

# Capturing Clicks: How the Chinese Government Uses Clickbait to Compete for Visibility\*

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## Abstract

The proliferation of social media and digital technologies has made it necessary for governments to expand their focus beyond propaganda content in order to disseminate propaganda effectively. We identify a strategy of using clickbait to increase the visibility of political propaganda. We show that such a strategy is used across China by combining ethnography with a computational analysis of a novel dataset of the titles of 197,303 propaganda posts made by 213 Chinese city-level governments on WeChat. We find that Chinese propagandists face intense pressures to demonstrate their effectiveness on social media because their work is heavily quantified—measured, analyzed, and ranked—with metrics such as views and likes. Propagandists use both clickbait and non-propaganda content (e.g., lifestyle tips) to capture clicks, but rely more heavily on clickbait because it does not decrease space available for political propaganda. Government propagandists use clickbait at a rate commensurate with commercial and celebrity social media accounts. The use of clickbait is associated with more views and likes, as well as greater reach of government propaganda outlets and messages. These results reveal how the advertising-based business model and affordances of social media influence political propaganda and how government strategies to control information are moving beyond censorship, propaganda, and disinformation.

**Keywords:** propaganda, clickbait, social media, quantification, China, WeChat

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## Introduction

With the advent of mass media, governments acquired the ability to reach large, captive audiences. By crafting compelling propaganda messages, governments could influence opinions and behaviors at scale. In Germany before World War II, radio broadcast increased support for the Nazi Party (Adena et al. 2015). In 1970s Brazil, exposure to propaganda increased mass support for the values espoused by the regime (Geddes and Zaller 1989). During the 1994 Rwandan genocide, Hutu-controlled radio broadcasts increased Tutsi death rates (Yanagizawa-Drott 2014). In China in the 2000s, exposure to government propaganda in newspapers increased support for the regime (Stockmann and Gallagher 2011). In Mali villages as recently as 2012, exposure to radio propaganda increased citizens' willingness to delay elections (Bleck and Michelitch 2015). In all of these examples, political propaganda distributed through government-controlled channels were highly visible, capturing the public's attention.

What happens in the age of digital media? We theorize that the proliferation of social media and digital technologies has made it necessary for governments to expand their strategies beyond crafting political propaganda content in order to disseminate propaganda effectively. Declining audiences for mass media means that governments cannot rely on newspapers, television, and radio to reach the population. The affordances of social media propel the creation of large volumes of content, and while governments can use online censorship to suppress certain types of information, unless the internet is shut down or digital media is inaccessible, censorship does not reduce the overall volume of information. Previous research has focused on government strategies that use bots, algorithms, and large-scale human intervention (e.g., click farms, troll armies) to distract the public and to artificially manipulate public perceptions (King et al. 2017; Marwick and Lewis 2017; Roberts 2018; Shorey and Howard 2016; Woolley and Howard 2017).

We identify a new strategy that governments can use to capture the public's attention in the context of digital media. This strategy uses clickbait to capture clicks as a means of increasing the visibility of political propaganda. We define political propaganda as messages aimed at shaping political preferences, attitudes, opinions, and behavior of the public. We define clickbait as a way of structuring headlines and online content to generate but not fulfill readers' curiosity so readers are compelled to click to obtain more information (Chakraborty et al. 2016; Loewenstein 1994). Clickbait can increase the visibility of political propaganda by boosting users' familiarity with and favorability toward online government outlets that disseminate propaganda, and in turn, users'

likelihood of viewing propaganda content online.

This strategy is applicable when governments do not want to spread false information, artificially manipulate the visibility of propaganda, or use proxies to boost the visibility of propaganda. While governments can also capture clicks by producing nonpolitical content that is entertaining or useful to readers, we expect clickbait to be used extensively and non-political content less so. This is because non-political content reduces the space available for propaganda, and producers of propaganda have incentives to avoid the appearance that they are shirking in their duty of disseminating propaganda. In contrast, clickbait can be applied to any content and is a tried-and-true digital marketing tool for advertisers who make money by capturing clicks and views online (Potthast et al. 2018).

We empirically assess whether such a strategy is employed by the Chinese government by combining ethnographic and computational methods. For the ethnography, we spent three months co-located with producers of local government propaganda in four localities across China. For the computational analysis, we collected data from WeChat, generating a novel dataset of the titles and metadata of 197,303 posts made by 213 city-level Chinese government WeChat Official Accounts, which we analyze using topic modeling, natural language processing methods, and large-scale human coding.

We show that city governments across China are disseminating nonpolitical content in their propaganda accounts, but not so much that it overshadows propaganda. Instead, clickbait proliferates in the headlines of government propaganda accounts, at a rate on par with what is found in popular non-government and non-state social media accounts and at a rate that vastly exceeds other strategies to attract clicks such as emotional appeals. Finally, we find that some clickbait strategies are correlated with more views while others are correlated with more “likes,” and government social media accounts that use clickbait more extensively are also more likely to have greater visibility and reach.

This paper reveals how digital media are fundamentally reshaping government efforts to control information online. The paper arrives at its conclusions by taking seriously the constraints and opportunities provided by the advertising-based business model of social media platforms and by recognizing the long history of entanglement between political propaganda and advertising (Jowett and O’donnell 2018; Schudson 2013). We identify a new type of strategy employed by government propagandists, expanding our conceptualization of information control strategies beyond censor-

ship, propaganda, and disinformation. These results suggest that we can no longer focus singularly on the information control strategies of the mass media era, as autocrats are employing a greater repertoire of strategies for exerting their influence in the digital age.

Our theory and results also highlight a need to examine the institutional context of propaganda. In addition to reshaping the strategy of information control, digital technologies are also molding the incentives of the organizations that produce propaganda. These results speak to a large and growing literature on how digital technologies are generating a revolution in quantification that is reconfiguring a large variety of fields and organizations, including political institutions (boyd and Crawford 2012; Cetina 2009; Christin 2018; Corbett-Davies et al. 2017; Harcourt 2008; Mayer-Schönberger and Cukier 2013; Neuman 2016; Reich 2012; Schroeder 2018). As producers of propaganda are subjected to quantification—as their work is measured by clicks, views, likes, and follower counts and as propaganda agencies are increasingly ranked among one another—their incentives are being reoriented toward these immediate metrics and standardized benchmarks.

Finally, this paper shows how computational methods can reveal novel aspects of political communication processes, and how ethnographic and computational methods can be paired. The results of this paper are made possible by computational methods of data collection and analysis (Hilbert et al. 2019). However, the computational methods we use—which include fully automated as well as human-supervised methods—serve to test the observable implications of theory and work in conjunction with qualitative fieldwork. Going forward, we hope that these types of mixed methods can aid in the design of other tests of the attitudinal and behavioral implications of government efforts to control information in the digital age.

## Capturing Clicks

Mass media gave authoritarian regimes the capability to easily reach large, captive audiences. Authoritarian governments dominated broadcast media through state ownership of media outlets (Egorov and Sonin 2011; Qin et al. 2018; Stockmann 2013), co-optation and censorship of private media outlet owners (McMillan and Zoido 2004), and repression and surveillance of journalists (Bourgault 2015; Freedom House 2017; Hem 2014). Political propaganda—which we define as messages aimed at shaping political preferences, opinions, and behaviors—was highly visible to the public.<sup>1</sup>

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<sup>1</sup>There are many different definitions of propaganda. Parry-Giles (2002) describes propaganda during the Cold War as “strategically devised messages that are disseminated to masses of people by an institution for the purpose of generating

What happens to political propaganda in the age of social media and digital technologies? Digital media has led to declining viewership of traditional media, preventing governments from reliably reaching the population through television, newspapers, radio, or other forms of traditional broadcast media (Chadwick 2017; Fletcher and Nielsen 2017; Graber and Dunaway 2017; Webster and Ksiazek 2012). Social media was initially hailed as a “liberation technology” because it allowed anyone to be a broadcaster and was seen as a way for political dissidents and opponents to spread information and coordinate collective action (Diamond 2015; Howard et al. 2011; Steinert-Threlkeld 2017). Research moved away from notions of liberation technology as authoritarian regimes began to impose controls over the internet and social media through censorship and physical repression (Kalathil and Boas 2010; MacKinnon 2012; Morozov 2012; Pan and Siegel 2020).

However, new media technologies are making it more difficult for authoritarian regimes to dominate information dissemination. Different from the expectations of liberation technology, this is not because dissidents are using social media to challenge autocrats but because of the affordances of social media introduce dynamics that propel the generation and diffusion of content (boyd 2011; Schrock 2015; Treem and Leonardi 2013).<sup>2</sup> This means that although authoritarian regimes can censor online content to reshape what types of information are available (King et al. 2013, 2014), they cannot rein in the overall volume of information without completely shutting down the internet or blocking digital technologies (Freyburg and Garbe 2018; Neuman 2016). In this environment of information overload, it is much more difficult for government propaganda to be visible enough to guarantee that the government’s voice will be heard.

Take the example of China. Traditional media consumption has declined as new media penetration has increased.<sup>3</sup> To control online spaces, the Chinese government operates the world’s most

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action benefiting its source” (xxvi). Pratkanis and Turner (1996) describe propaganda as “attempts to move a recipients to a predetermined point of view” (190). Carey (1997) describe corporate propaganda as “communication where the form and content is selected with the single-minded purposes of bringing some target audience to adopt attitudes and beliefs chosen in advance by the sponsors of the communication” (20). Jowett and O’donnell (2018) define propaganda as “the deliberate, systematic attempt to shape perception, manipulate cognition, and direct behavior to achieve a response that further the desired intent of the propagandist” (6). The common theme among these definitions is that propaganda consists of messaged aimed at shaped the perception, cognition, and behavior of receivers according to the desires of the propagandist. We focus on political propaganda, thus narrowing this definition to messages aimed at shaping political opinion, preferences, and behaviors.

<sup>2</sup>The concept of affordance comes from ecological psychology (Gaver 1991; Gibson 1977; McGrenere and Ho 2000), and we use it to refer to the possibilities suggested by the material characteristics of technology that influence human behavior and dynamics. A wide range of researchers have used affordance-based approaches to study social media (boyd 2011; Chadwick 2007, 2017; Ellison et al. 2011; Resnick 2002; Treem and Leonardi 2013; Wellman 2001).

<sup>3</sup>In the mid-1990s, 200 to 250 million people tuned in each night to the state television broadcast (Economist 2016), and in 2019, only 55 to 60 million did so (from <http://www.csm.com.cn/cpfw/> (Accessed April 19, 2019)). The number of Internet users in China increased fifty-fold between 2000 and 2019, reaching 854 million in 2019 (see

sophisticated system of selective online censorship, which appears to curtail interest in topics the government deems to be off limits (Chen and Yang 2019).<sup>4</sup> However, despite this censorship, there is a colossal amount of online content: an average of 45 billion messages were sent on WeChat, China's dominant social media platform, each day in 2018,<sup>5</sup> and mobile phone users in China spend more time on their devices than users in advanced economies such as the United States (Lu et al. 2018). Rather than competing with the voices of dissidents, the Chinese government is vying for visibility with companies, celebrities, and the hundreds of millions of Chinese people who are broadcasting about nonpolitical topics on social media every day.

What options are available for governments to make their voices heard online? To answer this question requires us to consider what makes for highly visible content online, which in turn requires us to consider the technologies driving social media platforms. Putting aside what content messages contain, the visibility of a social media post is a function of the number of times it is re-posted, which relates to the contextual and network characteristics of those who are posting and re-posting. For example, all other factors being equal, a tweet is more likely to be visible to more people if it is initially created or shared by someone who has more followers (Katz and Lazarsfeld 1955; Kiss and Bichler 2008; Nahon et al. 2011; Suh et al. 2010), and if it is shared by a critical mass or shared in certain types of networks in the diffusion process (Bastos et al. 2013; Lee and Sundar 2013; Sadler 2020; Watts and Dodds 2007). To increase online visibility, one strategy governments have used is to artificially manipulate their number of online followers and to boost the popularity of government social media accounts (Marwick and Lewis 2017; Shorey and Howard 2016; Woolley and Howard 2017). Politicians in Australia, Italy, Mexico, South Korea, Turkey, the U.K., and the U.S. have been caught buying and using fake, bot-driven social media followers to artificially boost their follower count (Ratkiewicz et al. 2011; Woolley 2016). A second, related strategy is to artificially boost the re-shares and reach of social media content. Governments in Argentina, Bahrain, China, Iran, Morocco, Russia, and Syria have used bots, fake accounts, click farms, and co-opted influencers (i.e., those who already have large online followings) to artificially increase the numbers of views, clicks, and re-shares of government content (Forelle et al. 2015;

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<https://bit.ly/31Bk0OP> and <https://bit.ly/2uoOKGJ> (Accessed January, 2020).

<sup>4</sup>This system includes website blocking in the form of the Great Firewall, where people located within China cannot access websites such as Google, Facebook, and the New York Times; search filtering where certain results do not appear on search engines such as Baidu and Bing because they are deemed objectionable by the government; keyword blocking where content containing certain words or phrases cannot be publicly posted; and removal of posts that have already appeared online.

<sup>5</sup>See <https://zd.net/2SNaXEk> (Accessed Sept. 26, 2019).

King et al. 2017; Sanovich 2017; Treré 2016; Woolley 2016; Woolley and Howard 2017).

The content of messages also influences the visibility of online messages (Chang et al. 2015; Petrovic et al. 2011; Suh et al. 2010), and this is a third strategy used by governments to increase visibility. Governments spread rumors, false news, and disinformation, which are more likely to spread further, faster, deeper, and more broadly than other types of content because they are novel, surprising, and elicit negative emotions (Kramer et al. 2014; Marwick and Lewis 2017; Vosoughi et al. 2018).

However, all of these strategies rely on artificial manipulation and disinformation, which may not always serve the goals of authoritarian governments. Rumors can take on lives of their own and turn against the autocrat (Shibutani 1966). Disinformation is based on falsehoods, which, if revealed, can generate backlash against the government and erode its credibility (Jowett and O'donnell 2018). Most importantly, these strategies damage autocrats' access to reliable information, which is essential to governance and regime durability (Dimitrov 2014c,b,a; Egorov et al. 2009; Lorentzen 2015; Pan and Chen 2018).<sup>6</sup> To stay in power, autocrats must govern their domestic population—for example, they need to provide a basic level of public goods so people can survive, they need to enforce laws and regulations to ensure a modicum of safety and security, and they may need to resolve disputes and conflicts that arise. To carry out these tasks, autocrats delegate to bureaucrats and lower-level officials and simultaneously surveil these subordinates to ensure that they are in fact carrying out the assigned tasks rather than using resources to undermine the autocrat (Wintrobe 1998). By artificially inflating support, the autocrat will have difficulty gauging the actual level of support. By manipulating information, the autocrat creates incentives for bureaucrats and political competitors to manipulate information. The costs of artificial manipulation may be especially high for authoritarian regimes where there is no strong domestic opposition, where autocrats are not engaged in intense political competition but rather maintaining their monopoly on power. Where such political competition exists, whether in authoritarian or democratic regimes, artificial manipulation can be targeted at the opposition and assessing the level of public support is less relevant than simply gaining a solid foothold on political power.

Governments that want to avoid spreading false information and artificially boosting their online metrics can still try to capture clicks—to disseminate social media posts that are likely to be clicked on and viewed by users—as a means of making the government social media account and

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<sup>6</sup>These downsides are less likely if authoritarian governments are spreading disinformation and manipulating metrics of engagement outside of their borders.

the propaganda messages of that account more visible. Clicks can be increased by the *content* of the social media post and by how the message is *structured*.

In terms of content, a government can disseminate non-propaganda and nonpolitical content—such as entertaining stories, lifestyle advice, and information that is practically useful—to capture clicks. This strategy is frequently employed by state-back news outlets such as RT from Russia and CGTN from China.<sup>7</sup> Research from democracies shows that when given the choice, most people prefer to consume nonpolitical content (Baum 2002; Bene 2017; Botha 2014; Prior 2007; Tewksbury 2003). Research in authoritarian regimes comes to same conclusion—that nonpolitical and non-propaganda content is more likely to capture interest, especially among younger generations (Dou et al. 2006; Zhang and Lin 2014). In addition, non-propaganda content is less likely to generate backlash from those who are politically sophisticated enough to discount propaganda messages (Stockmann 2010; Stockmann and Gallagher 2011).

In terms of structure, how content is structured can also increase clicks. On digital media, users often encounter content through headlines. If the headline is attractive, then the user is more likely to click to view more. One of the most common and easy-to-implement strategies for attracting clicks on digital media is to structure headlines as clickbait. Clickbait works by providing just enough information to generate an curiosity gap, so that the readers' curiosity is piqued but not satisfied by the information provided, and the only way for readers to fill that gap and to try to satisfy their curiosity is to click (Loewenstein 1994; Chakraborty et al. 2016). Clickbait is used extensively online because it has proven to be an effective marketing tool for advertisers, who make money through the advertising-based revenue model of social media by generating user clicks and views (Potthast et al. 2018). Clickbait is used by the companies and individuals that governments are competing against for visibility.

Capturing clicks can help make a government social media account and the propaganda messages of that account more visible through three pathways. First, getting users to click on government headlines can create a habit of clicking on content from that same account simply due to name recognition. Because users scrolling through their social media content recognize the name of a source, they may be more likely to click on content from the same source in the future. Second, having clicked on content from a government social media account, users may become more familiar with the account and more favorably disposed toward it. This is especially true if users not only click on content but “like” the content. This favorable disposition can lead to a reduced sense

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<sup>7</sup>See <https://nyti.ms/3cuH3PO> and <https://nyti.ms/2RKAfk4> (Accessed March 1, 2020).

of distance with the government social media account that propels users toward a higher level of receptivity to all content, including propaganda content, from that account. Note that this second pathway differs from the first, which deals only with name recognition. This second pathway relates to legitimacy, as favorable feelings about the account spillover to propaganda content. The final pathway through which clicks can increase the visibility of propaganda is algorithmic (Gillespie 2014; Schmitt et al. 2018; Zhang et al. 2018). Clicking on posts from a government social media account creates a pattern of usage that may be picked up by the recommendation algorithm of social media platforms and may result in more recommended content from the same source to the user.<sup>8</sup>

Capturing clicks can also be seen as a form of state-led mobilization. State-led mobilization refers to the practice of those in power organizing public activities and actions to habituate the public to conforming to the demands of the state. State-led mobilization is a longstanding tactic of generating compliance in totalitarian and authoritarian regimes (Friedrich and Brzezinski 1965; Inkeles 1954; Linz 1975; Neumann 1957; Schwartz 1970; Starr 1973). State-led mobilization remains in use today in China and Russia (Looney 2020; Perry et al. 2020; Tang 2016). While most research on state-led mobilization has focused on how authoritarian regimes organize protests and other forms of on-the-ground collective action, capturing clicks can serve as a way for the regime to organize public online mobilization. While government-led mobilization can be aimed at mobilizing the public on behalf of specific political ideas, in the case of capturing clicks, it is aimed at mobilization as such, in order to create habits of compliance with the regime and to decrease opportunities for bottom-up mobilization.

While a government can capture clicks by producing nonpolitical content and by using clickbait, we expect clickbait to be used extensively and nonpolitical content less so. This is because of a tension inherent in the use of nonpolitical content to increase the visibility of propaganda. Namely, the more non-propaganda content a government social media account generates, the more likely it is to gain visibility, but the more non-propaganda content a government social media account generates, the less space there is for propaganda. Too much nonpolitical content may diminish the credibility of the government account in the eyes of the public as an authoritative source of information on political or policy topics, and perhaps more importantly, too little propaganda may result in negative evaluations of the producers of propaganda by their superiors. Those who produce propaganda are typically agents in principal-agent relationships with political leaders

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<sup>8</sup>Whether or not the third pathway is in effect depends on the specific technical features of a social media platform.

who want to use propaganda to achieve their political goals. Producers of propaganda have strong incentives to *demonstrate* to their superiors that they are making progress against their assigned goals (Jaros and Pan 2018; Pan 2019a; Pan and Chen 2018; Qin et al. 2017; Shih 2008). Since the assigned goal is to spread propaganda, spreading too little propaganda may result in penalties against producers of propaganda for not “doing their jobs.” Thus, this means that even though non-propaganda content is a powerful force for attracting views, we do not expect nonpolitical content on a government social media account to eclipse political content.

Clickbait does not suffer from this problem because non-propaganda and propaganda content can both be structured as clickbait. We expect to see pervasive use of clickbait to capture clicks. This is because producers of propaganda are evaluated for their effectiveness in spreading propaganda, and these evaluations are increasingly quantified. Digital technologies—ever cheaper data storage, rapid growth in computational power, developments in machine learning—have reinforced and accelerated the impulse toward quantification (boyd and Crawford 2012; Mayer-Schönberger and Cukier 2013). Technological advances in quantification have transformed fields and organizations as diverse as finance (Cetina 2009; MacKenzie 2019), health care (Reich 2012), criminal justice (Brayne 2017; Corbett-Davies et al. 2017; Harcourt 2008; O’Neil 2016), journalism (Christin 2018), and political campaigns (Schroeder 2018). Likewise, quantification is transforming the production of propaganda. The number of views, likes, and shares of social media content created by people working in government agencies to produce propaganda are tracked, compared, analyzed, and then used to assess the performance of those who produce propaganda. To demonstrate that they are gaining visibility, propaganda producers have strong incentives to use an established strategy such as clickbait to capture clicks.

## Social Media Propaganda in China

We look for empirical evidence of the strategy of capturing clicks in China. We focus on China because it is an authoritarian regime with high levels of internet penetration, social media usage, and government control over online spaces (Bamman et al. 2012; Brady 2009; Clayton et al. 2006; Deibert 2002; King et al. 2013, 2014; MacKinnon 2011; Repnikova and Fang 2018; Sullivan 2012; Yang 2009; Zhu et al. 2013; Zittrain and Edelman 2003). China is a place where the preconditions for using such a strategy are in place. In addition, China’s system of online information control is often touted as an example for other countries to follow (Pan 2017), and thus, understanding China

may give us insight into how online propaganda may evolve in other countries.

## Preconditions

China's extensive system for controlling online information means it has the organizational capacity to carry out a strategy of pursuing clicks. The propaganda department (宣传部) of the Chinese Communist Party (CCP) is the organization tasked with producing and disseminating information to shape public opinions and behaviors in favor of the CCP. The CCP Propaganda Department oversees a vast system of control that encompasses media, education, culture, sports, even non-governmental organizations and research (Brady 2009). There are propaganda offices and personnel at all levels of government—from top to bottom: central, provincial, city, county, township—as well as in state bureaucracies, public enterprises, and firms.

In recent years, the Chinese government has made clear that within its domestic social media sphere, propaganda agencies should avoid using disinformation and avoid artificially manipulating metrics of influence. In 2018, China's leader Xi Jinping stressed the importance of “maintaining a clean and positive online space.”<sup>9</sup> The “Opinions on Promoting the Healthy and Orderly Development of New Media in Government Affairs,” issued in the same year, emphasized that government social media accounts must disseminate truthful information in a timely manner and eliminate online rumors. In 2019, the State Council revised the evaluation metrics for local government management of their social media accounts,<sup>10</sup> and included penalties for fabricating views and likes. The Chinese government is well-known for its use of the so-called 50 Cent Army, which fabricates social media posts as if they were the opinions of ordinary people (King et al. 2017; Han 2015). The 2019 central government guideline seems to suggest limitations on covert strategies of manipulating online information, prohibiting the purchase of fake followers and likes.

## Social media

The Chinese government uses proxies—state media and online influencers—to spread its messages, but there also has been a push in recent years for the propaganda department to be able to go directly to the public. Although media outlets are controlled by the state, there is the perception among CCP officials that the commercial incentives of state media outlets interfere with the government messaging. Instead, the CCP has increasingly emphasized the internet and social media as

<sup>9</sup>See [http://www.xinhuanet.com//2018-08/26/c\\_1123331382.htm](http://www.xinhuanet.com//2018-08/26/c_1123331382.htm) (Accessed Sept. 28, 2019).

<sup>10</sup>See “Government Website and Government New Media Inspection Indicators” (政府网站与政务新媒体检查指标) and “Annual Assessment Indicators for Government Website and Government New Media Supervision” (政府网站与政务新媒体监管工作年度考核指标) <https://bit.ly/2nwpKtt> (Accessed Sept. 28, 2019).

key outlets for propaganda; social media has become the preferred channel for direct government-to-public communication and interaction between the government and the public (Jiang and Fu 2018; Pan 2019b; Schläger and Jiang 2014; Wang and Dickson 2019).<sup>11</sup> The CCP's stated goals for social media are to use it as a means of amplifying the voice of the Chinese Communist Party, creating positive propaganda for the party and government, interpreting central policies, and guiding public opinion, especially in response to sudden and unexpected events.<sup>12</sup>

The Chinese government has put particular emphasis on WeChat and Weibo, social media platforms operated by Tencent and Sina, respectively.<sup>13</sup> Weibo is a microblogging platform, where similar to Twitter, all content is publicly viewable. Weibo is the most well-studied social media platform in China, in part because its data is publicly viewable. At the end of 2018, Weibo had 462 million monthly active users.<sup>14</sup> In recent years, however, Weibo has been rapidly overtaken by WeChat, which had 1.08 billion monthly active users as of the end of 2018.<sup>15</sup>

WeChat began as a messaging app like WhatsApp, but now it is often described as a “super-app” (Chen et al. 2018). WeChat users can send free messages with text, image, video, and/or audio to individual contacts and groups of contacts. However, WeChat functionality vastly exceeds interpersonal communication because it integrates internal apps that enable users to conduct a wide array of activities—make mobile payments, hail taxis, order food, book hotels, give to charity, play games—from within the WeChat app environment. This integration of utilities creates new gratifications that may increase the “stickiness” of WeChat and increase time spent on WeChat (Chen et al. 2018; Lu et al. 2018; Sundar and Limperos 2013). Of particular importance to us is how WeChat facilitates content broadcasting through WeChat Official Accounts (微信公众号), which is the WeChat equivalent of Facebook Pages. Certified Wechat users can create their own Official Accounts and generate message feeds that are released publicly and pushed to their

<sup>11</sup>In 2013, the State Council issued “Opinions of the General Office of the State Council on Further Strengthening Government Information Disclosure in Response to Social Concerns and Enhancing Government Credibility” (国务院办公厅关于进一步加强政府信息公开回应社会关切提升政府公信力的意见), which required all local governments to establish social media accounts (see [http://www.gov.cn/zhengce/content/2013-10/18/content\\_1219.htm](http://www.gov.cn/zhengce/content/2013-10/18/content_1219.htm) (Accessed Sept. 28, 2019)). In 2016, Xi Jinping stressed the importance of social media for “two-way interaction” see <http://cpc.people.com.cn/n1/2016/1010/c64094-28763907.html> (Accessed Jan, 2020).

<sup>12</sup>See 2018 State Council “Opinions on Promoting the Healthy and Orderly Development of New Media in Government Affairs” (关于推进政务新媒体健康有序发展的意见).

<sup>13</sup>When policy documents refer to social media, they are referring to WeChat, Weibo, and government-specific applications. This definition of social media is described “Opinions On Comprehensively Promoting the Work of Open Government Affairs” (关于全面推进政务公开工作的意见) and “Key Points of Government Affairs Work in 2018” (2018年政务公开工作要点).

<sup>14</sup>See <https://www.chinainternetwatch.com/28566/weibo-fiscal-2018/> (Accessed Sept. 28, 2019).

<sup>15</sup>See <https://support.weixin.qq.com/cgi-bin/mmsupport-bin/getopendays> (Accessed Sept. 28, 2019) and <http://www.cioall.com/uploads/f2019080910242398145.pdf> (Accessed Sept. 28, 2019).

subscribers' feeds. As of 2018, more than 20 million Official Accounts have been established on WeChat, with categories ranging from politics to entertainment.<sup>16</sup> As of June 2019, there were roughly 140,000 government WeChat Official Accounts, and on average, each WeChat user in China followed 2.3 government official accounts.<sup>17</sup>

Unlike platforms such as Facebook and Twitter that are organized by a "feed," the WeChat app homepage defaults to a list of "chats"—which can include one-on-one conversations, group chats, and accounts followed (subscriptions). There are three main ways a WeChat user can encounter content from a Official Account (illustrated in Figure 1).<sup>18</sup> First, if the person subscribes to the

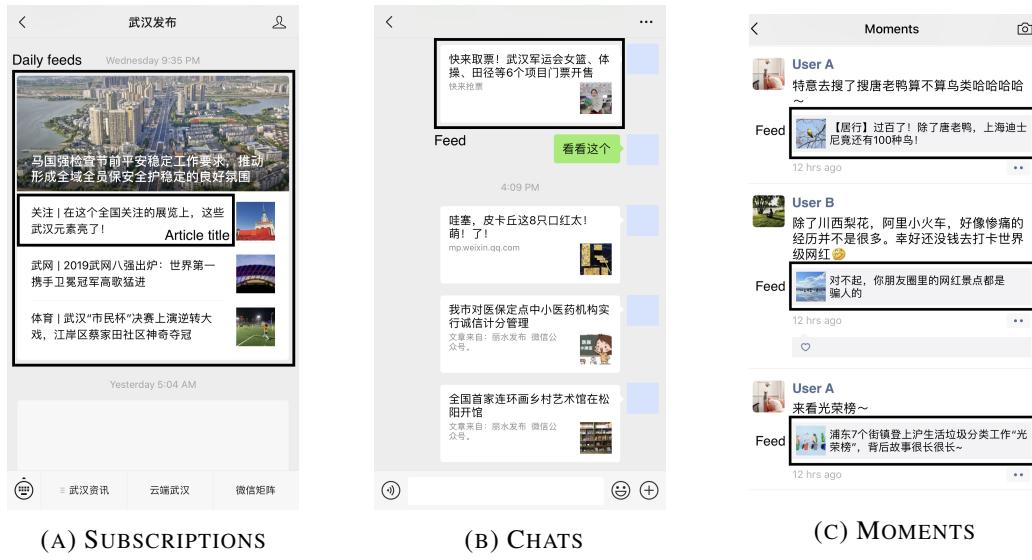


FIGURE 1. WECHAT FEATURES THAT ENABLE ACCESS TO GOVERNMENT CONTENT

Official Account, then the posts of the account can be found in the user's Subscriptions section (panel A). Second, a contact may share a link to content from an account in an individual or group chat (panel B). Third, contacts may share a link to government content to their Moments feed (panel C).<sup>19</sup> Regardless of how a user encounters information posted by a government WeChat Official Account, the only information the user sees before clicking is a title, an accompanying image, and sometimes a one-line description about the article; users do not see the full content of articles. The restricted amount of information communicated to users prior to clicking leads those who produce social media propaganda to focus a great deal of effort on crafting attractive headlines.

<sup>16</sup> See <https://bit.ly/2m0S46N> (Accessed Sept. 28, 2019).

<sup>17</sup> See <https://bit.ly/2lWMHp0> (Accessed Sept. 28, 2019) and <https://bit.ly/2nydGI2> (Accessed Sept. 28, 2019).

<sup>18</sup> It is also possible to encounter government content through the Top Stories feature WeChat launched in December 2018 and March 2019; however, because of the relative newness of this feature, we do not illustrate it here.

<sup>19</sup> Moments, or Friend's Circle on WeChat, allows users to post and browse the updates from their friends (Chen et al. 2018).

## Data and Methods

To determine whether the Chinese government employs the strategy of capturing clicks, and whether such a strategy is implemented in the ways we theorize, we combine ethnographic and computational methods.

We conducted ethnographic fieldwork from July to August 2018 and in January 2019. After several months of developing relationships and getting organizational buy-in, we co-located with teams responsible for managing government Weibo and WeChat accounts in four localities: G city, P county, H county, and X county.<sup>20</sup> The teams we observed consisted of a team leader and three to six team members. The teams produced original content and sourced content from upper levels, traditional and social media outlets, and other cities. We were co-located in their physical offices throughout the day, observing their day-to-day work and participating in social interactions (e.g., having lunch together at the cafeteria). We sat in on editorial meetings and looked over their shoulders as they worked. We were also “virtually co-located” as we joined their online work discussion groups and were given access to their social media account dashboard and metrics, on which we could see private messages sent to the account and administrative statistics such as the gender distribution of their followers. We observed first-hand how they selected content to post on their social media accounts, as well as how they wrote articles, crafted headlines, laid-out designs, and administered their account pages. We also conducted 12 long-form interviews with team leaders and team members with varying levels of experience.<sup>21</sup>

For our computational analysis, we created a novel dataset of titles from Chinese government WeChat Official Accounts. We focus on WeChat because it is under-studied despite its increasing importance. One social media editor in X county told us: “Now our superiors put more emphasis on WeChat because there are more users on WeChat. Actually, in comparison, Weibo is not relevant anymore.” We identified 213 city-level government propaganda accounts.<sup>22</sup> The first

<sup>20</sup>Teams include those that were part of the local propaganda department, the local government information office, and local media outlets. The physical offices of these teams included those both within and outside of government buildings.

<sup>21</sup>While it is possible that our presence could alter the day-to-day work of the teams we observed, we think this is unlikely because the teams had tasks they had to complete and would not have allowed us to be present had it interfered with their work.

<sup>22</sup>All government Official Accounts contain the term *fabu* (发布), which literally means “to release” or “to promulgate,” in their account name. There are 333 city-level administrations in China; 27% of cities do not have a city-government Official Account and 9% of cities have accounts but are not certified as a government WeChat Official Account, or have not posted since April 2018 (or ever). The cities that do not have city-government Official Accounts typically have lower-level county-government WeChat accounts or local department-led accounts. By examining the account information of city accounts that could be collected, we know that 120 accounts (56%) are affiliated with the city propaganda department, 43 accounts (20%) are affiliated with the information office of the local government (政府新闻办公室), and the remaining accounts are associated with other government administrative offices or local media

government Official Accounts appeared in 2013, and the number of accounts increased rapidly from 33 to 169 between 2013 and 2015, and then increased more gradually to 213 in 2019.<sup>23</sup>

We collected the titles of all posts from the 213 city-government propaganda accounts made between May 25, 2018 and May 25, 2019. Posts made by Official Accounts are publicly viewable upon login, but WeChat has made automated scraping of Official Accounts unfeasible unless one has access to a large number of WeChat login credentials. We overcame this challenge by developing automated scraping algorithms to collect the titles of posts from Sogou Weixin, a platform developed by Sogou that is the default search engine for WeChat.<sup>24</sup> Sogou Weixin shows the titles of WeChat posts, which is the content we are interested in since it is what users see before deciding to click. By using Sogou Weixin, we avoid the ethical risks of either buying WeChat login credentials or recruiting confederates willing to lend us their personal account credentials.

We ran our scraping algorithm repeatedly to ensure we collected all posts in the time period of interest, and we removed duplicate titles. In total, we gathered the titles of 197,303 unique government posts, along with the creation date and time of each post.<sup>25</sup> Figure 2 shows the number of city government posts by day. Figure 2 shows clear weekday-weekend cycles with a much higher number of weekday posts, as well as gaps during national Chinese holidays such as National Memorial Day (Dec. 13, 2018), Spring Festival (Feb. 4-10, 2019), Tomb-Sweeping Day (Apr. 5-7, 2019) and Labor Day (May 1-3, 2019). We also see a jump in the volume of posts in late December of 2018 following the promulgation of “Opinions on Promoting the Healthy and Orderly Development of New Media in Government Affairs.”

To analyze the content and structure of these city-government propaganda titles, we employed topic modeling, natural language processing, and large-scale human coding. The details of the computational methods are described in the relevant results sections.

## Results

If the Chinese government is using a strategy capturing clicks to increase the visibility of its propaganda, we should observe that: 1) government propaganda accounts will disseminate non-

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outlets.

<sup>23</sup> See Appendix for the plot of account creation.

<sup>24</sup> See <https://weixin.sogou.com/>. In scraping process, we followed the terms of services of weixin.sogou.com and adhered to requirements outlined in their robots.txt file. See Appendix for more details on this data collection process.

<sup>25</sup> A constraint of our data collection method is that we are not able to collect, and hence analyze, the thumbnail image associated with the title, which is also shown to users before their click. The thumbnail image urls shown on Sogou Weixin redirects to links hosted on WeChat. Accessing these urls to download the image triggers WeChat’s anti-spider mechanisms. As such, our conclusions are limited to the effects of text on user behavior.

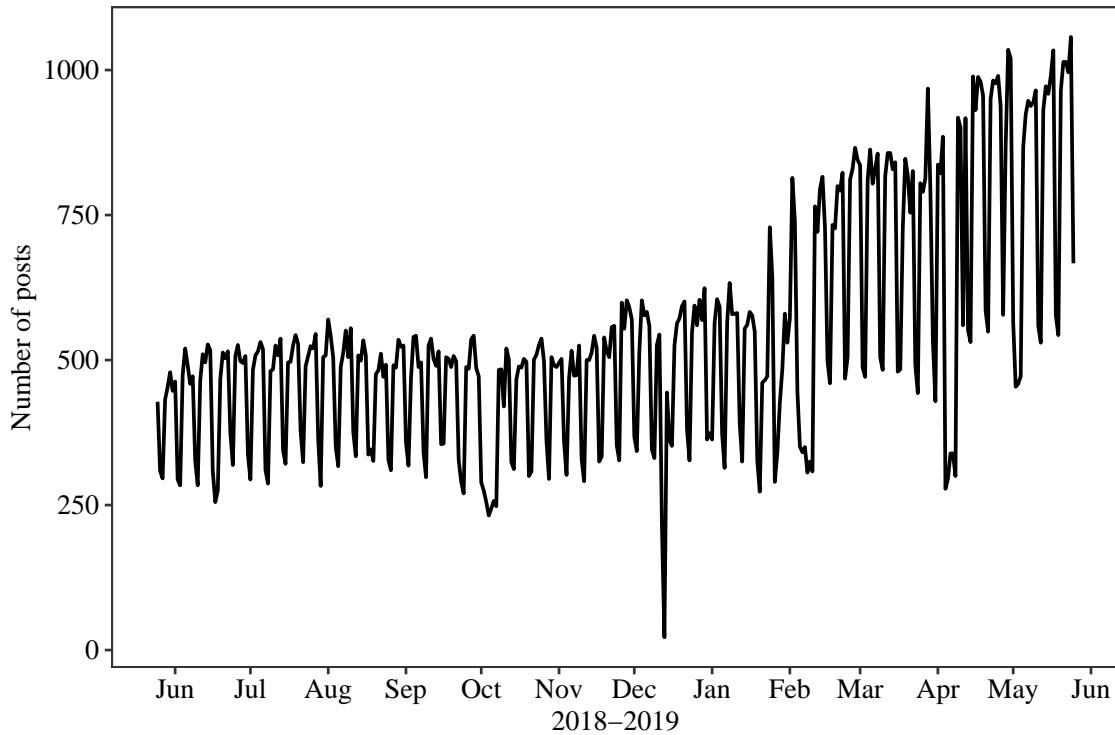


FIGURE 2. TOTAL NUMBER OF POSTS COLLECTED FROM CITY GOVERNMENT WECHAT OFFICIAL ACCOUNTS BY DAY

propaganda content, but not so much that it overshadows political and propaganda content, and 2) government propaganda accounts will use clickbait extensively. We expect such a strategy to work by increasing clicks and favorability toward the government social media account and its contents. The ethnographic fieldwork allows us to gain insight into the incentives and pressures facing those producing propaganda, and the combination of ethnography and computational analyses allows to assess the observable implications of the strategy.

### **Incentives and Quantification**

Producers of local government propaganda in China face strong incentives and pressures to capture clicks and improve the visibility of their accounts. These pressures are intensified by quantification. Team members felt that they must get clicks because clicks are publicly viewable and because social media companies often provide analytics on readership to their superiors. In X county, the chief editor of the social media account in the local propaganda department said that “especially in recent years, our superiors emphasize WeChat a great deal and ask us to gain more fans for our account and to be more influential.” In H county, a team member affiliated with the local government administrative office said that social media accounts “at the district and county level will be

quantitatively assessed each month. For example, X sent how many posts, got how many reposts, comments, likes, and other interactions. These are all measured.”

The term “100,000+ views” (十万加) came up again and again as the main metric signifying achievement. In P county, the leader of the government social media editorial team pointed to a wall of titles in the office and told us: “The titles that hang on the wall are all WeChat articles that achieved 100,000+ views. Thirteen titles hit 100,000+ views in 2018.”

Governments are often ranked against one another on social media performance, and rankings are made public (we use one such ranking in our subsequent analysis). One propaganda official in X county said:

Since the city-level government wants their counties to provide good information, they will assess us. Our superiors care about that a lot. They will get the ranking and their requirement is that we rank among top five or top three accounts.

Easily accessible data combined with analytics and comparisons put intense pressure on producers of propaganda to capture clicks.

### **Non-Propaganda Content vs. Propaganda Content**

The propaganda teams we observed did disseminate non-political content and recognized that non-political content can lead to more clicks. An editor in charge of the government WeChat Official Account in G city said that they disseminate content containing practical information with utility for ordinary people. Propaganda team members also understood that disseminating propaganda and talking about politics may not attract readers. A staff member in X county pointed out that “all government social media accounts face a contradiction, which is that people don’t want to see political information—leaders attending some meeting or going to do whatever—there’s no audience for that.” However, propagandists also acknowledged that their most important duty is to disseminate propaganda. The chief editor of the social media account in X county said:

Every day we have to publish articles about the work of our government and the party committee, including what the government has done for the public, important activities and meetings, even announcements of major policy documents. Our WeChat account will always be more of a political outlet than a media outlet.

We use a topic model to examine the proportion of propaganda and non-propaganda content in our dataset. In alignment with our theory and ethnographic results, we find that while gov-

ernment WeChat Official Accounts produce non-propaganda and non-political content, this type of content does not overshadow political and propaganda messages. To conduct our analysis, we first preprocess the WeChat titles by segmenting the Chinese text and discarding stopwords and punctuation.<sup>26</sup> We implement a Structural Topic Model (Lucas et al. 2015; Roberts et al. 2013, 2014), and we determine the number of topics by examining the held-out likelihood, residual, and semantic coherence of models with 10 to 80 topics. The model with 30 topics yielded the best results across these metrics. We then hand-labeled each topic by reading the 10 top-ranked titles associated with each topic and examining the top keywords in the topic. We were able to label 29 of the topics.

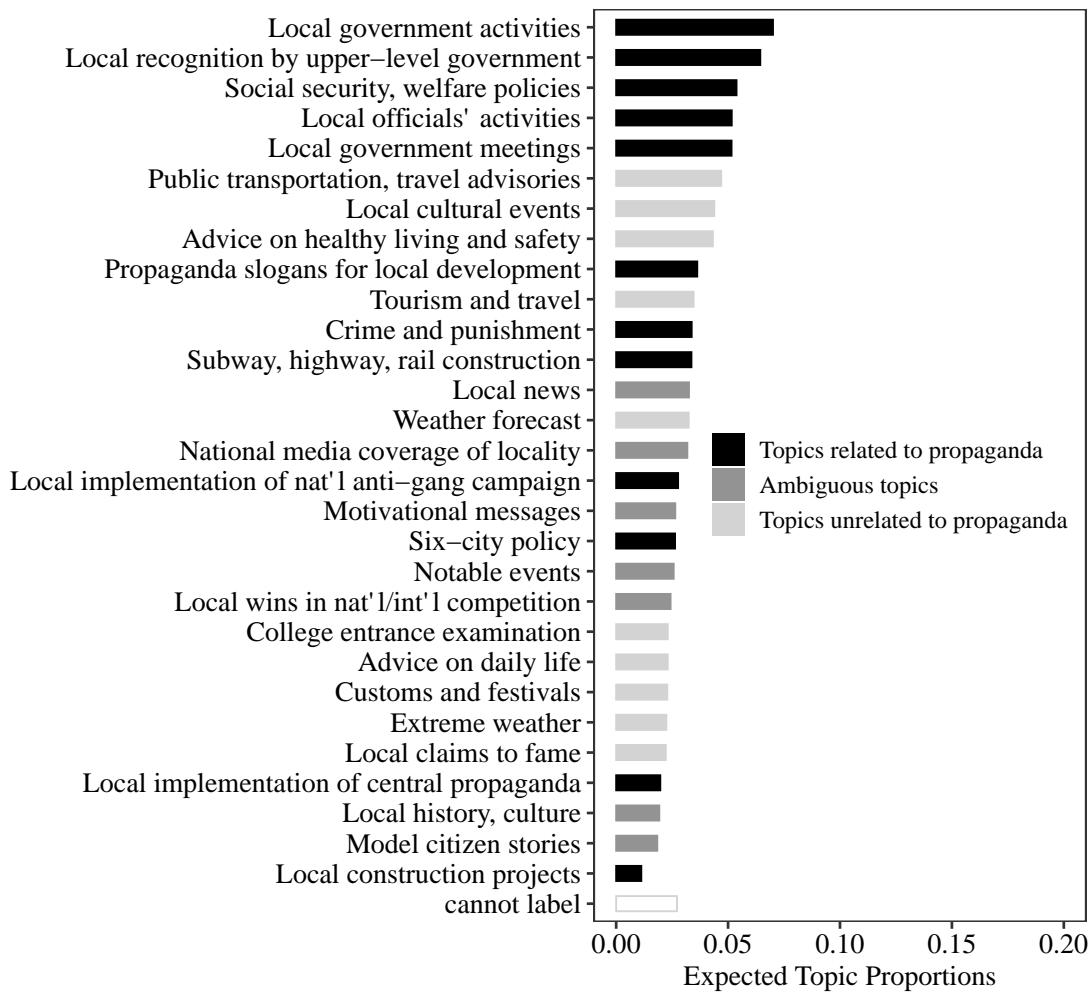
After labeling the topics, we created a meta-label to denote whether the topic is propaganda, not propaganda, or ambiguous. For this meta-label, we define propaganda as messages aimed at shaping the political preferences, opinions, and behaviors of the public. This includes ideological slogans, centrally-led campaigns, coverage of political leaders and political events, discussion of government policies, and all displays of government achievements and accomplishments. We define as non-propaganda content that is completely unrelated to politics, ideology, policy, and governance. Examples include weather forecasts, traffic information, and advice on personal safety. If the topic generated by the topic model might relate to politics but might also be non-political, we apply the ambiguous meta-label. Examples of ambiguous topics include local news, stories of model citizens, local history, and motivational messages.<sup>27</sup> Two readers read the top keywords associated with each topic and the top-ranked titles to generate the meta-label.

Figure 3 shows the topic proportions, where we shade the bars to denote the meta-label: propaganda (black), unrelated to propaganda (light gray), and ambiguous (dark gray). The one topic that cannot be labelled is also included in the plot in white. As expected, a number of topics are completely unrelated to politics (e.g., “Public transportation, travel advisories,” “Local cultural events,” and “Advice on healthy living and safety”). For example, one title associated with the topic “Advice on daily life” is “Do you really know how to eat a crab? Don’t eat these four organs!” (你真的会吃螃蟹?这四个部位万万不能吃!). Another example, associated with the “Local claims to fame” topics is “These 25 food specialties from Dandong are taking the country

<sup>26</sup>We used both the JiebaR package (Qin and Wu 2019) and the Chinese Word Segmente (Tseng et al. 2005). JiebaR produced better segmentation based on our qualitative evaluation of a sample of segmented titles. We do not remove infrequent words because trimming leads to the removal of names of government organizations, officials, and locations, which are important to the topics.

<sup>27</sup>Content related to motivational message combines messages unrelated to politics with messages reflective of CCP’s emphasis on “positive energy” (正能量).

FIGURE 3. TOPIC PROPORTIONS



by storm! See how many of them you've eaten..." (丹东25种美食特产“风靡”全国!看看你吃过几个...).

However, the topic modeling results also show that government WeChat Official Accounts are disseminating a substantial amount of propaganda content. Overall, 48% of topics relate to propaganda, 31% are unrelated to propaganda, and 18% are ambiguous. The topics with the highest proportions in Figure 3 are all related to propaganda (e.g., “Local government activities,” “Local recognition by upper-level government,” “Social security, welfare politics,” and “Local government meetings”). Examples of propaganda content include: “Mayor Qian Sanxiong investigated rural revitalization, where did he visit?” (钱三雄市长调研乡村振兴,都去了哪些地方?) and “Within a week, the mayor personally supervised this work two times.”(一周内,市长两次现场督查这项工作), which are both associated with the “Local officials’ activities” topic. Other examples of propaganda, associated with the “Local government activities” topic include: “Meet-

ing of government office directors held in Baoding city” (保定市召开政府系统办公室主任会议); “Latest city government cadre promotions and demotions” (市政府最新干部任免). Overall, while non-propaganda content is produced by government social accounts, it does not overshadow propaganda content.

## Preponderance of Clickbait

The propaganda producers we observed were especially attuned to crafting appealing headlines. They felt that headlines were a major factor in determining whether or not a user would click on a government post. They described clickbait as a useful strategy for structuring headlines to generate clicks. One official from the local propaganda department of X county said:

Our superiors are attentive to clickbait; how to create a good title that attracts more of the public to look at our content. We are thinking about this problem every day....

Titles need to be more vivid, authentic, relevant to people’s lives.

Many members of propaganda teams we met had some training in social media management and public relations. We also learned that media specialists from social media companies such as Tencent are invited to propaganda departments to deliver trainings on online digital marketing and advertising. In other words, propagandists are consciously employing commercial digital marketing strategies such as clickbait to increase the attractiveness of their headlines.

To measure the prevalence of clickbait quantitatively, we use natural language processing (e.g., parts-of-speech tagging, n-gram analysis) and large-scale hand-coding on our dataset of WeChat titles. We do not subjectively define what constitutes clickbait but instead draw on conceptualizations and operationalizations of clickbait from the existing literature in marketing, computer science, and linguistics (Biyani et al. 2016; Blom and Hansen 2015; Chakraborty et al. 2016; Halliday and Hasan 1976; Vijgen et al. 2014; Wei and Wan 2017). Our review of the empirical literature on clickbait led us to nine common types of clickbait, which are used to generate an curiosity gap: 1) listicles, 2) general nouns, 3) pronouns, 4) ellipsis marks, 5) hyperbolic words, 6) slang, 7) fixed phrase patterns, 8) exclamation marks, and 9) question marks. The types of clickbait we focus on include those identified by textual features (e.g., exclamation marks) and those identified by the meanings of words (e.g., listicles, slang, general nouns). As a result, fully automated methods did not always generate high precision and recall. We used fully automated methods of detection where possible, but in addition, we hand-coded 58,711 titles produced by

a stratified sampling procedure that randomly sampled 30% of the titles from each government WeChat Official Account.<sup>28</sup> Five native Chinese speakers were trained to conduct all of the human coding, and achieved intercoder reliability above 80% on all tasks (for details on intercoder agreement, see Appendix).

Listicles are titles whose thematic structure is organized around a cardinal number to tease users and attract interest. We define listicles as titles containing cardinal numbers where the number implies the existence of a list and where the number indicates a quantity that is not explained in the title itself. For example, a title such as “Four major changes to transportation will occur during Spring Festival in Jinhua county” (金华春运今年将有4大变化) would be considered a listicle, while a title such as “The city’s population rose to 5 million in 2019” would not. Since the determination of whether a title constitutes a listicle is dependent on the meaning of the cardinal numbers that appear in titles, we employed human coders to identify titles with listicles.

The use of general nouns, pronouns, and ellipsis marks (...) all serve to provide forward references that hint at interesting content without giving the actual content away. We identify ellipsis marks automatically. For general nouns and pronouns, we draw from previous studies to include four types of general nouns: human nouns (e.g., person, 人), place nouns (e.g., place, 地方), fact nouns (e.g., information, 信息) and general nouns related to the government (e.g., task, 工作), and three types of pronouns: demonstrative pronouns (e.g., this, 这), personal pronouns (e.g., you, 你) and wh-pronouns<sup>29</sup> (e.g., who, 谁). To identify general nouns, human coders create a dictionary by reading all titles in our sample to find nouns that fulfill our definition. We identify all titles containing words in this dictionary, and have human coders evaluate this subset of titles to remove false positives.<sup>30</sup> To identify relevant pronouns, we apply an automated parts-of-speech tagger on all segmented titles without removing stopwords.<sup>31</sup>

Hyperbolic words include expressions such as “soul-stirring” (惊心动魄) and “unprecedented” (史无前例). Internet and oral slang include sayings such as “cold cold” (凉凉), which means a bad luck streak, and “confirmed glance” (确认过眼神), a lyric from a popular Chinese song that means learning things based on subtle cues. To identify hyperbolic words and slang, human coders create an open-ended dictionary for each variable by reading all sampled titles. Then

<sup>28</sup>We excluded sampled titles that had no identifiable message.

<sup>29</sup>Wh-pronouns in Chinese are who, whose, whom, which, what, where, and how.

<sup>30</sup>We are worried about false positives because some of the general nouns in the dictionary could be used in other grammatical contexts. For example, “work” is a general noun related to the government (e.g., “government work was emphasized”) but “work” could also be used as the verb (e.g., “He is going to work on the project”).

<sup>31</sup>We use the Stanford POS Tagger; see Toutanova et al. (2003); Tseng et al. (2005).

we apply the dictionary to the sample of 58,711 titles to find all titles containing words from the dictionary. Finally, human coders reviewed all identified titles to remove the false positives.<sup>32</sup>

Fixed phrase patterns—such as the infamous “you won’t believe”—is another common form of clickbait identified in prior research. Since there are no authoritative Chinese-language dictionaries of such phrases, we combined phrases used by Wei and Wan (2017) and fixed phrase lists from social media marketing websites<sup>33</sup> with n-gram analysis of our WeChat titles to identify fixed phrase patterns and create our own dictionary of such phrases (see Appendix for details). The resulting fixed phrase pattern dictionary contains 54 phrases—for example, “must know” (一定要知道) and “do you know” (你认识吗)—that do not overlap with slang or hyperbolic words.

Finally, prior studies of clickbait have identified the use of exclamation marks to show emphasis and question marks to indicate interrogative clauses or phrases. Exclamation marks draw interest. For example, this title appeared on the Sanya city WeChat Official Account: “It’s amazing! Sanya was featured on CCTV! This time the camera’s right on this whale shark!” (厉害了!三亚又上央视啦!这一次,镜头对准了这只鲸鲨). Question marks generate information gaps—for example, “Who says Yunfu has no new year flare?”(谁说云浮没年味?). We identify these punctuation marks automatically.

In the random sample, 70% of government WeChat titles contain clickbait.<sup>34</sup> Figure 4 shows the relative prominence of each type of clickbait strategy. The most frequent type of clickbait is the exclamation mark, which appears in 53% of titles (in 16% of titles there is more than one exclamation mark). The second most common type of clickbait are pronouns, appearing in 30% of titles. Fixed phrase patterns appear in 15% of titles; slang appears in 11% of titles; ellipsis marks in 10%; question marks in 10%; listicles and hyperbolic words in 6% each; and general nouns in 5% of titles. Many titles contain more than one clickbait strategy.

Because government WeChat Official Accounts are competing against non-government and non-state Official Accounts for views, we expect government accounts to use clickbait at similar rates as these other accounts. To see whether this is the case, we collected the titles of three highly popular commercial and celebrity accounts made between Feb. 25, 2019 and May 25, 2019.<sup>35</sup> Fig-

<sup>32</sup>Examples of a false positive hyperbolic word would be a word that is part of a book title; an example of a false positive for slang would be the slang term being used in a literal sense.

<sup>33</sup>See <https://www.digitaling.com/articles/32729.html> (Accessed Sept. 10, 2019).

<sup>34</sup>If we exclude clickbait titles which are classified as such because they contain one punctuation mark, 56% of government WeChat titles contain clickbait. If we exclude all clickbait titles classified as such because they contain any punctuation mark, 49% of government WeChat titles contain clickbait.

<sup>35</sup>We selected the three most popular accounts with different types of ownership and affiliation (influencer, company, and commercial media) based on WeChat Official Account rankings. One account run by a well-known investment

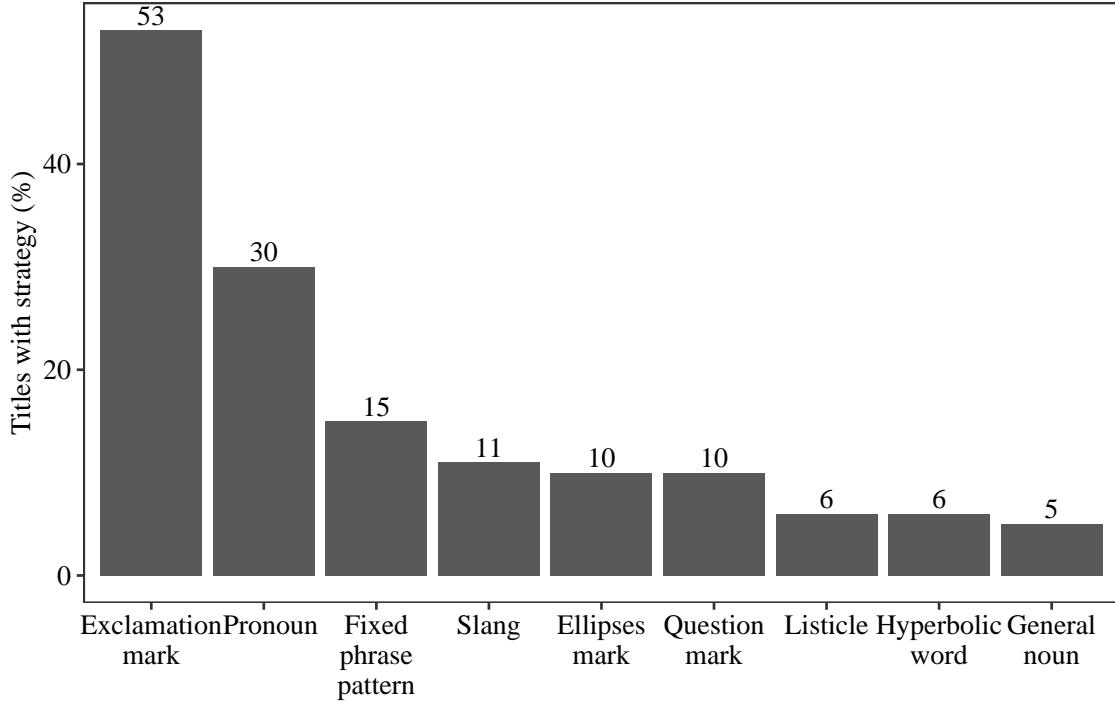


FIGURE 4. PREVALENCE OF DIFFERENT CLICKBAIT STRATEGIES

ure 5 compares the percentage of titles with clickbait for government and non-government WeChat Official Accounts, and shows, as expected, that government accounts use clickbait at comparable rates. Panel A of Figure 5 shows all clickbait strategies. In our three month comparison period,

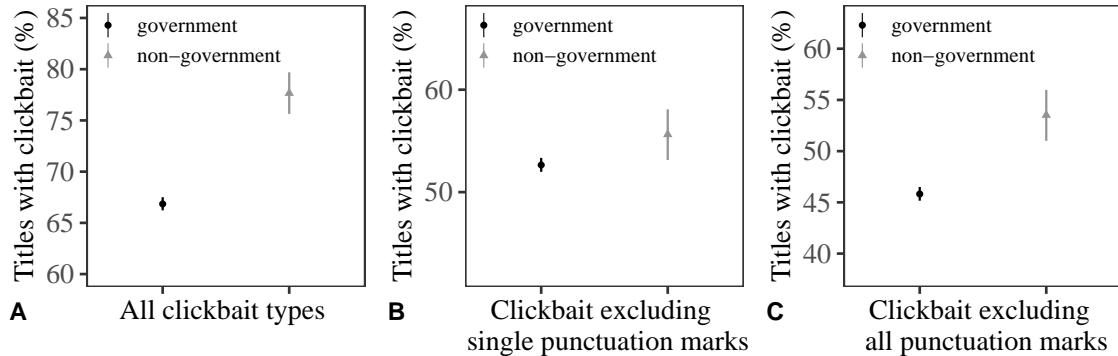


FIGURE 5. COMPARISON OF CLICKBAIT USAGE BETWEEN GOVERNMENT AND NON-GOVERNMENT WECHAT OFFICIAL ACCOUNTS

78% of non-government WeChat titles contained clickbait, while 67% of government titles contained clickbait. Panel B of Figure 5 shows all clickbait strategies except titles that include only one punctuation mark. In other words, we exclude titles where the only clickbait strategy is a

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expert, Hao Zhan. Another is a healthcare and wellness account managed by Dingxiangyuan Company, and the third account is that of the magazine *Lifeweek*. See Appendix for more details on account selection and characteristics.

single punctuation mark associated with clickbait (exclamation, question, and elipses marks). As a result of this exclusion, slightly less than 55% of government WeChat titles contain clickbait and slightly more than 55% of non-government WeChat titles contain clickbait. Panel C of Figure 5 shows clickbait titles excluding any punctuation marks. Here, 46% and 54% of titles in government and non-government accounts, respectively, contain clickbait.

Instead of clickbait, propagandists can also use emotional appeals, including words that heighten psychological arousal or describe desired future outcomes in their headlines to try to attract views (Aral and Walker 2014; Berger and Milkman 2012). We compare the prevalence of clickbait against this alternative strategy. Human coders coded titles in the random sample of 58,711 titles for five positive and negative emotions. These include high-arousal positive valence emotions (joy and pride), high-arousal negative valence emotions (anger and fear) (Leonidou and Leonidou 2009; Scheller 2019), and low-arousal positive valence content we saw frequently in our sample, which we call “warmth.”<sup>36</sup> Human coders also coded titles in the sample that describe future states and desired future achievements with inspirational language (“vision” appeals), which are common in traditional propaganda (Holladay and Coombs 1994; Thelen 2018).

Only 17% of titles in the random sample employ emotional or vision-based appeals, which is much lower than the usage of clickbait (even if we exclude all punctuation marks from our definition of clickbait). Figure 6 shows the percentage of titles with clickbait and with emotional appeals by day from May 25, 2018 to May 25, 2019. The share of clickbait remained high throughout the time period, while the share of appeals was consistently lower, despite fluctuations. Bursts of emotional appeals typically appear around nationalistic and political events such as meetings of the National People’s Congress and the Chinese People’s Political Consultative Congress (Mar. 2019), as well as holidays such as Chinese New Year (Jan.-Feb. 2019). The lower prevalence of appeals relative to clickbait is not particularly surprising because clickbait is easier to implement and tailored to maximize clicks on social media.

### **Clickbait, Clicks, and Visibility**

The main focus on this paper is to assess whether the Chinese government employs a strategy of capturing clicks, and whether clickbait is the preferred method of capturing clicks. The results shown in the previous sections validate our expectations. To go one step further, we examine

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<sup>36</sup>The presence of this low-arousal content may relate to cultural differences in emotion (Lim 2016). An example is a title describing a disabled man who made a living playing the piano with his feet: “Ren Jianwei, the boy who lost his arms from Jun county, gains a fortunate life with his feet.” (浚县小伙儿任建伟失去双臂,却用双脚奏出幸福人生).

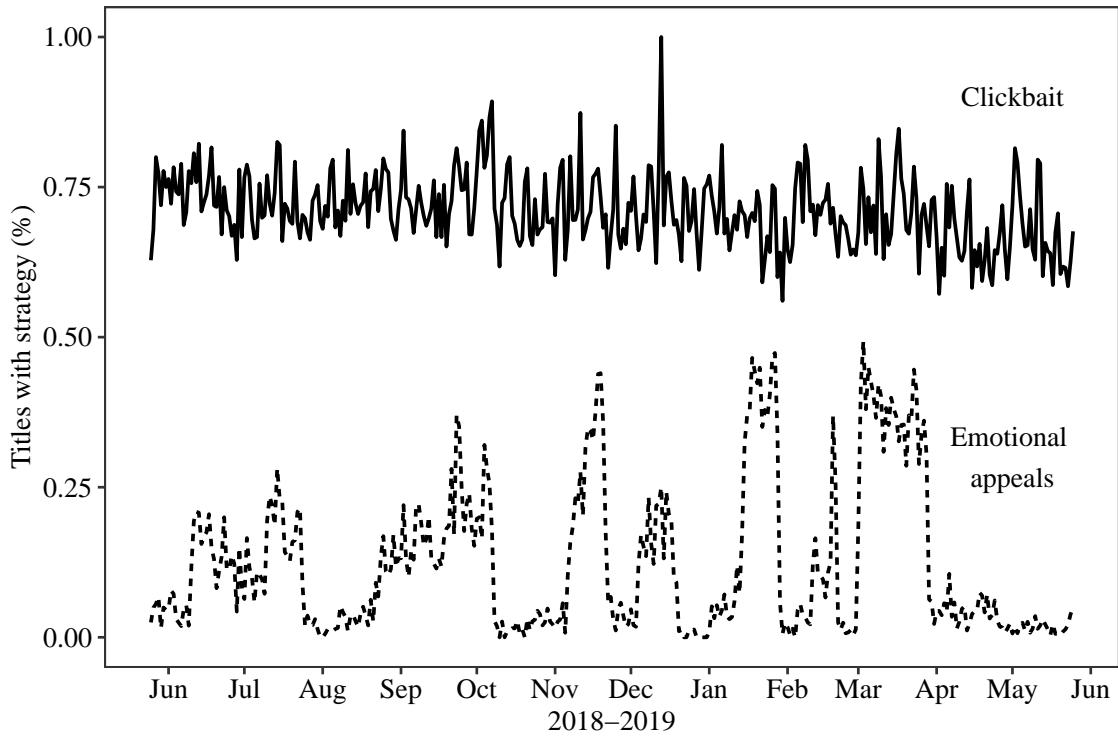


FIGURE 6. CLICKBAIT AND EMOTIONAL APPEALS BY DAY

whether there is any support for two of the three theorized pathways of how capturing clicks with clickbait can increase the visibility of propaganda.<sup>37</sup> The first pathway through which clickbait can increase the visibility of propaganda is name recognition. For clickbait to increase name recognition, we need to establish that titles containing clickbait are more likely to be viewed than titles without clickbait. This is a necessary but not sufficient condition for the first pathway because if clickbait does not generate clicks then there is no way that name recognition would increase. The second pathway through which clickbait can increase the visibility of propaganda is to make users see government content and accounts more favorably. For clickbait to make users view government social media accounts more favorably, we need to establish that titles containing clickbait are more likely to be “liked” than those without, and that the use of clickbait is positively associated with account characteristics such as the number of followers, average views across posts, and average likes.

In early September 2019, we manually collected the numbers of “Reads” (views) and “Wows” (likes) associated with the 58,711 titles in our random sample.<sup>38</sup> We fit a negative binomial re-

<sup>37</sup>We cannot assess the third algorithmic pathway with our current observational data because assessing this pathway would require gathering usage and content date from WeChat users.

<sup>38</sup>This time lag ensures that the views and likes data of all of the titles are comparable. Most posts gain their views and likes within a week or two of posting. Our collection of views and likes data takes place 4 months after the last post in our dataset. We found views data for 58,411 observations of our sampled data, and we found likes data for 16,384

gression to examine the relationship between clickbait and views.<sup>39</sup> To account for differing city resources and capabilities in managing social media, we include city fixed-effects in all model specifications. Table 1 presents three model specifications. Column (1) includes only the clickbait strategies. Column (2) adds in the emotional and vision appeals to control for other strategies that

TABLE 1. PREDICTORS OF VIEWS

	(1)	(2)	(3)
Hyperbolic words	0.244*** (0.018)	0.243*** (0.018)	0.259*** (0.018)
Exclamation marks	0.229*** (0.010)	0.238*** (0.010)	0.245*** (0.010)
Ellipsis marks	0.039*** (0.014)	0.041*** (0.014)	0.046*** (0.014)
Fixed phrases patterns	0.012 (0.012)	0.012 (0.012)	0.016 (0.012)
Listicles	0.008 (0.018)	0.010 (0.018)	0.016 (0.018)
Question marks	-0.006 (0.015)	-0.009 (0.015)	-0.005 (0.015)
Pronouns	-0.074*** (0.010)	-0.073*** (0.010)	-0.061*** (0.010)
Slang	-0.080*** (0.013)	-0.079*** (0.014)	-0.063*** (0.014)
General nouns	-0.083*** (0.020)	-0.082*** (0.020)	-0.086*** (0.020)
Constant	6.539*** (0.063)	6.538*** (0.063)	6.519*** (0.063)
Appeals	NO	YES	YES
Topic Controls	NO	NO	YES
City FE	YES	YES	YES
Observations	58,411	58,411	58,411

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

might be used to increase the allure of titles. Column (3) includes additional controls for the topic of the title (see Appendix for full regression results).

Several clickbait strategies are predictive of more views. In particular, as shown in Table 1, hyperbolic words and exclamation marks have large and statistically significant effects on the

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observations. We have much fewer observations for likes because between December 2018 and March 2019, WeChat replaced the previous like feature “Praise” (赞) with the new like feature “Wow” (在看) through two software updates. When the “Wow” feature was implemented, previous “Praise” data was no longer displayed on WeChat. As a result of change in WeChat’s technical features, our data on likes consists of “Wows” on titles posted between March 14, 2019 and May 25, 2019.

<sup>39</sup>We use a negative binomial regression because we have count data and views are overdispersed (see Appendix). The AIC score of the negative binomial model is 231 times smaller than that of the Poisson model.

number of views. The mean number of views for a government social media post is 4,097, and the median is 1,319. Based on simulating quantities of interest, we find that on average, one hyperbolic word is associated with an increase of 338 views (8%), and one exclamation mark is associated with an increase of 283 views (7%). Ellipsis marks also significantly increase views, but the effect is smaller. However, several clickbait strategies—general nouns, pronouns, slang—decrease the number of views. The effect size is small, but robust across model specifications. These correlations between clickbait and clicks suggest that the strategy may be succeeding in capturing clicks. Although this does not mean that clicks are increasing name recognition, it is a prerequisite for this pathway.

We examine the relationship between clickbait and likes by fitting a zero-inflated negative binomial regression.<sup>40</sup> Table 2 presents three model specifications: Column (1) only includes clickbait, column (2) adds controls for emotional and vision appeals, and column (3) adds additional controls for topic (see Appendix for full regression results). Table 2 shows that a number of clickbait strategies are negatively associated with likes, and a few are positively associated. Listicles, general nouns, ellipsis marks, exclamation marks, and fixed phrase patterns are all associated with fewer likes and the results are statistically significant. In contrast, slang, hyperbolic words and pronouns are positively associated with likes. These results suggest that although some forms of clickbait may generate curiosity gaps that leave readers feeling unsatisfied, other forms of clickbait are positively associated with readers' enjoyment. This suggest that clickbait content is associated with more positive evaluations by readers, which must be the case if the strategy of capturing clicks is to improve readers' favorability toward government content.

To look at the relationship between clickbait, favorable perceptions of government propaganda accounts, and the visibility of government propaganda more directly, we use data from the WeChat Communication Index (WCI).<sup>41</sup> WCI reflects the intensified quantification that producers of propaganda face. WCI rankings are used by the government to assess the performance of their WeChat Official Accounts, and as of 2019, WCI has been used to rank more than 2,000 WeChat Official Accounts for various levels of governments, state-owned enterprises, and media companies (Xi-

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<sup>40</sup>We use a zero-inflated negative binomial because the “Wow” data are overdispersed count data and many posts no “Wow’s” because it was a new feature. There are no substantive changes if we use a negative binomial regression. And the AIC score of the zero-inflated negative binomial model is 5% lower than the normal negative binomial model.

<sup>41</sup>WCI is published by Qingbo Big Data Corporation (清博大数据). WCI rankings are available on Gsdata.cn. WCI rankings are also sometimes posted in the media. For example, Foshan city's WeChat rank was posted by The Paper at [http://www.thepaper.cn/newsDetail\\_forward\\_4106112](http://www.thepaper.cn/newsDetail_forward_4106112). We collected WCI scores on September 5, 2019. In total, we found WCI scores for 199 cities in our dataset.

TABLE 2. PREDICTORS OF LIKES

	(1)	(2)	(3)
Slang	0.17*** (0.02)	0.16*** (0.02)	0.12*** (0.02)
Hyperbolic words	0.13*** (0.02)	0.12*** (0.02)	0.06* (0.02)
Pronouns	0.05*** (0.01)	0.05*** (0.01)	0.03* (0.01)
Question marks	-0.04 (0.02)	-0.03 (0.02)	-0.03 (0.02)
Ellipsis marks	-0.05* (0.02)	-0.05** (0.02)	-0.05* (0.02)
Exclamation marks	-0.08*** (0.01)	-0.10*** (0.01)	-0.08*** (0.01)
General nouns	-0.08* (0.03)	-0.08* (0.03)	-0.07* (0.03)
Fixed phrase patterns	-0.10*** (0.02)	-0.10*** (0.02)	-0.07*** (0.02)
Listicles	-0.13*** (0.03)	-0.14*** (0.03)	-0.15*** (0.03)
Logged Views	0.85*** (0.01)	0.85*** (0.01)	0.85*** (0.01)
Constant	-4.24*** (0.06)	-4.24*** (0.06)	-4.26*** (0.06)
Appeals	NO	YES	YES
Topic Controls	NO	NO	YES
City FE	YES	YES	YES
Observations	16,384	16,384	16,384

*Note:*

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

ang and Shen 2019). The rankings are sometimes made public on local government websites and government WeChat Official Accounts.<sup>42</sup>

WCI is calculated based on average views and likes by day and by post for all posts, average views and likes of highlighted posts, and maximum number of views and likes of all posts.<sup>43</sup> If we assume that likes are a proxy of user favorability and views are a proxy of reach, the WCI allows us to assess favorability toward the government account, the reach of the government account, and the overall visibility of its content. Since WCI is an index, we use OLS regression to examine the relationship between the proportion of clickbait titles in a city-level government WeChat Official Account and its WCI evaluation.<sup>44</sup> Table 3 shows the regression results. Column (1) includes

<sup>42</sup>For examples, see <https://bit.ly/2o31Ohz> and <https://bit.ly/2msL96r>.

<sup>43</sup>For more details, see <http://www.gsdata.cn/site/usage>.

<sup>44</sup>We normalized WCI data.

TABLE 3. PREDICTORS OF ACCOUNT PERFORMANCE (WCI)

	(1)	(2)	(3)
Clickbait percentage	2.858*** (0.191)	1.980*** (0.194)	1.796*** (0.198)
Account duration		0.0002 (0.0001)	0.00004 (0.0001)
Number of posts		0.001*** (0.0001)	0.001*** (0.0001)
Population			-0.173 (0.137)
GDP			0.084 (0.107)
Per capita GDP			-0.133 (0.160)
Government expenditure			0.557*** (0.179)
Gross area			-0.095 (0.067)
Internet subscribers			-0.004 (0.132)
Mobile subscribers			-0.118 (0.193)
Inbound tourists			-0.068 (0.044)
Constant	-1.792*** (0.129)	-2.264*** (0.181)	-1.060 (1.660)
Observations	199	199	185

*Note:*

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

our main variable, which is the proportion of titles containing clickbait in each city's government WeChat Official Account. Column (2) adds account characteristics—the duration of the government account (number of days it has been posting) and the total number of posts that each account posted during our data collection period. Column (3) adds controls for city-level characteristics, which may affect the city's ability to manage social media. These city controls include population, GDP, per capita GDP, government expenditures, geographic area, the number of internet service subscribers, the number of mobile service subscribers, and the number of inbound tourists, all of which are logged.<sup>45</sup>

These results show that clickbait is associated with higher WCI ratings, which means government WeChat Official Accounts that use more clickbait in their post titles are more likely to

<sup>45</sup>These city controls come from the 2018 *China City Statistical Yearbook* published by the National Bureau of Statistics of China, which provides complete data on 185 cities; see <http://www.stats.gov.cn/tjsj/ndsj/2018/indexeh.htm>.

have more followers, have more views on their content, and have more likes of their content. This provides suggestive evidence of the second pathway, that the strategy of capturing clicks with clickbait is associated with more favorable perceptions of government content. The correlation between WCI ratings and the use of clickbait also suggests that capturing clicks with clickbait may accompany greater visibility of government social media accounts and greater visibility of government propaganda content.

## Conclusion

This paper uses ethnographic fieldwork as well as computational methods and large-scale human coding on a novel dataset of WeChat government posts to show how digital media is transforming government propaganda. We theorize that governments are going beyond propaganda and disinformation to increase the visibility of their propaganda messages online. We show that Chinese government propagandists are doing this by producing non-propaganda content, though not at the expense of overshadowing political content, and by relying heavily on clickbait in the titles of government propaganda accounts. The prevalence of clickbait in government WeChat Official Account is on par with the rate of clickbait found in popular commercial and celebrity social media accounts and vastly exceed other strategies to attract clicks, such as emotional appeals. Finally, we find that clickbait strategies are associated with more reads, more likes, and greater reach of government social media accounts and content.

By taking seriously the affordances and characteristics of social media, this paper shows how these digital technologies are transforming government propaganda efforts. The change we theorize and observe is not one of degree—more censorship, more propaganda—it is a change in kind—using alternative strategies in order to disseminate propaganda more effectively. We hope future research can delve into the effects of this strategy and continue to unravel how changes in the media ecosystem are transforming government efforts to control information.

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