



## At a Basic Level, Academic Review of social media, the Cost of Connecting, Communicating, and Sharing Information

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## Abstract

Social media has had profound effects on the modern world. Continuing to be the largest social media company by far, Facebook has 2.3 billion monthly active users worldwide (Facebook 2018). As of 2016, the average user was spending 50 minutes a day on Facebook and sister platforms Instagram and Messenger (Facebook 2016). There may be no technology since television that has so dramatically reshaped the way people acquire information and spend time. ("A "gold standard" study finds deleting Facebook is great for your ...") Speculation about the welfare impact of social media followed a familiar trajectory, with early optimism about potential benefits prompting widespread concerns about potential harms. At a fundamental level, social media significantly



reduces the cost of connecting, communicating, and sharing information with others. Given that interpersonal connections are among the most important drivers of happiness and well-being (Myers 2000; Reis, Collins, and Berscheid 2000; Argyle 2001; Chopik 2017), this can be expected to bring widespread improvements in individual well-being. (“NBER WORKING PAPER SERIES - National Bureau of Economic Research”) Many also pointed to broader social benefits, from facilitating protest and resistance in autocratic countries to promoting activism and political participation in established democracies (Howard et al. 2011; Kirkpatrick 2011). More recent discussions have focused on several possible negative effects. At the individual level, many pointed to negative associations between heavy social media use and both subjective well-being and mental health. Negative outcomes such as suicide and depression seem to have increased sharply over the same period as the use of smartphones and social media. Media expanded Alter (2018) and Newport (2019), along with other academics and prominent Silicon Valley executives in the “time well spent” movement, argue that digital media devices and social media apps are harmful and addictive. (“Social media and its effects on people - SlideShare”)

**Keywords:** *social media, Connecting with Others, Communicating, Sharing Information, Cost of Sharing Information*

## 1. Introduction

At the broader social level, the concern has focused specifically on a range of negative political externalities. Social media can increase political polarization by creating ideological “echo chambers” among like-minded fellowships (Sunstein 2001, 2017; Settle 2018). Also, social media is the primary channel through which false information is spread online (Allcott and Gentzkow 2017), and there is concern that coordinated disinformation campaigns could influence elections in the US and abroad. In this paper, we report a large-scale randomized assessment of Facebook's welfare impacts, focusing on US users approaching the November 2018 midterm elections. We collected a sample of 2,743 users via Facebook display ads and revealed their willingness to



deactivate their Facebook account (WTA) for a four-week period ending immediately after the election. We then randomly assigned 61 percent of these subjects with a WTA of less than \$102 to either a Treatment group that was paid to opt out, or a Control group that was not paid. We verified compatibility (Abeelee et al. (2018), Burke and Kraut (2016), Ellison, Steinfield and Lampe (2007), Frison and Eggermont (2015), Kross et al. (2013), Satici and Uysal (2015), Shakya) and Christakis (2017), Tandoc, Ferrucci and Duffy (2015)) Appel, Gerlach and Crusius (2016) and Baker and Algorta (2016). See, for example, Twenge, Sherman and Lyubomirsky (2016), Twenge and Park (2017), Twenge, Martin and Campbell (2018) and Twenge et al. (2018). (“The Welfare Effects of Social Media - American Economic Association”) The events that are possible by regularly checking and deactivating the general profile pages of the participants are important. A range of outcomes should be measured using text messages, polls, emails, direct measurement of Facebook and Twitter activity, and administrative voting records.

Our study provides the largest-scale empirical evidence available to date on how Facebook affects a range of measures of individual and social well-being. We evaluate the extent to which time spent on Facebook replaces alternative online and offline activities, with particular attention to crowd and face-to-face social interactions outside of news consumption. We examine Facebook's broader political externalities through measures of news information, misinformation awareness, political engagement, and political polarization. We examine the impact on individual utility through subjective measures of well-being obtained through both surveys and text messages. Finally, we analyze the extent to which forces such as addiction, learning, and projection bias can cause suboptimal consumption choices by looking at how Facebook use, and value have changed after the experiment. Our first set of results focuses on substitution models. A key mechanism for the effects on individual well-being may be that social media crowds out face-to-face social interactions , thereby deepening loneliness and depression (Twenge 2017). A key mechanism for political externalities will be that social media excludes consumption of higher quality news and information sources. We find evidence consistent with the first of these, but not the second .



Consistent with the reported reduction in news consumption, we find that disabling Facebook significantly reduces news information and interest in politics. The treatment group was less likely to say that they followed news about politics or the President and were less able to answer factual questions about the latest news more accurately. Our overall news information index fell by 0.19 standard deviations. No detectable effect on political turnout, as measured by voter turnout in midterm elections and the likelihood of clicking email links to support political causes. The deactivation significantly reduced the polarization of views on policy issues and the extent of exposure to polarizing news. Disabling did not statistically significantly reduce emotional polarization (i.e., negative feelings about the other political party) or polarization in actual beliefs about current events, although coefficient estimates also point in this direction. Our overall political polarization index fell by 0.16 standard deviations.

## 2. A Different Index of Political Polarization

As a point of comparison, previous work found that a different index of political polarization increased by 0.38 standard deviations between 1996 and 2018 (Boxell 2018). Our third set of outcomes looks at subjective well-being. Disabling caused small but significant improvements in well-being, and particularly in self-reported happiness, life satisfaction, depression, and anxiety. The effects on subjective well-being as measured by responses to daily text messages were positive but not significant. Our overall subjective well-being index was improved with a standard deviation of 0.09. As a point of comparison, this is Bolier et al. (2013). (“The Welfare Effects of Social Media - American Economic Association”) These results are consistent with previous studies suggesting that Facebook may have negative effects on mental health. However, we also show that the magnitudes of our causal effects are much smaller than we estimated using the correlational approach of the previous literature . (“The Welfare Effects of Social Media - American Economic Association”) We find little evidence to support the hypothesis suggested by previous studies that Facebook may be more beneficial for “active” users – for example, users who



regularly comment on pictures and posts of their friends and family rather than just scrolling through their news feed.

The fourth set of results considers whether deactivation affects people's demand for Facebook after the study is finished and their views about Facebook's role in society. When the experiment ended, participants reported that they planned to use Facebook much less in the future. Post-experimental use reduction is consistent with our finding that opt-out improves subjective well-being and is also consistent with the hypotheses that Facebook is habit-forming or that people learn to enjoy life without Facebook in the sense of Becker and Murphy (1988). The deactivation caused people to appreciate both the positive and negative effects of Facebook on their lives. Consistent with our results on news information, the Treatment group was more likely to agree that Facebook helps people follow news. About 80 percent of the treatment group agreed that opting out was good for them, but they were more likely to think people would miss Facebook if they used less. The treatment group texted more about how Facebook has had both positive and negative effects on their lives to the free answer questions. The opposite effects on these specific metrics are removed, so our overall opinion index about Facebook remains unaffected.

Our study also addresses several adjacent questions on how to measure economic Correlation studies of active and passive Facebook use:

*Burke, Marlow and Lento (2010), Burke, Kraut, and Marlow (2011), Burke and Kraut (2014), and Krasnova et al. (2013) and randomized trials between Deters and Mehl (2012) and Verduyn et al. (2015).*

While participants predicted that spending 20 minutes on Facebook would make them feel better, it made them feel worse. Organizations like Time to Log Off argue that a 30-day "digital detox" will help people regulate their social media use to their own advantage. To quantify the possibility that opt-out can help the Treatment group understand the ways their use makes them unhappy, we uncovered willingness to accept at three points using the incentive-matched Becker-DeGroot-Marschak (1964, "BDM").



Thus, the difference in how Treatment and Control changed their WTA for deactivation over 5-8 weeks reflects projection bias, learning, or other unexpected experience effects from deactivation. After weighting our sample over the observables to match the average US Facebook user, we are going to do 1-4. Average and average willingness to agree to disable Facebook for weeks was \$100 and \$180, respectively. These valuations are based on Brynjolfsson, Eggers and Gannamaneni (2018), Corrigan et al. (2018), Mosquera et al. (2018) and Sunstein (2019). A standard calculation of consumer surplus adds up the average valuation of the estimated 172 million US Facebook users, yielding a consumer surplus of \$31 billion over four weeks of Facebook.

### 3. Deactivation Reduces Demand for Facebook

However, consistent with our other results that opting out reduces demand for Facebook, opting out does not result in WTA's steps 5-8. It dropped as much as 14 percent in weeks. This is even though traditional consumer surplus metrics overestimate real welfare gains from social media, although a calculation that adjusts for the downward WTA revision implies that Facebook is producing a massive 4See, for example, Brynjolfsson and Saunders (2009), Byrne, Fernald and Reinsdorf. (2016), Nakamura, Samuels and Soloveichik (2016), Brynjolfsson, Rock and Syverson (2018) and Syverson (2017). 5This measurement was used by Acland and Levy (2015), Becker and Murphy (1988), Becker, Grossman and Murphy (1991), Busse et al. (2015), Charness and Gneezy (2009), Conlin, O'Donoghue and Vogelsang (2007), Fujiwara, Meng and Vogl (2016), Gruber and Köszegi (2001), Hussam et al. (2016), Loewenstein, O'Donoghue and Rabin (2003) and Simonsohn (2010).

### 4. What Do Our Results Mean About Facebook's Overall Net Welfare Impact?



On the one hand, disabling Facebook increased subjective well-being, and 80 percent of the Treatment group reported deactivating was good for them. On the other hand, participants did not want to give up Facebook, even after being disabled for four weeks, unless they were offered a sizable sum of money, which should at least "detox" some learning or addiction. It is not entirely clear whether survey measures or monetary considerations should be given priority as normative measures of consumer welfare. Benjamin et al. (2012) suggests that subjective measures of well-being like ours are not an exact measure of what people try to maximize when making decisions, but Bohm, Lind'en, and Sonneg°ard (1997), Mazar, Koszegi, and Ariely. (2014) and other studies make it clear that monetary valuations are not closely followed and can be easily manipulated. We consider these tensions as fodder for future research. Our results should be interpreted with caution for several reasons. First, the effects may differ by duration, time, or scale of deactivation. A longer





These studies are included in the wider media effects literature that uses experimental and quasi-experimental methods to measure the effects of media technologies such as television. Media providers such as Fox News and content such as political advertising (Bartels 1993; Besley and Burgess 2001; DellaVigna and Kaplan 2007; Enikolopov, Petrova, and Zhuravskaya 2011; Gentzkow 2006; Gerber and Green 2000; Gerber et al. 2011; Gerber, Karlan and Bergan 2009 ; Huber and Arceneaux 2007; Martin and Yörükoğlu 2017; Olken 2009 and Spenkuch and Toniatti 2016); For reviews, see DellaVigna and Gentzkow (2010), Napoli (2014), Strömberg (2015), Enikolopov and Petrova (2015), and DellaVigna and La Ferrara (2015). 6 et al. (2018). We measure effects on a comprehensive range of outcomes and are the only ones to offer a preliminary analysis plan from these randomized trials.

## 5. Experimental Design, Descriptive Statistics and Empirical Strategy

Given the effect sizes and residual variance in our sample, it would be unlikely that we would have enough power to detect any effects if they were limited to sample sizes in previous experiments. Our study is also relevant to quasi-experimental predictions of social media effects made by Muller and Schwarz (2018) and Enikolopov, Makarin, and Petrova (2018). Clicking on the ad took the participant to a short front-screen survey that included a few background demographic questions and a consent form. After completing the consent form, the participants began the basic survey. We also asked for each participant's name, zip code, Twitter address and phone number (“so we can text you during the study”) and the URL (“we will use”) of their Facebook profile page. In total, 3,910 people completed the basic survey and were willing to opt out. Of these, 1,013 were excluded from the experiment because of invalid data (for example, invalid Facebook profile URLs) or low-quality core responses (for example, discrepancies between the front screen and the average daily Facebook usage reported in the core survey).

The survey clearly explained what deactivation means and how to monitor deactivation. Facebook allows users to deactivate and reactivate their accounts at any time. We informed participants that



they can continue to use Facebook Messenger when disabled and that their profiles and friend networks will not change when they are re-enabled. We emphasized that Facebook will automatically reactivate their account if they log into the Facebook website or application or actively log into another application using their Facebook login.

However, that does not completely prevent people from using other apps they use Facebook to sign in with. People can continue to use other apps, set up non-Facebook logins or log in with Facebook if they are already signed in, and then deactivate the Facebook account again. 8The survey said, “The computer generated a random amount of money to offer you to deactivate your Facebook account for the next 4 weeks.

First, before we tell you what the offer is, we will ask you what is the lowest possible offer you are considering accepting. If the computer generates a bid higher than the amount you submitted, we will ask you to deactivate it for four weeks and pay you the higher amount if you do. If it is lower than the amount you bid, we will pay you the lower amount. If the bid is below this amount, we will not ask you to terminate your account. Then, we asked the participants additional comprehension questions so that they fully understood the process. Because we did not want to artificially cut the distribution of the resulting WTA, and previous research has found that providing information about the limits of the bid price distribution can affect BDM valuations (Bohm, Lind'en, and Sonneg ard 1997; Mazar, Koszegi, and Ariely 2014), giving participants the distribution of offer prices. or we did not say your support. It used a second BDM mechanism following the eight final line polls and to encourage the WTA to remain inactive for four weeks after the finish line instead of 24 hours after the end of the poll.



## **6. An Automated Email Notifying Participants That They Need to Disable Again Immediately, ASAP, and No disabled Participants**

We validated opt-outs within approximately six hours of each participant completing the questionnaire during the post-midline and post-endline 24-hour opt-out periods. Our program immediately sent participants an automated email instructing them to disable it again as soon as possible, and a questionnaire asking participants to explain why they should not be disabled if not disabled. Each participant was informed that they would be entitled to a fifteen-dollar "completion payout" if they completed all surveys, responded to seventy-five percent of text messages, and kept their account closed for the twenty-four hours following the middle line. The final criterion, which makes the completion payment dependent on compliance with BDM's opt-out, turns accurate reporting values in BDM into a strictly dominant strategy, rather than weakly dominant compared to other available options.

This information was collected at the beginning of the study. When we got to the last line, we asked them how much time they spent on the same activities "compared to what is customary for you". We phrased the questions this way so we could more accurately identify changes in individuals' reporting that they were wasting their time because of opting out. Interaction with other people There are three indicators that we use to measure social interaction. A survey question that asked participants to "write down as many friends as you can think of in one minute that you met face-to-face last week" served as the basis for calculating the face-to-face friend's variable. The number of offline activities a person participated in at least once during the previous week includes dining out, spending time with their children, and other such pursuits. Indicators of various encounters include whether the participant interacted with someone who voted the other way in the most recent presidential election, and whether the participant interacted with someone from another country in the previous week. Change where you get your news. We started by asking respondents how often they had heard from a variety of sources over the past four weeks, including Facebook, cable, print and radio news . This question is based on a standard survey question developed by the Pew Research Center (2018a). In the last line, we asked once again how often



they heard from the same sources, and this time we framed the question as "compared to what is customary for you". We counted the number of tweets posted by respondents who said they had a Twitter account in the four weeks up to baseline and every four weeks between midpoint and endpoint measurement. This provides a metric that does not rely on self-reporting of a potentially viable alternative to Facebook.

This allows us to measure the degree to which our sample is representative over observables. They have helped the public learn about preventive measures during the epidemic and can be used by authorities to combat false rumors that can help stabilize society and public opinion (Li and Liu, 2020). Unlike the SARS outbreaks of 2003, the Chinese government took full advantage of social media to publish real-time pandemic information and debunk false rumors about COVID-19. Therefore, in the Omnimedia era, it made sense for governments to consider how they could effectively use social media to mitigate the negative effects of information epidemics (such as public panic). There is also some concern about the effects of social media on public attitudes and emotions (Oh et al., 2013; Basch et al., 2020; Ivie et al., 2020; Laato et al., 2020; Zagidullin et al., 2021; Luo et al., 2022). Some commentators argue that "too much information" will cause anxiety, depression, and panic in society and may lessen the impact of positive actions taken in response to the epidemic (Laato et al., 2020; Khubchandani et al., 2021; Luo et al., 2021). For example, in an online survey of five designated COVID-19 hospitals in Hubei Province (China), Ma et al. (2020) found that patients who frequently use social media to get information about COVID-19 tend to be more depressed and report other negative emotions. Using the theories of health perception and cognitive load, Laato et al. (2020) recommends reducing information overload and screening for suspicious health news to reduce the COVID-19 information epidemic. However, other literature suggests that using social media, people can effectively acquire relevant public health information and maintain social contact with others, which can help reduce public anxiety (McGowan et al., 2012). ("COVID-19 on TikTok: Harnessing an emerging social media ... - ResearchGate") For example, Basch et al. (2020) found that young people can not only share important public health information, but also solve some of the issues brought on by COVID-19



(for example, anxiety) to stay connected and positive using TikTok. (“Frontiers | The Impact of Government Social Media Information Quality ...”) However, the existing literature regarding the impact of social media on the infodemic has two limitations. First, it explores the negative impact of social media: often from the perspective of information overload or cognitive load. However, although it lacks theoretical explanations and empirical discussions, social media also has a positive role in reducing the negative effects of the infodemic. Second, the literature on the information epidemic tends to focus on the use of social media by the public, ignoring its value for governments in managing crises (Chen et al., 2020).

Therefore, it is also important to consider the government's use of social media and its role in mitigating the COVID-19 information epidemic. This article aimed to address these limitations by exploring the impact of information quality on government social media, especially Weibo, WeChat, and Tiktok, which are created by government agencies and used to engage with the public (Bertot). et al ., 2012). According to the Elaboration Likelihood Model, which is a dual-process theory describing the change in attitudes (Petty and Cacioppo, 1986, 2012); The negative effects of the information epidemic (for example, public panic) can be mitigated by two effects: *central and peripheral*.

## 7. People on the Central Route

On the central route, people thoughtfully process the information content the government posts on social media to alleviate public panic. The environmental path relies on people who believe and trust in the credibility of information sources (i.e., trust in local government) because of the relationship between social media and the government's use of them to alleviate public panic. At the start of the COVID-19 epidemic, the city of Wuhan in China was closed. In the first three weeks of the curfew (between January 23 and February 13, 2020), the government's social media information quality, public panic, etc. A survey was conducted to measure opinions about Analysis of the survey data provided theoretical and practical insights that helped explain how a



government's use of social media could mitigate the negative effects of an information epidemic. Literature Review and Theoretical Background Research on Infodemic and Public Panic In the last 20 years, Information Epidemiology as a branch of health informatics has developed greatly (Eysenbach, 2002, 2009; Mavragani, 2020). (“Frontiers | The Impact of Government Social Media Information Quality ...”) More recently, COVID-19 caused the first global information epidemic of the social media era (Ahmad and Murad, 2020). At the Munich Security Conference on February 15, 2020, WHO Director-General Tedros Adhanom Ghebreyesus said: “We are not just fighting a pandemic; We are fighting an infodemi.” The current infodemic literature has used data from various online platforms (including social media such as Twitter and Facebook) to analyze and predict the occurrence of diseases and the effectiveness of health intervention (Mavragani, 2020). These diseases can be epidemic diseases such as drugs, marijuana, depression, and smoking (Katsuki et al., 2015; Ricard et al., 2018) or chronic diseases such as diabetes and breast cancer. (Arnhold et al., 2014). After COVID-19 began to spread, researchers began to investigate whether the information epidemic fueled by social media was contributing to public panics, thereby affecting people's physical and mental health (Ahmad and Murad, 2020).

The resulting literature can be divided into two streams. Methods derived from information epidemiology are used to analyze the spread and management of the information epidemic based on social media usage (Liao et al., 2020). The other analyzes the impact of social media use on public panic, anxiety and cyberchondria<sup>2</sup> (Laato et al., 2020). For example, Ahmad and Murad (2020) conducted a survey and found that 87.01% of the panic contagion phenomenon caused by COVID-19 can be explained using social media. Laato et al. (2020) found a significant positive relationship between information overload and users' cyberchondria. Other studies have found sadness, anxiety, and cognitive dissonance resulting from perceived threat and perceived information overload (Song et al., 2021). (“Frontiers | The Impact of Government Social Media Information Quality ...”) However, the available literature has the following two limitations. First, related studies in Information Epidemiology and Library and Information Science (LIS) tend to focus on the management of chronic diseases in terms of information overload and cognitive load:



it lacks research on the governance of information epidemics. Second, although several studies have explored the relationship between the infodemic and public health, there is no theoretical explanation for how to reduce the negative effects of infodemics such as public panic, anxiety, and cyberchondria. (“Frontiers | The Impact of Government Social Media Information Quality ...”) Research on Government social media and Crisis Management In this study, Government social media (GSM) refers to social media accounts (such as Weibo, Twitter, WeChat and Tiktok) registered by state or local governments to share information with the public. (Bertot et al., 2012). Earlier studies have discussed this either from a government standpoint or from a public standpoint.

Studies on the latter focus on the public's desire to connect with GSM. For example, using social media data from January to March 2020, Chen et al. (2020) explored the effects of media richness, dialogue cycle, content type, and emotional value on public participation in GSM at the onset of the COVID-19 pandemic. (“Frontiers | The Impact of Government Social Media Information Quality ...”) From a government perspective, GSM studies highlight how governments use different social media platforms to publish information, manage public opinion, interact with the public, and address crises (such as emergency responses) (Zhang et al., 2019). For example, Bertot et al. (2012) explored the challenges (such as privacy protection and regulations) and opportunities faced by the US federal government in using social media. Kavanaugh et al. (2012) examines how government use of social media can help deal with crises ranging from the common (such as traffic and weather crises) to the extreme (such as earthquakes and floods). When a crisis occurs, relevant government agencies can respond by using social media to publish updated information, assess public attitudes and behaviour, correct false rumors, promote social cohesion, and mobilize social resources (Chatfield and Reddick, 2018; Zhang). (“Frontiers | The Impact of Government Social Media Information Quality ...”) et al., 2019; Chen et al., 2020).

However, despite the increasing current research recognizing the potential value of GSM in crisis management, the specific tools that GSM uses against an information epidemic have not yet been empirically explored. The Elaboration Likelihood Model the Elaboration Likelihood Model



(ELM) was proposed by Petty and Cacioppo (1986) to describe the formation and change of attitudes towards external stimuli (eg, knowledge). (“Frontiers | The Impact of Government Social Media Information Quality ...”) The model considers two different information processing and attitude formation routes, namely the central route and the peripheral route (Petty & Cacioppo, 2012). The central pathway tends to require deliberate and cognitive attention to process relevant information (such as text or verbal expression). In contrast, environmental information processing evaluates quality based on the general impression of information (such as attractiveness, reliability, or perception of resources) (Petty & Cacioppo, 2012). Route selection is when information processing depends on the possibility of elaboration (Petty and Cacioppo, 1986).

People who process information through the central route tend to view information rationally, carefully examine relevant information, and logically change their attitudes. (“Frontiers | The Impact of Government Social Media Information Quality ...”) Individuals who process information in an environmental way think less about the information itself and instead are affected by other factors (Sussman & Siegal, 2003; Bhattacharjee & Sanford, 2006). The ELM was initially applied to offline consumer behavior, but the model has recently been used to explain consumers' behavior on social media (Li et al., 2019; Chang et al., 2020). (“Influence Processes for Information Technology Acceptance: An ...”) For example, Chang et al. (2020) used ELM to explore the impact of central pathway factors (information integrity and information accuracy) and environmental pathway factors (post-aesthetics and post-popularity) on consumer behavior in Facebook's second-hand market. In addition, Li et al. (2019) analyzed how the characteristics of social media affect the impact of corporate apologies and corporate reputation on customer attitudes. (“Can an apology change after-crisis user attitude? The role of social ...”) In addition, Sussman and Siegal (2003) found information usefulness as a mediator of the knowledge adoption process by integrating the Technology Acceptance Model with the ELM to create a knowledge adoption model (IAM) . Initially, the ELM claimed that only one of two pathways (central or peripheral) influences an attitude change. However, a review of the literature shows that both jointly influence the attitudes and intentions of individual behaviors (Cyr et al., 2018). (“Frontiers | The Impact of Government





Social Media Information Quality ...”) This study explores the impact of GSM information quality on public panic because of public information adoption and aims to increase understanding of the mechanisms of both central and peripheral pathways that cause public panic. The information quality of GSM is a prominent level of granularity and represents a centrally controlled way of influencing how the public is informed. (“Frontiers | The Impact of Government Social Media Information Quality ...”)

At the same time, trust in government can function as an indicator of knowledge that helps people assess the “ argument quality” of the information provided rather than the content itself, thus representing an environmental route . (“Frontiers | The Impact of Government Social Media Information Quality ...”) This article expands on the original ELM by exploring the mediating role of pandemic prevention information in reducing panic and evaluates the effects of GSM information quality on trust in government. Our research model is shown in Figure 1.

## 8. Conclusion

During the COVID-19 pandemic, Ahmad, and Murad (2020) surveyed Iraqi people and found a significant positive association between social media (i.e., Facebook) use and public panic. They concluded that the association arose because social media was flooded with information, making it difficult to distinguish truth from falsehood. The government uses social media to convey complete, consistent, and accurate pandemic information for public crisis management (such as publishing authoritative information and rejecting rumours) (Kavanaugh et al., 2012). These actions can effectively mitigate information epidemics (like epidemic rumours; Li et al., 2021), and the higher the quality of information disseminated by GSM, the more effective it will be in alleviating public panic associated with information epidemics. Therefore, we propose the following hypothesis: Hypothesis 1: High GSM information quality negatively affects public panic (H1). (“Chinese public’s panic buying at the beginning of ... - ResearchGate”) According to ELM, source reliability refers to the perception of the quality of a message source and does not reflect



anything about the message itself (Sussman & Siegal, 2003; Bhattacharjee & Sanford, 2006). The source reliability of GSM is determined by the public's perception of trust in their local governments. Existing literature considers three dimensions that affect trust: government ability, benevolence, and honesty (Zahedi & Song, 2008). Government capability relates to competence in management of human, financial and material resources, and related jobs such as pandemic prevention and control during the COVID-19 pandemic. Benevolence is determined by the extent to which a government actively cares and helps the public, for example, by improving social welfare. An honest government conducts public affairs fairly, such as fairly distributing pandemic prevention materials. According to the Elaboration Likelihood Model, information with “resource credibility” (such as information from local government) changes public attitudes or behaviors in an environmental way. In a low elaboration situation, source credibility can directly change public attitudes or opinions (Bhattacharjee and Sanford, 2006). (“Frontiers | The Impact of Government Social Media Information Quality ...”) For example, Wang et al. (2019) found that the reliability of game providers can prevent users from cheating in an online game. Li et al. (2019) also found that the credibility of the source (company reputation) can change public attitudes during a company's crisis. (“Frontiers | The Impact of Government Social Media Information Quality ...”) During an information epidemic, the more the people trust their government, the more confidence the society will have in fighting the epidemic. Thus, this trust relationship can effectively combat the pandemic and alleviate public panic. Therefore, we propose the following hypothesis: Hypothesis 2: A prominent level of local government trust negatively affects public panic (H2). Pandemic Prevention Information as a Tool in the Information Retrieval Process According to the ELM, the usefulness of information is related to the user's perceptions of valuable, informative, and useful information (Delone and McLean, 2003; Sussman and Siegal, 2003). Blair et al. (2017) suggests that the usefulness of information during an information epidemic will be strongly influenced by the public's understanding of pandemic prevention information. In China, the public can access information on pandemic prevention via GSM. There is a need in the literature for much more research on this subject, especially in Turkey and Turkish language.



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