibility of the very information that the government disseminates. Using an original dataset of individual

statements and movement trajectories registered on social media months before and after a terrorist attack, I find that when the government releases practical information that reassures citizens on public safety, citizens are willing to engage with it by responding actively. However, this is not an indication of trust. After the government makes the claim that the station is safe and life can return to normal, citizens, in response, move farther away from them upon receiving such claims.

My results show that disseminating practical information in authoritarian states can exert intentional costs in information credibility. The government information is discounted when the government injects information in a competitive environment to engage citizens. When that happens, citizens tend to evaluate the intention of the government and judge the information as manipulative, even if the practical information so disseminated is accurate.

This research has theoretical implications in that it connects our understanding of propaganda and information control with digital governance that has been realized with new communications technologies. Should such new technologies be in government's hands, it will be equipped to forestall all kinds of citizen opposition (MacKinnon 2011; Morozov 2012; Greitens 2013; Edmond 2013; King, Pan, and Roberts 2013, 2014, 2017; Little 2016; Gallagher and Miller 2019; Lu and Pan, 2020). My research shows, however, that government's effort at information dissemination with new communications technologies can be a double-edged sword. It can be highly effective in dispensing information and engaging citizens regardless of time and space, and yet suffer credibility and thereby lose persuasiveness.

Undoubtedly, authoritarian states have been adapting various technologies for propaganda and information control in the age of smartphones and social media. Their frequent manipulation and control of information also add confusion and anxiety to

their citizens. In the smartphone-social media age, information for citizens' attention is competitive, and competition inclines citizens to consume information in their preferred way. When they suddenly receive practical information from the authoritarian state, they suspect it of being used for a political purpose, but when information is disseminated calmly, with an air of authority, citizens can become even more doubtful, because it deviates so far from how information is usually given on social media. If autocrats have difficulty communicating to citizens, it is largely because citizens have acquired a habit of exerting an intentional cost on the information they receive.

This research has methodological implications. I show that people's movement trajectories offer direct evidence for real-time citizen responses in an authoritarian state. As digital traces of behaviors from citizens and autocrats become increasingly available, they provide direct evidence to estimate treatment effects. As to my method's limitations, one is that since the analysis is focused on a behavioral response, the estimated treatment effect can be challenging to interpret. Moreover, my research design focuses on just one type of practical information—the reassurance of public safety—in one event, the terrorist attack, in one authoritarian country, China. Future research is needed for results to be generalizable to other kinds of practical information, such as those regarding public health or environment, or to other authoritarian states.

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Table 1 Estimated effect of government information on citizen engagement, logistic regression

Regressors	Political Talk, binary
Government information	0.454*** (0.005)
Days passed	-0.015*** (0.0005)
Assertion of control	0.035** (0.012)
Sensational stories	-0.328*** (0.008)
Number of observations	1,247,106

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Table 2 Fuzzy RDD estimates of the effect of government information on information credibility

	OLS	2SLS		
	(1)	Discontinuity Samples		
	Full sample (8-month)	(2) 24 hours	(3) 2 hours	(4) 30 minutes
Government information	117.3*** (4.021)	289.9*** (16.92)	213.7*** (20.40)	178.0*** (31.15)
Constant	13,317.7*** (141.7)	5,068.4*** (631.8)	8,339.5*** (615.1)	9,560.3*** (765.7)
Number of observations	1,247,106	148,387	38,551	17,162

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Table 3 Fuzzy RDD estimates of the effect of government information on information credibility, placebo test

	OLS	2SLS		
	(1)	Discontinuity Samples		
	Full sample (8-month)	(2) 24 hours	(3) 2 hours	(4) 30 minutes
Government information	28.147** (10.236)	-30.080 (23.162)	-275.413*** (73.448)	-260.734*** (86.902)
Constant	21,622.338*** (81.147)	21,701.888*** (222.201)	23,125.501*** (592.189)	22,761.453*** (604.458)
Number of observations	413,750	57,986	15,493	6,611

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Figure 1. Number of government press release and social media posts before and after the attack

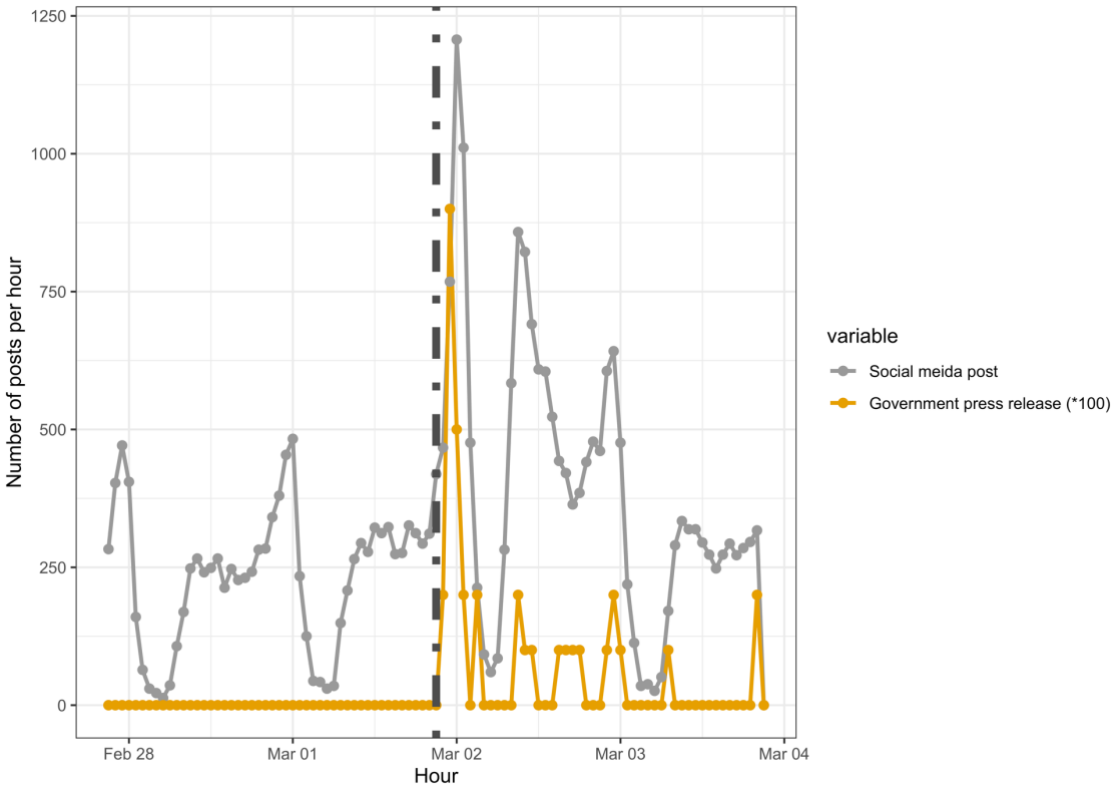
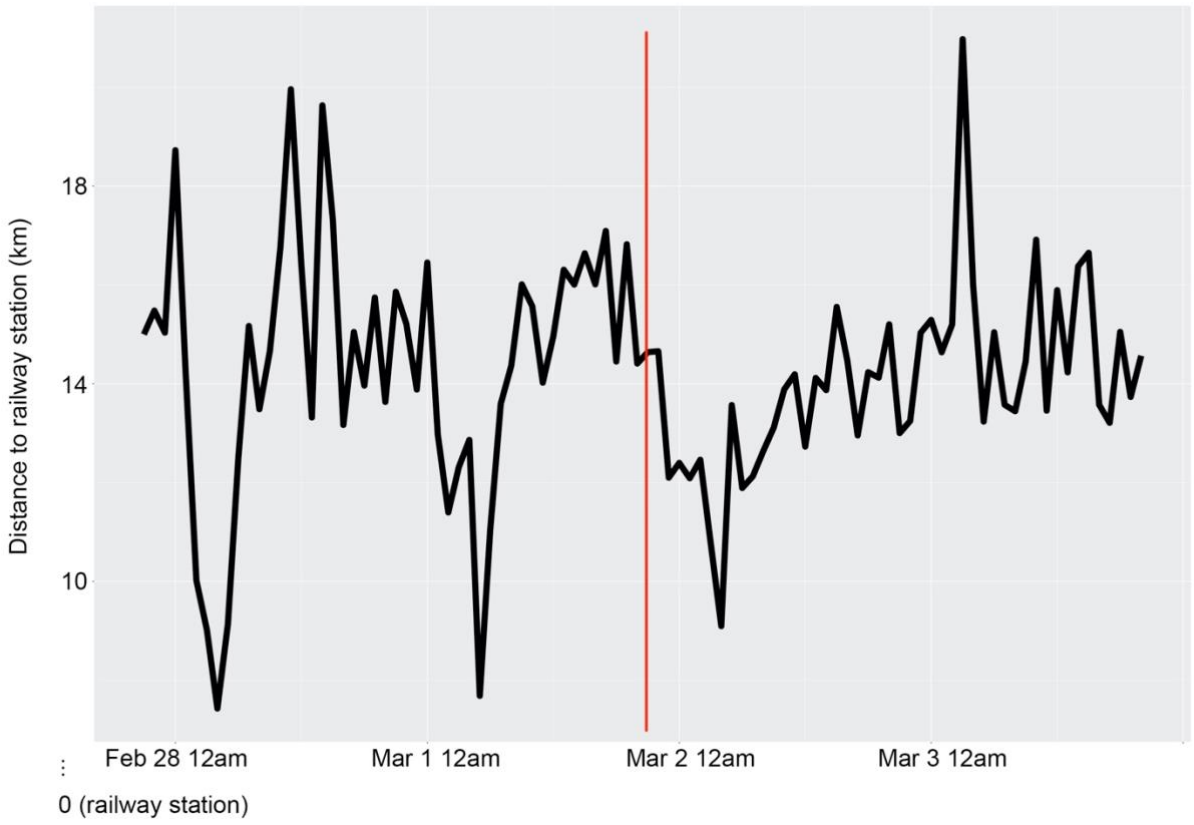


Figure 2. The average distance to the railway station by post before and after the attack



Supplementary Materials for

Information Credibility under Authoritarian Rule: Evidence from China

Appendix A. Data Collection

I collect and store geotagged posts in real-time from citizens in Kunming on Sina Weibo, for the 10-month period from 9 pm on 1 November 2013 through 9 pm on 1 July 2014.[1] Geotagged posts are those sent on a device, typically a smartphone, with a tag of location that a Weibo user chooses to show with the post, as well as to the underlying geographical coordinates from GPS device on the smartphone at the time of posting. The location given is precise, the positional error being 2 to 25 meters (Zandbergen and Barbeau 2011). The Sina Weibo Nearby Application Programing Interface (API) permits me, using a programming interface with location and search radius, to access the Sina Weibo database that stores all such posts.[2] To systematically retrieve posts in Kunming, I designed a net of approximately 102,165 location search points, set 0.004 degrees or approximately 400 meters apart from one another; this net entirely encompasses the boundaries of Kunming municipality.[3] The Sina Weibo Nearby API limits me to retrieving from a location point, at any one time, a maximum of 20,000 most recent posts.[4] I navigate my net of points, point by point, to retrieve the most recent posts within a radius I set at 1,000 meters with 23 API tokens and 6 computers. By design, the radius of 1,000 meters for each location point, set 400 meters apart from one another, implies considerable spatial overlap, as illustrated below in Figure A.1. This design contributes to an intended redundancy in my retrieval of posts: in each two-week period, as I navigate the net of points systematically, from point to nearby point, at each point retrieving up to 20,000 most recent posts within the 1,000-meter radius, my retrieval

[1] I define the timing of the attack at 9:20 p.m. on 1 March 2014, as the court filing indicates, and its conclusion on 1 July 2014, as the suspects are formally charged.
[2] The Sina Weibo Nearby API has been deprecated in May 2017 when Sina tightened its API control.
[3] It encompasses the area from 24.29 to 25.27 degrees north in latitude and from 102.07 to 103.74 degrees east in longitude.
[4] Specifically, Sina Weibo Nearby API has a technical limit of 50 posts per page and limits retrieval to the most recent 400 pages. If we view all 400 pages from a single location point at the same time, which we do here, we can view a maximum of the most recent 20,000 posts.

covers every piece of Kunming's geographic space many times over.[5] The large number of search points takes me approximately ten days to two weeks to navigate every point in the net, retrieving posts at each point. However, the design allows me to miss a post only if there are more than 20,000 posts from a single location in two weeks—which is effectively impossible.[6] The data collection process results in 1,247,106 unique posts during the study period, as illustrated below in Figure A.2.[7] The red dot in the center indicates the railway station where the attack occurred. I am confident that I have collected all geotagged posts in Kunming during the study period.

[5] I subsequently eliminate multiple observations of the same post to create a dataset of unique posts.

[6] Empirically, I find this limit of 20,000 posts in the retrieval space of a single location point is reached in about three months.

[7] Through collecting samples of independent Weibo users in the same period, I find that geotagged posts comprise 6-12% of all Weibo posts in the study period.

Figure A.1. A Net of Points in a Sea of Posts

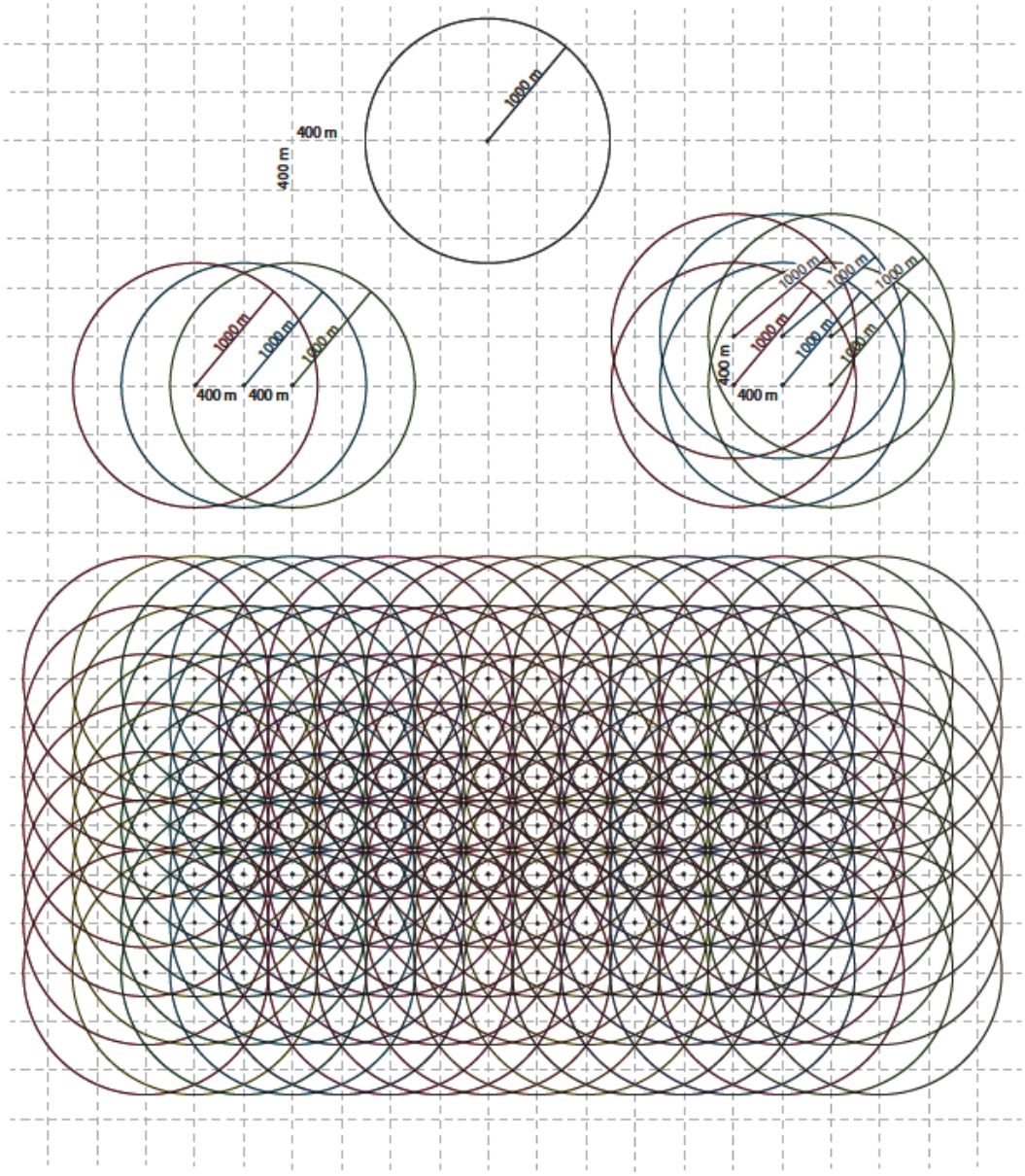
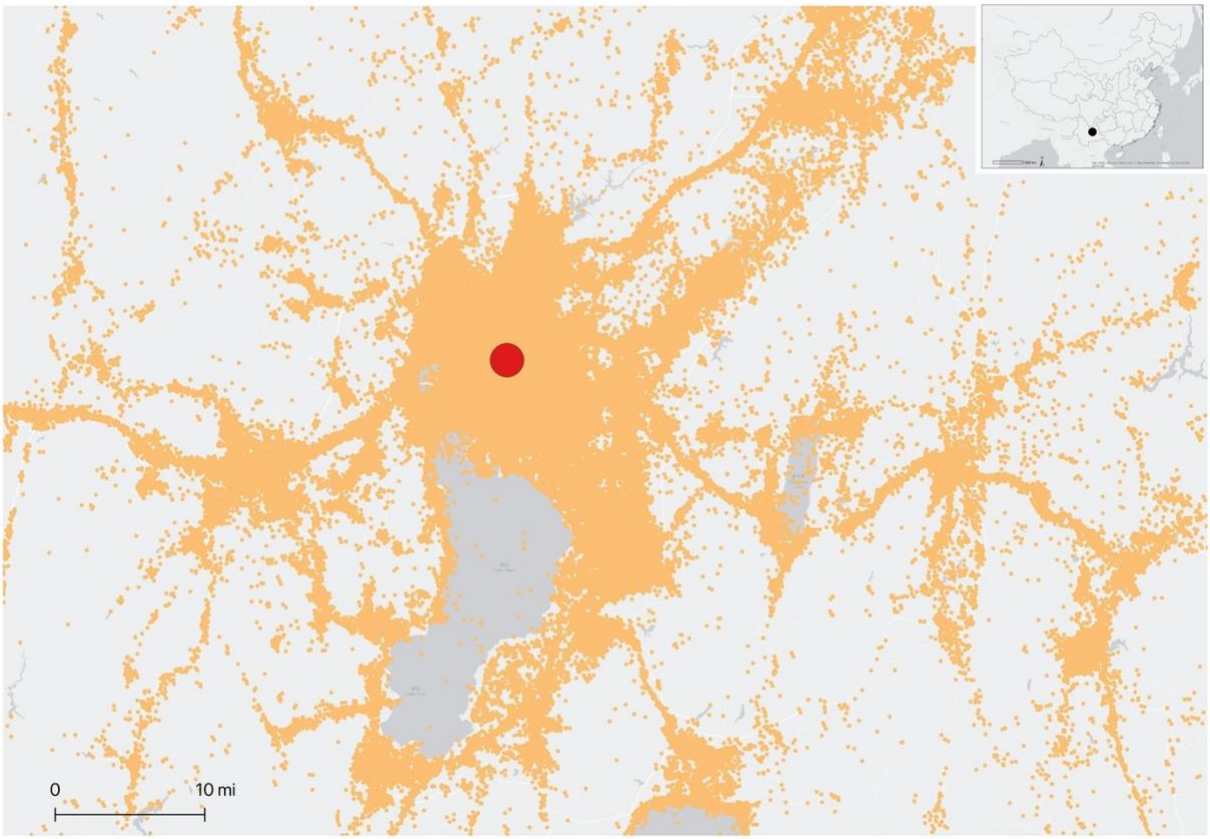


Figure A.2. Geotagged Posts in Kunming



Appendix B. Comparison between Geotagging and Non-geotagging

Weibo users who send geotagged posts may be different from other users. If differences are significant, it threatens the validity of my research. To address these concerns, I test three questions explicitly: (1) whether geotagging Weibo users are different from non-geotagging Weibo users; and (2) whether Weibo users' geotagged posts are different from non-geotagged posts when they talk politics.

B.1. Comparing Geotagging Users with Non-geotagging Users

I use multiple additional datasets to access these potential threats to validity. First, I use Beijing Area Studies (BAS) 2015, which has all the information I need regarding Weibo use, talk of politics, and geotagging.[8] Shortly after the Kunming railway station attack, the survey was conducted in Beijing, where respondents lived in a similar metropolitan environment.[9] Specifically, I answer the first two questions. I compare differences in political attitudes of Chinese who use Weibo and who do not, and who report disabling the smartphone geotagging function when posting on Sina Weibo and those who report never having done so.

Among the 2,610 Beijing residents that the BAS 2015 surveyed, 62 percent use the internet, and among them, thirty percent uses Sina Weibo. Smartphones are extremely popular: 94 percent of Weibo users go online by smartphone. They are not different from those who do not go online or do not use Sina Weibo. Ninety-two percent of Weibo users know geotagging function in Weibo.

[8] The BAS is modeled on the Detroit Area Study survey. It has been conducted annually or biannually since 1995. See Manion, Shen, and Yang 2010.

[9] It is infeasible to survey Kunming residents immediately after the attack due to this political sensitive topic. Therefore, I use a survey conduct in Beijing, which has a population that is not much different from Kunming.

To investigate the differences between geotagging users and non-geotagging users, I analyze differences between these two groups in terms of their interest in politics and views on the ongoing anti-corruption campaign, as reflected in responses to five survey questions. Response frequencies are shown in Table A.1. I find no statistically significant differences between those who report having turned off geotagging and those who report never having done so. Based on their responses, the two groups do not differ significantly in their interest in politics, how much the anti-corruption campaign affects their lives, their agreement with rhetoric about the campaign's purpose and the sincerity of efforts to fight corruption, or their opinion on whether or not the campaign should continue and intensify.[10] These results suggest that my focus on geotagged posts does not pose a threat to my research's validity.

[Table A.1 about here]

B.2. Comparing Geotagged Posts with Non-geotagged Posts

To answer the second question—whether geotagged posts are different from non-geotagged posts, I subsequently collect all posts from a random sample of 2,500 Weibo users in my database from their Weibo account page. Thirty-one of them are both self-reported from and physically registered at other provinces than Yunnan and thus excluded. I collect all posts from the remaining 2,468 Weibo users from Kunming from the Weibo user's profile. I then follow the same procedure in the main text to code the vocally compliant and supportive posts. I run a simple regression to compare the geotagged posts and non-geotagged posts regarding their odds of being vocally compliant (Table A.2). I find that geotagged posts are very similar to those non-

[10] Specifically, the Pearson chi-square probability for observed differences in the distribution of responses across the two groups is higher than .05 (and usually much higher) for all five items. It does not reject the null hypothesis that two groups are not statistically different.

geotagged posts regarding political attitude, which confirms that geotagged posts and non-geotagged posts are not different for political reasons.

[Table A.2 about here]

Table A.1. Beijing Weibo Users Who Have (or Have Never) Disabled Geotagging, Percentages

	Geotag on	Geotag off
Interest in politics		
Very interested	3.9	5.4
Somewhat interested	28.9	27.0
Not too interested	59.5	62.2
Not interested at all	7.8	5.4
Impact of current campaign on your life		
Direct impact	11.5	11.0
Indirect impact	4.1	5.5
Basically no impact	84.4	83.5
Current campaign: highly important or high-level political struggle?		
Highly important	56.5	53.2
High-level political struggle	17.7	14.9
Both	19.1	29.1
Neither	6.7	2.8
Fighting corruption: response to mass public or political show?		
Reflects public sentiment, enjoys public support	64.7	60.3
Political show	7.0	5.9
Both	21.9	30.9
Neither	6.5	2.9
Approve of continuation and intensification of campaign?		
Very much approve	57.5	63.3
Somewhat approve	32.9	27.2
So-so	7.9	9.5
Somewhat disapprove	1.8	0
Very much disapprove	0	0

Notes: Percentages compare netizens who report having disabled the geotagging function for some posts when posting on Sina Weibo with netizens who report never having done so. Frequencies are responses to the following questions. (1) Are you interested in politics? Would you say you are very interested, somewhat interested, not too interested, or not interested at all? (2) Do you think the current anti-corruption effort has an impact on your own life? A direct impact? An indirect impact? (3) Some view the current anti-corruption effort as highly important: not to counter corruption may destroy the party and country. Others view it as a high-level political struggle. Which view do you agree with? (4) Some think fighting corruption reflects the public sentiment and enjoys broad popular support. Others think fighting corruption is a political show. Which view do you agree with? (5) Do you approve of the government continuing and intensifying the anti-corruption effort?

Source: Beijing Area Study 2015

Table A.2. The compliant opinion between geotagged posts and non-geotagged posts, logistic regression

	Dependent variable:
	Compliant opinion (binary)
Regressors	
Geotag (true = 1, false = 0)	0.077
	(0.044)
Number of observations	449,290
R2	0.00001
Wald Test	3.020* (df = 1)
LR Test	2.999* (df = 1)

Note: *p<0.05; **p<0.01; ***p<0.001

Appendix C. Coding of Information Disseminated by the Government

Following the terrorist attack at the Kunming railway station, CCP quickly made three types of press releases that are subsequently widely circulated on the mainstream media: (1) practical information on public safety and the operation of the railway station in an authoritative and succinct manner. For example, a press release quickly announced that ticketing and boarding at Kunming Railway Station begun to resume. (2) politically charged statements that highlight the claims from party leadership, foreign leaders, or condemnation of Xinjiang 'separatist' groups. For example, a press release quickly followed the attack quoted Xi Jinping's proclamation to punish the Kunming Railway Station violent terrorists according to the law. Such an empty proclamation has no substantive information for citizens to follow. (3) sensational stories that pursue clicks and advertising profits. Both the party's mouthpiece and commercial media published some sensational stories to appeal to its audience, seeking to boost its readership. For example, a commercial story reads, "Liu Xiang [a famous Chinese Olympian] responds to the violent and terrorist incident in Kunming: Both people and Gods are deeply offended." These three types of press releases and news reports could have different effects on citizens' responses. I code them accordingly, as shown in column category 1 of Table A.3.

In addition, among the practical information disseminated by the government on the attack, there are two main subcategories of information. First, information explicitly reassures the public of safety at the railway station where the attack occurred and beyond. For example, a press release reads, "Kunming railway station resumes ticketing; Police cordoned off the waiting shed." Such a statement explicitly states the safety and order at the station while emphasizing the control of the police force. Second, there is information about the development of the attack and the government's handling of the aftermath. For example, a press release reads, "Kunming railway station violent event has caused 28 people dead and 113 injured." Such release implicitly

suggests that the government has the situation under control and the order restored. However, such updates and developments of the attack can trigger fear and superstition among citizens in Kunming who might want to avoid the scene of death. I code them separately in category 2 of Table A.3 and perform robustness checks in Appendix G.

Table A.3 Coding of Information about the Kunming Railway Station Attack on Sina News

News title	Translated title	Category	Subcategory
一伙歹徒持械冲进昆明火车站广场见人就砍(图)	A group of armed criminals burst into the Kunming Railway Station Square, stabbing everyone (Figure)	Information	Update
目击者称昆明火车站砍杀暴徒已击毙 5 人	Witnesses said the mob at Kunming Railway Station has killed 5 people	Information	Update
昆明火车站砍杀事件伤者主要是购票和乘车旅客	Kunming Railway Station The victims at Kunming Railway Station is mostly passengers	Information	Update
昆明火车站发生持械伤人事件 1 名伤者已经死亡	A stabbing incident occurred at Kunming Railway Station; 1 injured has died	Information	Update
目击者称昆明火车站歹徒追着人砍 多人死伤	Witnesses said the criminals chasing passengers to stab at Kunming Railway Station; multiple casualties reported	Information	Update
民警对昆明火车站实施三层封锁	Kunming Railway Station has been blocked by police in three layers	Information	Reassurance
昆明火车站一伙歹徒砍杀路人 数名歹徒被处置	Criminals stabbed passers at Kunming Railway Station; several criminals were arrested	Information	Reassurance
多名男子昆明火车站广场砍人 数名歹徒被击毙	Men stabbed people at Kunming Railway Station Square; muliple criminals were killed	Information	Reassurance
昆明火车站售票进站陆续恢复	Ticketing and boarding at Kunming Railway Station begun to resume	Information	Reassurance
昆明火车站砍人事件已有 20 名伤员 1 人死亡	Kunming Railway Station stabbing event has left more than 20 wounded 1 dead	Information	Update
昆明警方证实 18 名伤者被送医 2 人已经死亡	Kunming police confirmed that 18 injured were taken to hospital two people have died	Information	Update
消息称昆明大树营区也发生暴力事件	Reportedly Dashuying at Kunming also had a violent event	Sensational	NULL
昆明火车站砍杀现场:300 米距离全是斑斑血迹	Kunming Railway Station stabbing site: 300 meters full of blood	Sensational	NULL
目击者称昆明火车站歹徒从 1 号售票口砍到 14 号口	Witnesses said the Kunming Railway Station criminals stabbed people from ticketing window No. 14 from No. 1	Sensational	NULL
昆明急救中心称收治火车站伤者 109 人 已 3 人死	109 injured at Kunming railway station admitted to the emergency center; 3 have died	Sensational	NULL

警方称昆明“多地发生暴力事件”系谣传	Police said rumors of “more than one violence occurred in Kunming” untrue	Information	Reassurance
昆明警方建议在外市民尽量返回家中	Kunming police recommended residents to return home	Sensational	NULL
昆明市第一人民医院仅有少量存血	Kunming First People’s Hospital keep only a small amount of blood	Sensational	NULL
昆明第一人民医院收治 60 余死伤者 包括多名民警	Kunming First People’s Hospital admitted more than 60 wounded, including several policemen	Information	Update
昆明砍杀事件已致 27 人遇难	Kunming stabbing event has caused 27 people dead	Information	Update
昆明火车站事件造成 27 人遇难 109 人受伤	Kunming Railway Station incident caused 27 people dead and 109 people injured	Information	Update
昆明市全部警力全城戒备	All police at Kunming are on high alert and on guard	Information	Reassurance
昆明火车站售票区广场仍封锁 内有防爆警察警犬	Ticketing area at Kunming Railway Station Square still blocked; riot police and dogs visible	Information	Update
昆明火车站砍杀目击者：有 4 个蒙面人在砍人	Kunming Railway Station stabbing witnesses: four masked men use knives to attack people	Sensational	NULL
昆明火车站附近邮政网点保安镇定接纳数十路人	Security at postal office near Kunming railway station calmly took in dozens of passers-by	Sensational	NULL
昆明暴力案件续:公安部强调严打严重暴力犯罪	Kunming Violent Event aftermath: Ministry of Public Security stressed erious crackdown of violent crime	Control	NULL
孟建柱赴云南处置昆明火车站暴力袭击事件	Meng Jianzhu went to Yunnan Kunming to take in charge of the violent station attack	Control	NULL
昆明医院共收治伤员 162 人 已 27 人死亡	Kunming hospitals treated 162 wounded; 27 have died	Information	Update
昆明砍杀事件亲历者称伤者未死暴徒会补几刀	Kunming witness said the victim stabbed the injured several times if not dead	Sensational	NULL
昆明暴恐事件目击：蒙面歹徒从旅客后背捅刀	Kunming violent and terrorist events witness: masked men stabbed passenger from the back	Sensational	NULL
习近平李克强委托孟建柱处置昆明暴恐事件	Xi Jinping, Li Keqiang commissioned Meng Jianzhu to take in charge of Kunming violent and terrorist incident	Control	NULL

公安部刑侦局 15 名专家连夜赶赴昆明	15 experts from Criminal Investigation Bureau at Ministry of Public Security rushed out to Kunming overnight	Control	NULL
昆明火车站暴力案件已致 28 人遇难 113 人受伤	Kunming railway station violent event has caused 28 people dead and 113 injured	Information	Update
昆明警方当场击毙 5 名暴徒 仍在围捕其余暴徒	Kunming police killed five thugs on the spot; still searching the rest of the mob	Information	Update
习近平:依法严惩昆明火车站暴力恐怖案件	Xi Jinping: Punish the Kunming Railway Station violent terrorists according to the law	Control	NULL
习近平要求依法严惩昆明火车站暴恐分子	Xi Jinping demanded stern punishment for the Kunming Railway Station violent terrorists in accordance with law	Control	NULL
目击者讲述昆明暴力恐怖事件:老人小孩都不放过	Witnesses of Kunming violent terrorist incidents: children and the old are not even spared	Sensational	NULL
农民夫妇为省钱昆明火车站过夜 丈夫遇害	Farmers couples stayed at Kunming Railway Station to save money; husband was killed	Sensational	NULL
昆明火车站暴恐事件直击：10 余名暴徒统一着装	Kunming Railway Station violent terrorist incidents witness: More than 10 thugs in uniformed cloth	Sensational	NULL
昆明暴恐事件是新疆分裂势力策划组织	Kunming violent and terrorist incidents are planned and organized by Xinjiang separatists	Control	NULL
孟建柱郭声琨赴昆明指导暴恐事件处置工作	Meng Jianzhu Guo Shengkun went to Kunming to be in charge of the violent and terrorist incident	Control	NULL
新闻早点:昆明暴恐事件由新疆分裂势力一手策划	Morning News: Kunming violent and terrorist event orchestrated by the separatist forces in Xinjiang	Control	NULL
潘基文强烈谴责昆明严重暴力恐怖事件	Ban Ki-moon strongly condemned the violent and terrorist incident in Kunming	Control	NULL
潘基文严厉谴责云南昆明火车站袭击事件	Ban Ki-moon condemned the attack in Kunming train station	Control	NULL
被抓女疑犯成昆明暴恐案侦破关键证据	The arrested female suspect was key to the investigation of Kunming violent and terrorist event	Information	Update
昆明暴恐袭击现场：先到警察无配枪也被砍伤	Scene of Kunming violent and terrorist attack: First responders without guns were stabbed too	Sensational	NULL
昆明火车站恢复售票 警方封锁候车大棚	Kunming Railway Station resume ticketing; Police cordoned off the waiting shed	Information	Reassurance

昆明火车站暴力恐怖案死伤者信息(动态更新)	Kunming Railway Station violent and terrorist incident: the victims information (dynamic update)	Information	Update
昆明暴恐案伤者:带孩子逃跑被追砍 和孩子失散	The injured at Kunming violent and terrorist event: escaping stabbers with chidren and being separated with children	Sensational	NULL
昆明暴恐案警方击毙 4 名歹徒抓获 1 名女歹徒	Kunming violent and terrorist event: police shot dead four criminals and arrested a female criminal	Information	Update
昆明火车站暴力恐怖案 143 名伤者中 73 人重伤	Kunming Railway Station violent and terrorist event: 143 injured, 73 of them seriously	Sensational	NULL
班禅大师谈昆明暴恐案:伤害众生之性命要遭报应	Panchen Lama spoke of Kunming violent and terrorist event: harming lives would have karma	Control	NULL
昆明火车站暴恐案受重伤民警完成手术	Kunming Railway Station violent and terrorist incident: seriously injured police had surgery successfully	Sensational	NULL
河南女子在昆明暴恐事件中身中 3 刀 尚未脱险	Henan women stabbed three times during the violent incidents in Kunming has not yet out of danger	Sensational	NULL
昆明暴恐案现场:手机店老板收留十余人反锁店门	Kunming violent and terrorist case site: mobile phone shop owner sheltered more than ten people	Sensational	NULL
昆明暴恐事件追踪：父亲为救女儿被砍重伤	Kunming violent and terrorist event development: father who save her daughter was seriously wounded	Sensational	NULL
昆明暴恐案 2 名车站保安员殉职 7 名民警受伤	Kunming violent and terrorist event: two station security guards killed, seven police injured	Sensational	NULL
昆明火车站暴力恐怖事件整合分析	Kunming Railway Station violent and terrorist incident: comprehensive analysis	Sensational	NULL
目击者:昆明警方使用催泪枪无效后击毙暴徒	Witnesses: Kunming police killed criminals after ineffective use of tear gas	Sensational	NULL
昆明火车站派出所警察在暴恐事件中牺牲	Policemen at Kunming Railway Station police station sacrificed her life in the incident	Sensational	NULL
外国游客目击昆明血案：地上许多血躲商店避难	Kunming foreign tourists witnessed the murder: a lot of blood on the ground	Sensational	NULL
刘翔回应昆明暴力恐怖事件：人神共愤	Liu Xiang respond to the Kunming violent and terrorist incident: indignation	Sensational	NULL
反恐专家解读昆明暴恐案：团伙作案训练有素	Anti-terrorism expert interprete Kunming violent and terrorist case: well-trained gang crime	Sensational	NULL

政协发言人回应昆明暴恐案：必须从严惩处	CPPCC spokesman spoke of Kunming violent and terrorist case: [criminals] must be severely punished	Control	NULL
云南人大代表谴责昆明暴力恐怖行为	Yunnan’s congressman condemn the violent and terrorist acts in Kunming	Control	NULL
云南人大代表谴责昆明暴力恐怖行为(图)	Yunnan’s congressman condemn the violent and terrorist acts in Kunming (Figure)	Control	NULL
云南警方所带走三名嫌疑人与昆明暴袭事件无关	The three suspects that Yunnan police took away has nothing to do with the Kunming Violent and Terrorist event	Information	Reassurance
昆明暴恐案持续 25 分钟 发现 40-50 公分砍刀 10 把	Kunming Violent and Terrorist Case continued 25 minutes; 10 knives 40-50 cm long were found	Sensational	NULL
昆明民警谢林暴恐案中牺牲消息不实 仍在抢救中	Rumor of Kunming police Xie Lin died in the Violent and Terrorist Case untrue; He is still in the rescue	Information	Update
学生昆明火车站购票：到处是民警站岗放心多了	Students at Kunming railway station buying ticket: Reassured to see the presence of police standing guard	Sensational	NULL
昆明暴恐案中 1 名保安棍打歹徒 瞬间被 5 人砍死	During Kunming Violent and Terrorist Case, a security guard clubbing criminals was stabbed to death by five people instantly	Sensational	NULL
昆明街头市民献血等候队伍长达十多米(图)	People waiting to donate blood in the streets of Kunming queue up to ten meters (Figure)	Sensational	NULL
昆明中小学将正常上课 要求校领导校门口值班	Kunming primary and secondary schools will be open as usual; School leaders are required to work on duty at the school gate	Information	Reassurance
昆明暴恐案亲历者：80 平米饭店救下两百多人	Witnesses of Kunming violent and terrorism case: 80 square meters restaurant rescued more than two hundred people	Sensational	NULL
官方：昆明暴恐案伤者须缴 5 万元押金为造谣	Official: rumors saying the injured of Kunming Violent and Terrorist case required to pay 50,000 yuan as deposit are untrue	Information	Reassurance
普京就昆明暴恐案向习近平致电：事件令人发指	Putin’s call Xi Jinping on the Kunming Violent and Terrorist case: outrageous event	Control	NULL
警方展示昆明暴力恐怖袭击事件凶器(图)	Police show weapons used in Kunming Violent and Terrorist attack (Figure)	Sensational	NULL
普京就昆明暴恐案向习近平致电：事件令人发指	Putin’s call Xi Jinping on the Kunming Violent and Terrorist case: outrageous event	Control	NULL

普京就昆明暴恐案向习近平致电：事件令人发指	Putin’s call Xi Jinping on the Kunming Violent and Terrorist case: outrageous event	Control	NULL
美国谴责昆明恐怖暴力袭击事件	The United States condemns the terrorist attack in Kunming	Control	NULL
国际社会强烈谴责昆明暴力恐怖事件	The international community strongly condemns the violent and terrorist incident in Kunming	Control	NULL
独家盘点：昆明暴恐案中值得记住的人	Exclusive: people during the Kunming Violence and Terrorist Case that are worth remembering	Sensational	NULL
数百民众到昆明火车站为暴恐事件遇难者守夜	Hundreds of people attended vigil at the Kunming railway station for the victims of the Violent and Terrorist incident	Sensational	NULL
昆明将承担暴恐事件伤者医疗费和家属陪护费用	Kunming government will bear all the cost for medical expenses of the injured and the cost of accompanying family members	Information	Reassurance
昆明长水国际机场全面提升安检级别	Kunming Changshui International Airport will upgrade its security level	Information	Reassurance
27 名专家赶赴昆明救治恐怖事件伤员	27 experts arrive at Kunming to treat the injured during the Terrorist incidents	Information	Reassurance
昆明暴恐案伤者无需办手续和缴费 医院直接救治	The injured during the Kunming Violent and Terrorist Event do not need registrations, payment, and papework; hospitals offer treatment for free	Information	Reassurance
昆明火车站暴力恐怖袭击事件 24 小时梳理	24 hours during the Kunming Railway Station violent and terrorist attack	Sensational	NULL
昆明暴恐事件回顾:12 分钟杀戮致 29 死 143 伤	Kunming Violent and Terrorist Event review: 12 minutes killings caused 29 dead 143 injured	Sensational	NULL
刘翔回应昆明暴力事件:人神共愤(图)	Liu Xiang [famous athlete] responded to the Kunming violent event: fury and outrage (Figure)	Sensational	NULL
昆明车站派出所副所长高喊“来砍我”引开歹徒	The deputy director of Kunming railway station police bureau shouted “come to get me” to divert criminals	Sensational	NULL
联合国安理会谴责昆明恐怖袭击事件	The UN Security Council condemned the terrorist attack in Kunming	Control	NULL
联合国安理会谴责昆明恐怖袭击事件	The UN Security Council condemned the terrorist attack in Kunming	Control	NULL

尹卓刘建解读昆明暴力恐怖案:地处边陲戒备较松	Yin Zhuo and Liu Kunming interpret Kunming Violent and Terrorist case: the borderland has loose guard	Sensational	NULL
昆明书记看望受伤人员称昆明市将承担救治费用	Kunming's party secretary visited the injured, stressing that the government will bear the cost of treatment	Information	Reassurance
专家分析恐怖分子选择昆明作案原因	Experts analyse why terrorists choose Kunming to commit crimes	Sensational	NULL
张春贤谴责昆明暴恐事件:手段凶残 令人发指	Zhang Chunxian condemn terrorist violence in Kunming event: brutal means outrageous	Control	NULL
美使馆对昆明事件中文措辞引发中国网友不满	US embassy's rhetocis regarding the Kunming event triggered anger from Chinese netizens	Sensational	NULL
日本官房长官向昆明暴力恐怖事件死难者致哀	Japanese Chief Cabinet Secretary offer condolences to the victims of Kunming Violent and Terrorist incident	Control	NULL
政协开幕会为昆明暴力恐怖事件遇难者默哀	Kunming CPPCC opening session mourns for the victims of Kunming Violent and Terrorist incident	Control	NULL
毛新宇谈昆明暴恐事件:建议制定反恐法	Mao Xinyu [Mao Zedong's grandson] spoke of Kunming Violent and Terrorist Event: it's time to establish an anti-terrorism law	Sensational	NULL
韩国政府表态谴责昆明暴力恐怖事件	The South Korean government statement condemned the Kunming Violent and Terrorist incident	Control	NULL
外交部回应部分国家未称昆明事件为恐怖事件	Foreign Ministry says that some countries do not refer the Kunming incident as a terrorist event	Sensational	NULL
外交部：昆明暴恐现场发现“东突”旗帜	Foreign Ministry: the "East Turkistan" banner found at the scene of Kunming Violent and Terrorist incident	Control	NULL
昆明卫生局公开寻亲电话 6 名遇难者未找到亲属	Kunming Health Bureau offer the public a phone number to trace relatives: six victims remain unidentified	Information	Update
外交部：昆明暴恐现场发现“东突”旗帜	Foreign Ministry: the "East Turkistan" banner found at the scene of Kunming Violent and Terrorist incident	Control	NULL
昆明暴力恐怖案告破 3 名在逃案犯落网	Kunming Violent and Terrorist case has been solved: three fugitives were arrested	Information	Reassurance
血色昆明：29 条生命的最后一个夜晚	Bloody Kunming: Last night for 29 Lives	Sensational	NULL
昆明特警队员 1 人 15 秒开枪击倒 5 名暴徒	A Kunming SWAT team member shot down five criminals in 15 seconds	Sensational	NULL

昆明暴恐事件 20 名危重伤员尚未脱离生命危险	20 critically injured during the Kunming Violent and Terrorist event are yet out of danger	Information	Update
中国记协指责西媒对昆明暴恐事件报道别有用心	China Journalists Association accused the Western media of bias and insidious motives in reporting Kunming Violent and Terrorist event	Sensational	NULL
央视辟谣：昆明暴恐事件受伤警察谢林没有牺牲	CCTV rumor rebuttal: Injured policemen Xie Lin is still alive	Sensational	NULL
云南对昆明火车站暴恐事件处置原委	Yunnan government details its handling of the Kunming Railway Station violent and terrorist incident	Information	Update
昆明严重暴恐案嫌犯可能受过专门训练	Suspects in Kunming Violent and Terrorist case may be trained professionally	Sensational	NULL
政协为昆明暴恐案逝者默哀 委员称事先不知情	CPPCC mourn the victims in the Kunming Violent and Terrorist event; members said they had no prior knowledge of the event	Control	NULL
昆明暴恐案警察讲述与暴徒搏斗经历	Kunming police told the stories of fighting with the criminals in Kunming Violent and Terrorist case	Sensational	NULL
昆明暴力恐怖案发后谣言汇总:成都无砍人事件	Summary of rumors during the Kunming Violent and Terrorist incident: Chengdu had no stabbing insident	Sensational	NULL
美国务院称昆明事件是恐怖主义行为 哀悼遇难者	The US State Department said the Kunming incident is terrorism; they mourn the victims of terrorist acts	Control	NULL
昆明规定买散装汽油或摩托加油要实名	Kunming government requires real name identity before buying in bulk gasoline or motor fuel	Information	Update
昆明火车站旅客受民警感染自发围捕暴徒	Kunming railway station passenger inspired by police and rounded up criminals	Sensational	NULL
昆明车站暴徒原想参加“圣战” 辗转多地出不去	Kunming railway station criminals wanted to join “jihad” but could not get out of the border	Information	Update
昆明暴恐案 8 暴徒分工:5 人现场砍杀 3 人外围接应	8 thugs in the KunmingViolent and Terrorist case: 5 people on-site stabbing the other 3 assisting outside	Information	Update
昆明暴恐案后维族小伙受访:没想过要离开昆明	A Uyghur guy responded to the Kunming Violent and Terrorist case: I never thought of leaving Kunming	Sensational	NULL
朝鲜总理就昆明暴力恐怖案件向中方致慰问电	North Korean Prime Minister Sends Message of Condolences to China over the case of terrorist attack in Kunming	Control	NULL

全国人大会议开幕会为昆明暴恐事件遇难者默哀	National People's Congress opening session mourn the victims of the Kunming Violent and Terrorist Attack	Control	NULL
李克强脱稿谴责昆明暴恐事件	Li Keqiang condemned Kunming Violent and Terrorist event without script	Control	NULL
专家解读恐怖分子为何选昆明施暴	Experts interpret why terrorists chose Kunming for their violence	Sensational	NULL
新疆羊肉串小贩带头向昆明暴恐案伤者捐款(图)	Xinjiang peddler selling lamb skewers take the lead in donating to the injured during the Kunming Violent and Terrorist case (Figure)	Sensational	NULL
热比娅在加拿大议会为在昆明作案暴徒狡辩	Rebiya Kadeer defended the terrorist during the Kunming Violent and Terrorist incident in the Canadian Parliament	Sensational	NULL
昆明伊斯兰教界：暴恐分子完全违背穆斯林精神	Kunming Islamic community: terrorists completely violate the spirit of Muslims	Control	NULL
昆明暴恐案后 45 人在网上造谣传谣被查处	45 people have been punished for spreading online rumors after the Kunming Violent and Terrorist incident	Control	NULL
昆明暴恐案受伤 7 名警员均为正面伤	Seven injured officers were injured in the front during Kunming Violent and Terrorist incident	Sensational	NULL
张春贤否认新疆严打致暴恐向北京昆明等地蔓延	Zhang Chunxian denies that Xinjiang crackdown caused violence to spread to Beijing, Kunming and other places	Sensational	NULL
亲历者忆昆明暴恐案:至少两名恐怖分子坐我身边	Witnesses recalled the Kunming Violent and Terrorist case: at least two terrorists sitting next to me	Sensational	NULL
昆明第一人民医院还有 11 名伤员未脱离生命危险	Kunming First People's Hospital still has 11 critically injured	Information	Update
张春贤谈昆明暴恐案哽咽:曾自己在房里静静思考	Zhang Chunxian hold back tears when speaking of the Kunming Violent and Terrorist case: he sat in his room quietly for reflections	Control	NULL
昆明暴恐事件逝者七日祭：失去丈夫的七个妻子	Seven-day mourning of thedead during the Kunming Violent and Terrorist event: seven wives who lost their husbands	Sensational	NULL
昆明暴恐案遇难老人一生愿望是坐次火车	The life-long dream of an elderly who lost his life in the Kunming Violent and Terrorist case is to take the train	Sensational	NULL
昆明暴恐案后七种表情：从悲伤到坚强	Seven facial expressions after the Kunming Violent and Terrorist case: from sadness to perseverance	Sensational	NULL

云南省长:无迹象表明飞机失联与昆明暴恐有联系	Yunnan governor: no indications that the aircraft loss has connection to the Kunming railway station attack	Sensational	NULL
昆明暴恐案最新情况:27 人出院 1 人有生命危险	Kunming Violent and Terrorist attack update: 27 people discharged from hospital and one is critically injured	Information	Update
昆明：公共场所非法携带管制器具将从重处罚	Kunming: illegal carrying controlled weapons at public places will be severely punished	Information	Reassurance
昆明暴恐案 3 暴徒案发前在红河落网	# criminals of the Kunming Violent and Terrorist case were arrested in Honghe not long before	Information	Update
最高法院长:依法从重从快处理昆明暴恐犯罪	Director at the Supreme Court: punish the criminals severely and efficiently according to law	Control	NULL
“东伊运”发布视频妄称支持昆明暴恐事件	“East Turkistan Islamic Movement” released a video claimed support to the violent terrorist incident in Kunming	Sensational	NULL
昆明暴恐余波:全国公安基层加强警察用枪训练	The aftermath of the Kunming Violent and Terrorist event: public security forces strengthening basic training nationwide	Sensational	NULL
昆明火车站暴恐案 4 名犯罪嫌疑人被批捕	Four suspects of the Kunming Violent and Terrorist attack were formally arrested	Information	Update
昆明重点地段现 PTU 机动部队应对突发事件	Critical public places in Kunming now have PTU mobile forces to respond to emergencies	Information	Reassurance
昆明火车站致 29 死暴恐案 4 名被告被提起公诉	Four defendants who caused 29 dead in the Kunming Railway Station Violent and Terrorist case are formally prosecuted	Information	Update
昆明火车站暴恐案四被告被提起公诉	Four defendants of the Kunming Railway Station Violent and Terrorist case are prosecuted publicly	Information	Update

Appendix D. Post Coding, Codebook, and Classification

To distinguish political posts from nonpolitical posts, I use a combination of characters and phrases. The characters and phrases come from three sources: one, the list of sensitive keywords on Weibo from Citizen Lab; two, the topics and keywords from King, Pan, Roberts, 2013; three, a set of characters and phrases (some are specifically related to the event) brainstormed from my research team. I use these characters and phrases to detect whether a post is political or not. If a post contains one phrase or character from my keyword list, this post will be labeled as potentially political. Otherwise, it is nonpolitical.

Using an independent and hand-coded set of 2,000 posts drawn from the same database, I find that more than 99.9% of labeled nonpolitical posts are indeed nonpolitical.[11] Those labeled as potentially political, 47.3% are political. I then read all potentially political posts and visually code those political ones.

[11] Additional 1,000 posts were draw from a random sample of posts dispatched in 48 hours following the event for evaluation, which yields a similar result. Furthermore, 300 posts were draw before the event and 359 long after the event. They all yield similar evaluation results.

Table A.4 The combination of characters and phrases used for keyword filtering

Chinese characters and phrases for keyword filtering
党,国家,昆明,火车站,暴力,暴恐,恐怖分子,歹徒,祈福,蒙面,砍杀,特警,穆斯林,维族,伊斯兰,枪毙,极端主义,民族,世维会,富二代,中南海,毒奶粉,死猪肉,食品安全,贵国,和平奖,刘晓波,艾未未,艾末末,黄菊,蔡英文,藏毒,迫害,区伯,光诚,马英九,希特勒,斯大林,批斗,林彪,才厚,仇和,苏荣,熙来,老朽,郭振玺,谷开来,令计划,王立军,杨卫泽,万庆良,约谈,贪官,李小鹏,伯雄,谷俊山,习大大,许志永,Tohti,刘云山,郭美美,贾庆林,柯文哲,公有制,西方价值观,庆亲王,庆丰,习某,袁贵人,曾庆洪,刁包子,穹顶之下,刁犬犬,周带鱼,江绵恒,毒菜政府,撑起雨伞,雨遮革命,香港觉醒,敢想不敢说,站中,主习,黄之锋,Facebook,Twitter,Instagram,彭阿姨,膀胱癌,江志成,铁流,抹黑习,周薄,习王,亲属在美加,红色恐怖,平反,南周事件,朱琳,电婊,哈儿律师,抄家,陈一谘,林昭,杨佳,公车私用,武嵘嵘,伊力哈木,习周,夏俊峰,习三胖,游 xing,栗战书,Li 战书,胡春华,网络封锁,敏感词,陆肆,陆四,六肆,捌玖,捌九,八玖,戒严,学运,学潮,镇压,屠杀,游行,北京屠城,丁子霖,张先玲,胡耀邦,赵紫阳,李鹏,世维会,纽约时报,吴邦国,李长春,报禁,中国梦,俞正声,张德江,全能神,东方闪电,谷丽萍,石八大,石巴大,斯巴大,屎吧嗒,屎粑大,思八达,丝八大,丝巴大,撕八大,撕巴大,死八大,死巴大,纽时,扭腰 times,温宝,温帝,影帝,温夫人,胡德平,反日,抗日,内联网,防火长城,张高丽,郭金龙,王安顺,正腐,邓家贵,吴龙,张燕南,梁振英,zy 康,z 永 K,财产公示,陈光 C,陈 G 诚,C 光 C,CG 诚,路透,习公主,法广,赖昌星,王丽娟,叛逃,励之,方 lizhi,方校长,自焚,海伍德,政法委,薄瓜瓜,贾公子,北四环车祸,保福寺车祸,李庄,互联网信息办公室,南苏联,半羽,五美分,主体思想,中华斯坦,中 yang,王佩英,曾成杰,挡中央,拱产,家奴,雾 M,公民,敏感人士,不明真相,反腐,删帖,图样图森,一个档,一个裆,财厚,美领馆,皿煮,汤灿,不厚,吕不韦,黄丝带,彭嘛嘛,免煮,元跟,二胖,军事手段,西朝鲜,目田,申纪兰,木子月月鸟,教宗,政治家,刁总,中国淫,毒大米,彭家声,盐铁专卖,打鸭,自己选自己,砖员,瓷器国,黄汉,鸟官,红朝,

李德胜,李小琳,才帝,总湿,屌总,射击湿,射击师,国母,叶迎春,功夫墙,军事院校,你匪,CCP,群蛆,涅姆佐夫,浦志强,沈大伟,我裆,张雪忠,夏霖,勃列日涅夫,郭正刚,老贪,紧掏,禁评,非死不可,零食馆,雨伞革命,邓矮子,邓总湿,赵尔巴乔夫,赤匪,贾小眸,薛蛮子,蒋光头,茉莉花革命,腥猪国,胡尔巴乔夫,网评猿,矮帝,瓷器镇,活摘器官,沙皇,汤火山,江 Core,民猪,民煮,新语丝,希拉里,台毒,古月帝,左倾,公共事务,藏独,干涉内政,官方声明,周斌,秃朝,乌有之乡,三公消费,粪青,康师傅,三胖,唐慧,毛左,酗,殖民主义,元根,邓大人,东突,世祖,三民主义,罗克,红头文件,奥黑,彭妈妈,妓者,财产公开,米帝,毛新宇,拆哪,右倾,非正常死亡,路边社,强征,支那,自干五,反对派,官民,臣子,极权,恩恩,叛国,马克吐温,太上皇,8 平方,劳教,违宪,面霸,方舟子,小贪,呼格,政治局,凸样凸森,KMT,屁民,普世价值,宋祖英,列宁,大贪,信访局,专政,人民公仆,委员长,最高法院,选民,敌对势力,观海,双规,封建社会,莫迪,普选,GMD,无神论,裸官,老习,王岐山,一国两制,战犯,公权,包拯,利益集团,达赖,蟾蜍,统战部,集权,红二代,军费,网特,领导小组,彭德怀,父母官,蒋经国,依宪治国,猎狐,特首,渣浪,果敢,邪教,水军,外媒,坐牢,纪检,水表,NGO,VPN,维稳,社交网络,周恩来,独裁,习总,跪舔,难民,环球时报,巡视组,形式主义,八国联军,老根,销号,普世,彭麻麻,十八大,金三胖,曼德拉,叛徒,少将,油管,廉洁,廉政,美分,政客,常委会,清官,河蟹,情妇,CCAV,红歌,脸书,禁言,女权,议会,斯巴达,南方周末,包公,查水表,老蒋,打虎,芮成钢,公知,贪腐,纳税人,5 毛,落马,元首,转世,封号,发言人,砖家,推特,专制,共产主义,快播,选举,执政,公投,强拆,中国特色,贫富,普京,蛤蟆,文革,死刑,作风,依法治国,美帝,马克思,翻墙,占中,宪法,犯法,理想主义,穹顶,潜规则,讨薪,上访,人权,冻结,五毛,谷歌,特权,阶级,维权,民众,有关部门,拆迁,新闻联播,毛泽东,司法,民生,共和,体制,前朝,举报,民主,将军,广电,抵制,太子,农民工,天朝,老朋友,城管,司法改革,洗脑,毛主席,苍蝇,底层,大陆,屏蔽,社会主义,社会公平,九二共识,言

论自由,释放,挪用公款,公款私用,医改,安乐死,朱榕基,朱熔基,国将不国,民不聊生,越反越腐,权力斗争,纪委,

检察院,人大,政协

Appendix E. Holidays in study period

Chinese gather for family reunions during holidays, such as the spring festival and new year's day. During these holidays, the movement trajectories of Chinese can be significantly different in that most of them change their routines (e.g., take a train or go hiking). The irregularity of their movement poses a potential threat for my analysis: for example, Kunming residents might be farther to the railway station because of their holiday schedule, instead of receiving information from CCP. To ensure the robustness of my comparison, I consider the following list of days as holidays (Table A.5). To accommodate the holiday arrangement, the Chinese government included a number of weekend days as a workday.[12] I consider the list of weekend days as workday (Table A.5).

Table A.5. Holiday arrangements by Chinese government

	Holidays	Inclusion for Workday
New Year	01/01/2014	
Chinese New Year	01/30/2014-02/06/2014	01/26/2014, 02/08/2014
Qing Ming	04/05/2014-04/07/2014	
Labor Day	05/01/2014-05/03/2014	05/04/2014
Duan Wu	06/02/2014	

[12] Administrative Office at the State Council, http://www.gov.cn/zwgk/2013-12/11/content_2546204.htm, accessed on May 14th, 2018.

Appendix F. Descriptive Summary

I present the descriptive summary for key variables in the 8-month study period (Table A.6), IV estimation with a 24-hour bandwidth (Table A.7), 2-hour bandwidth (Table A.8), and 30 minutes bandwidth (Table A.9). The number of observations have been reported in the main text.

I also include a heatmap of citizen movement trajectories 4-month before and after the attack. They show that less citizens appear in the downtown area near the railway station.

Table A.6 Descriptive Statistics for all data

Statistic	Mean	St. Dev.	Min	Max
Distance to the Kunming railway station (in meter)	16,609.8	19,705.6	9.2	132,063.1
Political Post	0.02	0.1	0	1
Government information	28.1	21.7	0	48
Assertion of control	21.4	16.6	0	37
Sensational stories that incite nationalism	38.7	30.1	0	65
Days after the attack	38.7	41.3	0	122

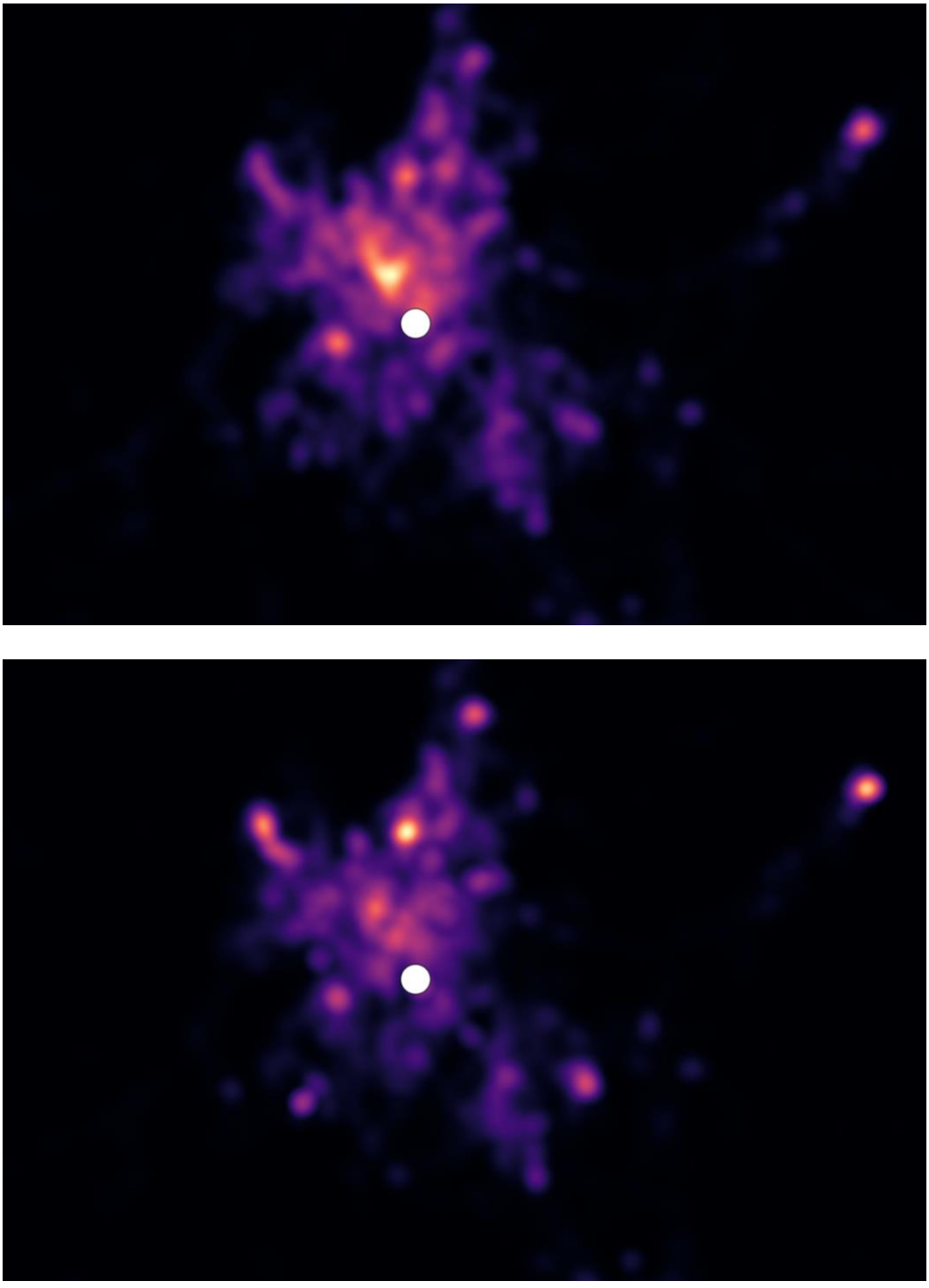
Table A.8 Descriptive Statistics for data in 2-hour bandwidth

Statistic	Mean	St. Dev.	Min	Max
Distance to the Kunming railway station (in meter)	14,498.1	17,361.2	60.2	121,618.3
Political Post	0.2	0.4	0	1
Government information	28.8	12.3	0	48
Assertion of control	18.9	12.9	0	37
Sensational stories that incite nationalism	33.4	22.0	0	65
Days after the attack	10.9	27.6	0	121

Table A.9 Descriptive Statistics for data in 30-minute bandwidth

Statistic	Mean	St. Dev.	Min	Max
Distance to the Kunming railway station (in meter)	13,839.8	16,589.6	60.2	120,461.1
Political Post	0.3	0.5	0	1
Government information	24.0	12.1	0	48
Assertion of control	13.9	12.4	0	37
Sensational stories that incite nationalism	24.7	20.9	0	65
Days after the attack	6.3	21.3	0	121

Figure A.3. The heatmaps of citizen movement trajectories 4-month before and after the attack



Top: the heatmap of citizen movements before the attack

Bottom: the heatmap of citizen movements after the attack

Appendix G. Sensitivity Analysis, Robustness Checks, and Placebo Tests

To make sure my results are robust, I conduct multiple checks. First, I have examined the density of data around the cutoffs. A figure of posts sent 30 minutes before and after each government's press release is disseminated shows that the data is dense (Figure A.4). Dependent on the time of the day, the volume of posts can vary. Nevertheless, the volume of posts is mostly dense and balanced across multiple press releases. Second, regressions of covariates on citizens' social media features, such as the number of followers, followings, or the cumulative number of posts, shows that the increase of government disseminated information does not affect the structure of social network significantly (Table A.10). Such findings suggest that citizens' activities on social media have not changed significantly to violate the exclusion restrictions. In other words, it is unlikely that my sample of citizens in Kunming engage in social media activities differently because of the government's information dissemination.

In addition, I perform multiple robustness checks to test the hypothesized mechanism and alternative explanations. First, I perform IV estimation using political posts for the hypothesis testing. The results from IV estimation show that it is consistent with the main findings—citizens engage with political discussions more after they receive a piece of information disseminated by the government (Table A.11). This is not surprising. However, some citizens' public opinions may also influence other citizens, which violates the SUTVA of IV estimation (Imbens, Guido W, and Donald B Rubin. 2015. Causal Inference for Statistics, Social, and Biomedical Sciences: An Introduction. Cambridge University Press.). I exclude these results from the main analysis. I also include a quadratic term in the estimation. The quadratic term can show at what rate citizens engage with the government information when the government disseminates more information. The results indicate that even when citizens are more actively engaging with the government

information after they receive them, they engage with it at a significantly negative rate (Table A.12). It indicates a possibility of declining trust in the information.

Second, I separate the information that is explicitly intended to reassure the public from those that update casualties and the government's handling of the attack. A possible alternative explanation is that updates on casualties dissuade citizens from visiting the railway station and its surrounding areas because they remind them of the violence. However, by separating such a mechanism from the effect of information dissemination, the results still hold (Table A.13).

Third, regressions by including other covariables also find similar results. When the variable of whether the post is dispatched during an off-work hour is also considered as another exogenous variable, the average treatment effect remains significant but much larger (Table A.15). By including the social media profile as control variables, I find similar results (Table A.17). I have also tested citizens' response to the government information about the attack when their interest level presumably remains constant. The result is consistent to my findings, as shown in Table A.14.

Figure A. 4. The number of Weibo posts before and after government disseminated information

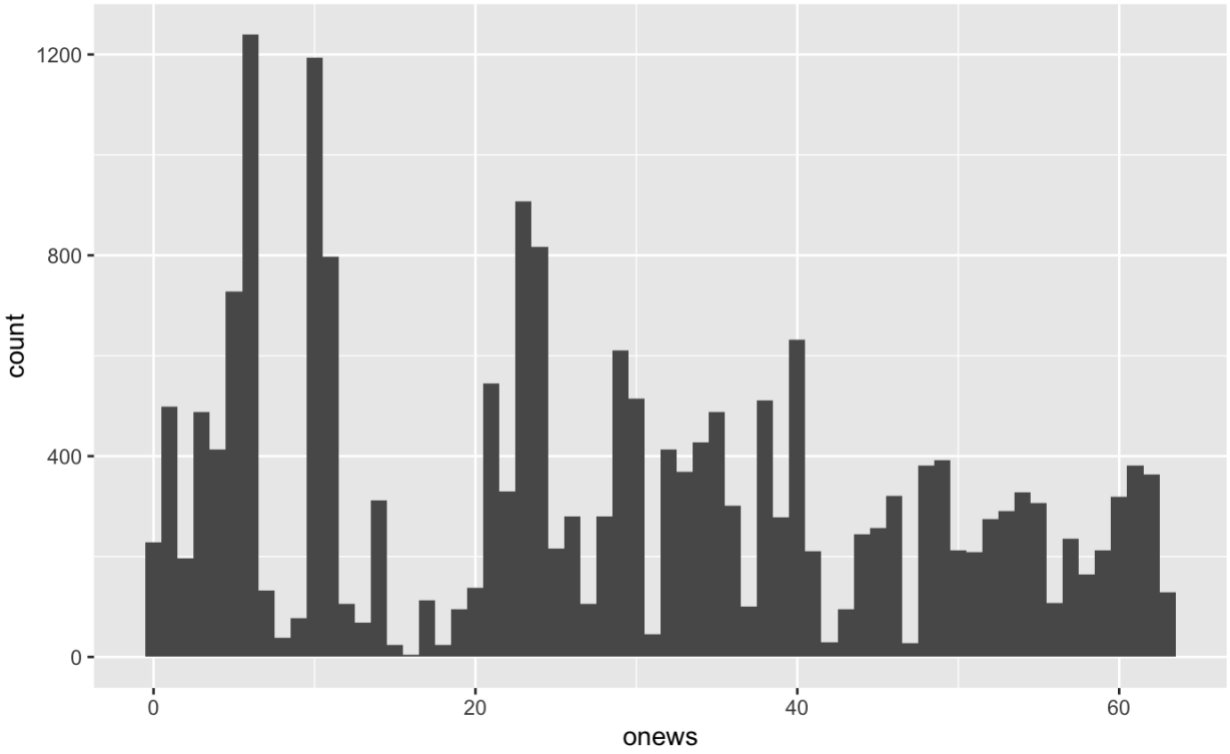


Table A.10. Continuity at Cutoffs

	Dependent variable:		
	Cumulative number of posts	Number of followers	Number of followings
Regressors			
Government information	7.440 (4.235)	-0.964 (3.785)	0.031 (0.076)
Constant	1,240.118*** (163.432)	1,008.395*** (146.062)	244.009*** (2.916)
Number of observations	148,387	148,387	148,387

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Table A.11 IV estimation of the effect of the government information on political talk

	OLS	2SLS		
	(1)	Discontinuity Samples		
	Full sample (8-month)	(2) 24 hours	(3) 2 hours	(4) 30 minutes
Government information	0.454*** (0.005)	0.334*** (0.009)	0.222*** (0.016)	0.209*** (0.027)
Assertion of control	0.035*** (0.012)	-0.137*** (0.016)	-0.140*** (0.023)	-0.062 (0.038)
Sensational stories	-0.328*** (0.008)	-0.164*** (0.010)	-0.092*** (0.014)	-0.075*** (0.023)
Days passed	-0.015*** (0.0005)	-0.019*** (0.001)	-0.039** (0.009)	-1.161*** (0.354)
Number of observations	1,247,106	148,387	38,551	17,162

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Table A.12. The estimated effect of government information on citizen engagement, logistic regression

Regressors	Political talk, binary
Government information	0.459*** (0.005)
Government information, squared	-0.007*** (0.0002)
Days passed	0.004*** (0.0007)
Assertion of control	-0.043*** (0.011)
Sensational stories	-0.068*** (0.010)
Number of observations	1,247,106

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Table A.13. Responses to government reassurance about the attack

	Dependent variable:
	Distance to the station, meters
Regressors	
Government reassurance	562.208***
	(37.627)
Constant	8,452.684***
	(465.855)
Number of observations	72,963

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Table A.14 Simple regression to estimate the effect of the government information on information credibility

	OLS	Subset Samples		
	(1)			
	Full sample (8-month)	(2) 24 hours	(3) 2 hours	(4) 30 minutes
Government information	59.709*** (0.812)	100.697*** (3.989)	112.154*** (7.180)	87.810*** (10.413)
Constant	14,934.740*** (28.789)	12,003.140*** (153.904)	11,266.440*** (224.893)	11,729.020*** (280.408)
Number of observations	1,247,106	148,387	38,551	17,162

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Table A.15 IV estimation of the effect of the government information on information credibility, robustness checks

	OLS	2SLS		
	(1)	Subset Samples		
	Full sample (8-month)	(2) 24 hours	(3) 2 hours	(4) 30 minutes
Government information	59.734*** (0.812)	350.411*** (22.885)	307.276*** (43.071)	270.456*** (71.617)
Offwork (=1)	-213.558*** (38.648)	2897.462*** (338.973)	3230.553*** (881.981)	3,065.691* (1,465.485)
Constant	14,996.81*** (30.903)	1,811.433 (965.193)	3,796.033* (1,761.87)	5,073.172 (2,789.10)
Number of observations	1,247,106	148,387	38,551	17,162

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Table A.16 IV estimation of the effect of government information on information credibility, robustness checks

	OLS	2SLS		
	(1)	Subset Samples		
	Full sample (8-month)	(2) 24 hours	(3) 2 hours	(4) 30 minutes
Government information	292.90*** (14.93)	1,807.28*** (131.42)	1,572.71*** (269.69)	2,455.23** (755.84)
Assertion of control	379.16*** (24.87)	135.15* (57.63)	-305.77** (98.67)	-792.29** (293.21)
Sensational stories	-377.88*** (16.88)	-1,066.50*** (88.98)	-612.34*** (117.74)	-853.84** (263.36)
Constant	14,903.40*** (28.83)	-2,227.30 (1,146.03)	-4,555.91 (2,914.06)	-13,044.97 (7,860.86)
Number of observations	1,247,106	148,387	38,551	17,162

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Table A.17 IV estimation of the effect of government information on information credibility, robustness checks

	OLS	2SLS		
	(1)	Subset Samples		
	Full sample (8-month)	(2) 24 hours	(3) 2 hours	(4) 30 minutes
Government information	59.645*** (0.811)	292.8*** (16.84)	219.0*** (20.23)	182.43*** (30.70)
Number of follower	-0.003*** (0.001)	-0.006* (0.0028)	-0.008 (0.0039)	-0.027 (0.0208)
Number of following	-3.269*** (0.050)	-3.433*** (0.536)	-3.385*** (0.496)	-2.554*** (0.685)
Constant	15,766.6*** (31.38)	5,810.1*** (641.3)	9,005.5*** (627.4)	10,072.3*** (780.5)
Number of observations	1,247,106	148,387	38,551	17,162

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Table A.18 IV estimation of the effect of government information on information credibility, robustness checks

	OLS	2SLS		
	(1)	Subset Samples		
	Full sample (8-month)	(2) 24 hours	(3) 2 hours	(4) 30 minutes
Government information	71.55*** (0.811)	284.9*** (16.73)	209.9*** (20.16)	166.8*** (31.03)
Citizen at the station after the attack (=1)	-17,059.9*** (124.8)	-15,372.8*** (153.92)	-13,690.4*** (198.5)	-10,378.4*** (768.6)
Constant	14,948.0*** (28.58)	5,805.7*** (626.4)	9,008.6*** (611.9)	10,378.4*** (768.6)
Number of observations	1,247,106	148,387	38,551	17,162

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Table A.19 IV estimation of the effect of government information on information credibility, robustness checks

	OLS	2SLS		
	(1)	Subset Samples		
	Full sample (8-month)	(2) 24 hours	(3) 2 hours	(4) 30 minutes
Government information	47.69*** (0.819)	289.4*** (17.01)	213.6*** (20.4)	178.0*** (31.15)
Citizen at the station before the attack (=1)	-14,460.4*** (151.5)	-4,024.3*** (636.8)	-7,346.7*** (627.6)	
Constant	15,473.5*** (29.23)	5,094.7*** (635.9)	8,344.8*** (615.6)	9,560.3*** (765.7)
Number of observations	1,247,106	148,387	38,551	17,162

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.

Table A.20. Responses to government information about the attack on Tencent News

	Dependent variable:
	Distance to the station, meters
Regressors	
Government information	329.494***
	(14.947)
Constant	-9,161.302***
	(1,122.959)
Number of observations	150,237

Note: *p<0.05; **p<0.01; ***p<0.001,

clustered robust standard errors in parenthesis.