Information Control and Public Support for Social Credit Systems in China*

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Abstract

Critics see China's social credit system (SCS) as a tool of surveillance and repression. Yet opinion surveys find considerable public support for the SCS in China. We explain this puzzle by focusing on citizens' lack of knowledge regarding the repressive nature of digital surveillance in dictatorships, which can be attributed to (1) invisible and targeted repression associated with digital surveillance and (2) government propaganda and censorship further concealing its repressive potential. A survey experiment on 750 college students in three Chinese regions shows that revealing the SCS's repressive potential significantly reduces support for the system, but emphasizing its social-order-maintenance function does not increase support. Observational evidence from the same college survey and a nationwide survey of 2,028 Chinese netizens show that the support is higher if citizens knew about the SCS through state media. Our findings highlight the role of information and framing in shaping public opinion on digital surveillance.

Keywords: Social Credit; Surveillance; Information; Public Opinion; Repression.

*We thank Matt Golder, Sona Golder, Xin Jin, Luke Keele, Peter Lorentzen, Kevin O'Brien, Jean Oi, Jennifer Pan, Jessica Teets, Joseph Wright, Yiqing Xu, Boliang Zhu, and participants at the APSA annual meeting, the China Social Science Workshop at Stanford, and department seminars at Penn State for helpful comments. Genia Kostka has received funding from the European Research Council (ERC) Starting Grant (grant agreement NO. 852169/Digital Governance). Xu Xu has received funding from the Program in Comparative Politics at Penn State. All remaining errors are our own.

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1 Introduction

While the technological advancements in metadata collection and artificial intelligence have made people's life much more convenient, they provide governments with powerful new tools to intervene in society. By 2018, more than 30 countries (15 autocracies) are deploying digital surveillance tools to monitor, track, and surveil citizens, and this number is rapidly increasing. Among these regimes, China's surveillance state has drawn global attention because of its unprecedented size, sophistication, and international influence—more than 18 countries have adopted China's surveillance technologies as of 2019.[1] Recently, particular heed is paid to China's social credit system (SCS), a surveillance system that rewards and punishes citizens based on the assessments of their "trustworthiness".[2] The SCS collects a tremendous amount of information on citizens' personal, financial, behavioral, and even political conduct to construct their social scores (Wang 2017). Low-score citizens are banned from flights, trains, hotels, good schools, social benefits, government jobs, etc. Critics raised serious concerns about the SCS's repressive nature as it has been used to track and punish political activists and human rights lawyers (Gan 2019).[3] Yet, opinion surveys from China find considerable public support for the SCS (Kostka 2019) and for digital surveillance in general (Alsan et al. 2020; Su, Xu and Cao 2020).

Why would citizens in dictatorships support a powerful surveillance tool that could impose substantial political costs on them? The literature on surveillance and state coercion commonly emphasizes the liberty-security tradeoff: citizens sacrifice political freedom for personal security (Davis and Silver 2004) or societal wellbeing (Alsan et al. 2020) so that they are willing to support state surveillance (Reddick, Chatfield and Jaramillo 2015; Ziller and Helbling 2020). However,

[1]See Brookings, "Exporting digital authoritarianism.": https://www.brookings.edu/research/exporting-digital-authoritarianism/, last accessed March 13, 2021.

[2]Chinese local governments and e-commerce platforms have different social credit systems; we use "the social credit system" to represent government-run social credit systems in general.

[3]Numerous academic and news articles expressed such concerns. See, for example, Hoffman (2017); Liang et al. (2018); Jiang and Fu (2018).

this argument assumes that citizens are well-informed about the political costs of surveillance. This can be an unrealistic assumption even for advanced democracies largely due to the secret nature of digital surveillance. For example, had Edward Snowdon not revealed top-secret documents concerning the US government's surveillance operation, the public would not have known the impingement upon individual freedom even if mass surveillance had taken place in the US for years. Citizens are even less informed in dictatorships where the government heavy-handedly controls information (Wallace 2016; Guriev and Treisman 2020). In this paper, we argue that citizens' support for the SCS, and digital surveillance in general, can be partly explained by their information problem concerning the repressive potential of digital surveillance.

Surveillance can certainly achieve social benefits. In authoritarian systems, the rule of law is weak because dictators are reluctant to tie their own hands with independent judiciaries and legislatures. Under-developed judicial systems often result in widespread corruption, incivilities, violations of contracts, and social distrust in authoritarian societies. State surveillance can be used to collect information about citizens' misconduct and enforce social contracts. With the help of digital technology, China's social credit system was created to promote social order and foster trust in society. This order-maintenance function is an important reason behind the public support for the SCS in China. However, despite its promised social benefits, the SCS has great repressive potential.[4] The SCS is essentially a digital surveillance system because the first step to generate social scores for individual citizens is to collect massive information concerning citizens' social, personal, financial, and political activities. Such detailed information allows the government to identify political opponents for repression. Repressing opponents is also easy under the SCS because the government can simply lower an individual's social score to restrict access to a variety of services and benefits. In dictatorships where the government faces constant threats from the masses but has difficulties identifying regime opponents due to citizens' preference falsification, a surveillance and enforcement platform like the SCS naturally leads to repression. Abundant evidence

[4]The SCS has already been used for political repression in China. Here we use "potential" from an individual's perspective: one could be potentially repressed by the system.

suggests that Chinese local governments have commonly used the system to repress journalists and stop protesters (Gan 2019; Wang 2017).

What makes the SCS particularly attractive to the repressive apparatus is that *political repression* under the SCS is less visible to the public than physical repression. In dictatorships, digital surveillance technology facilitates low-profile, targeted repression against dissidents (Xu 2020). Repression under the SCS takes even milder, lower-profile forms. Instead of putting dissidents into jails, the government can lower their social scores to ban them from traveling, buying property, or taking out a loan.[5] Unlike overt, physical repression that often causes citizen backlash, the milder, more targeted repression entailed by social scoring is less perceivable to the general public and hence less provoking.[6] Moreover, the political repression function of the SCS can be disguised under its social-order-maintenance function due to government information control in dictatorships. Government propaganda frames the SCS as an effective tool for fostering trustworthiness in society. Censorship helps the government remove negative information about the SCS and conceal targeted repression even if repression cases are revealed. Both tools help emphasize the social-order-maintenance functions of the SCS and downplay its role in political repression. As a result, citizens in dictatorships tend to be poorly informed about the SCS's repressive potential.

Citizens' information problem concerning the SCS's repressive potential is of crucial importance for understanding public opinion about the SCS because it affects citizens' calculation of *perceived* benefits and costs about the system. In other words, citizens support the SCS because they know its social-order-maintenance benefits but are not fully aware of its political-repression costs. Thus, revealing information concerning the SCS's role in political repression should decrease public support. Reminding citizens of the SCS's role in social order maintenance, on the

[5]Way and Levitsky (2006) define low-intensity repression broadly to indicate the state's various efforts to suppress opposition activity. Punishment through the SCS fits into this category.

[6]Although Chinese government publicizes blacklists to deter bad behavior, Engelmann et al. (2019) find that that behavioral records on government blacklists are mostly related to financial or commercial dishonesty.

other hand, is unlikely to further increase their support because such information is already dominant in media and society. We conduct a field survey experiment with a sample of over 750 college students in three regions of China to test this information argument. Individuals are randomly assigned to different information treatments about the roles of the SCS: social order maintenance, political repression, or both. The findings from the experiment are consistent with our predictions.

To further test this information mechanism, we examine the heterogeneous treatment effect of the repression information among citizens with different levels of information. The Chinese state media rarely reports negative news about the SCS whereas other information sources such as social media and non-state media outlets occasionally reveal the SCS's repressive potential.[7] This allows us to construct a proxy for citizens' awareness of the SCS's repressive potential based on sources of their information: individuals who obtain information only from state media outlets are therefore considered less informed. Our test on this potential heterogeneous effect indeed shows that the treatment effect of repression information is larger on less informed citizens, i.e., those who obtained information only from state media and therefore were less informed of the repressive nature of the SCS.

One might be concerned that, had the government not used the SCS for political repression in reality, the reason behind the reduced popular support in our experiment would not be citizens' lack of information about the SCS's repressive potential but rather our unrealistic framing, that is, the repression scenario described in our information treatment has not happened and is unlikely to happen in the future. We address this concern from three aspects. First, we discuss the logic behind potential power abuse through the SCS and argue that authoritarian governments have a tendency to use the SCS for repression (Section 2). Second, we provide evidence that repressing protesters, petitioners, journalists, and political activists via the SCS is common among Chinese localities (Section 3). Third, we show that revealing the SCS's repressive potential has a weaker effect among better-informed individuals (Section 4.2), which suggests that some citizens may

[7]Because the SCS has not been implemented nationwide, most citizens only know about the SCS from state media outlets and/or other indirect sources.

have already known the SCS's repressive function from non-state media sources and social media.

In addition to the experimental evidence, we use observational data to explore the role of information on citizen's support for the SCS. State-run news media—China's propaganda machine—provides abundant information on the SCS's social-order-maintenance functions but conceals its repressive potential. Using the aforementioned college field survey and a nationwide survey of 2,028 Chinese Internet users, we find that citizens are more likely to support the SCS if they obtained information about the SCS from state media rather than other sources. The finding is not driven by individuals' risk preferences, insecurity, obedience, and social desirability bias.[8]

One key assumption of our theory is that state media in China rarely, if at all, reports SCS's repressive potential. To provide supporting evidence for this government information control assumption, we collect about 650 scripts of TV news reports and news articles that contain "social credit" in their title or text from China's three most important state media outlets: the Chinese Central Television News Reports, the People's Daily, and the Global Times. We conduct sentiment analysis manually and find that only 2.9% of the scripts and articles have paragraphs or sentences on SCS that can be considered are negative. Moreover, most of the 16 unique negative articles only express concerns over local governments' overdoing of SCSs for social order maintenance (punishing jaywalking, unpaid parking fee, job turnovers, etc.). Only one article mentions a phase "credit deduction for illegal petitioning" that is related to political repression. The evidence suggests that Chinese state media indeed discusses SCSs in a very positive way and avoids revealing its political repression function.

[8]Interestingly, we also find that citizens' support for the SCS is positively associated with their tendency to avoid friends discredited by the SCS. This result holds after controlling individuals' credulity and risk preferences. Therefore, we tentatively interpret this relationship as caused by individuals' lack of information about repression under the SCS because staying away from low-credit peers deprived them the chance to discover measures of repression behind/associated with low credits. Moreover, we find that citizens with lower interpersonal trust support the SCS more, suggesting that they believe this tool can promote trustworthiness in society.

This paper contributes to a growing body of literature on state surveillance and repression. In the past two decades, the world has witnessed a rapid expansion of digital surveillance in dictatorships such as Russia (Haraszti et al. 2010, p. 27), Turkey (Çelik 2013), Egypt (Gohdes 2014, p.34), Bahrain (Marczak et al. 2014), and Syria (Gohdes 2014, p.91). Technologies such as spyware, metadata collection, digital cameras, facial recognition, and artificial intelligence have empowered dictators to identify demonstrators and political opponents for targeted repression (Gunitsky 2015; Xu 2020). While previous studies have examined the various impacts of digital surveillance on the state and society, we know much less about citizens' attitudes toward surveillance. This paper shows that citizens in dictatorships may actually support digital surveillance (e.g., the social credit system) when they know its social benefits but have limited information about its repressive potential. This information problem partially explains why in authoritarian countries digital surveillance has rapidly expanded without encountering much resistance from society.

Since the onset of the big data era, there has been voluminous literature on how data and Artificial Intelligence technologies transform people's economic, social, and political lives (e.g., Jones and Tonetti 2019; Liu 2018; Beraja, Yang and Yuchtman 2020). More recently, China's social credit systems have received considerable attention in both media and academia (e.g., Engelmann et al. 2019; Kostka 2019; Wang 2017). From a theoretical perspective, Tirole (2020) develops a comprehensive model to explore the good and evil aspects of social score systems. A particular insight from Tirole's model is that social score systems enable the state to leverage social sanctions to suppress dissent or force citizens to conform to its rules. Empirically, Kostka and Antoine (2020) find that citizens reported behavior changes in response to the SCS in China, suggesting that the SCS is a powerful tool of social engineering. This paper contributes to the literature by highlighting the invisible, low-profile repression that the SCS entails—another feature that would make the system an effective tool for repression.

The theory and evidence from this paper also speak to the literature on citizens' liberty-security trade-offs (e.g., Davis and Silver 2004). Recently, Conrad et al. (2018) show that American support for torture when it is directed at individuals whom they perceive as threatening. Dietrich and Crab-

tree (2019) suggest that citizens are willing to support the state violating their rights for the promise of greater security. Ziller and Helbling (2020) show that Europeans support state surveillance if it targets potential criminals and if a security threat is salient. A common argument in this literature is that citizens sacrifice freedom for security and thus support state coercion, especially when they do not consider themselves victims of state coercion. This paper adds to the existing literature in three important ways. First, it highlights that citizens may have insufficient information about the political costs of state coercion. Second, it finds that citizens decrease support for policies associated with state coercion even if the information revealed that *other* citizens (not themselves) suffer the political costs. Third, the evidence in this paper suggests that public opinion on state coercion is prone to state information control.

It is important to note that although repression practice through the SCS is evident among Chinese localities, the system has yet to become an Orwellian-style repressive tool. We do not advance that a big-data-enabled social scoring system inevitably leads to dystopic outcomes. Besides, conflicting interests among state agencies, data quality and standardization issues, and private firms' data protection may hamper the government's effort in developing a nationwide SCS in China. Moreover, we find that raising citizens' awareness of repression can substantially lower their support for the SCS, suggesting that the support is not very stable, and aggressively rolling out the SCS would cause citizen backlash. This implies that the central government may need to contain aggressive local practices. Nevertheless, if the government can carefully disguise the SCS's repressive function under its social benefits, the huge amount of information integrated by the SCS and its power in shaping citizen behavior will make it an effective tool of political control.

2 Theory and Hypotheses

Digital surveillance can be used to enforce social contracts in authoritarian societies. Unlike Western democracies where legal development involved legislatures and independent judiciaries that ultimately constrain executive discretion, authoritarian regimes are reluctant to create well-functioning legal infrastructure since an independent legal system likely makes the dictator worse-off (e.g., by threatening the dictator's privileges or raising the likelihood she will be replaced) (Liu

and Weingast 2020). Consequently, authoritarian societies struggle with incivilities, corruption, fraud, contract enforcement problems, high transaction costs, and widespread mistrust among citizens. Digital surveillance like the social credit system helps authoritarian governments gather information about the behavior of citizens, companies, and organizations to create a centralized platform that honors agreements, reports disputes, and adheres to the judgments of the courts. These are essentially the functions of contract enforcement institutions (Greif, Milgrom and Weingast 1994).

However, a coercive tool powerful enough to enforce social contracts can also be employed by the state to prey upon the citizenry (Tilly 1985). The threat of power abuse is particularly salient in dictatorships because authoritarian systems lack commitment mechanisms to constrain the dictator (North and Weingast 1989). Digital surveillance collects refined information about citizens, allowing the government to identify regime opponents. The platform that honors social agreements can be used to punish political opponents or dissidents. In authoritarian regimes where the dictator is constantly under threat from the disenfranchised masses but poorly informed due to citizens' preference falsification, a centralized platform for surveillance and contract enforcement will lead to political repression.

Political repression is the act of a state entity controlling a citizenry by force for political reasons (Davenport 2007). Traditional methods of repression such as crackdowns on protesters are costly to dictators. They undermine regime legitimacy, reduce citizen cooperation, and cause anti-regime backlash (Gerschewski 2013; Aytaç, Schiumerini and Stokes 2018). To mitigate the costs of repression, dictators around the world often conceal or legitimize the use of repression against citizens. For example, the authoritarian governments framed the bloody crackdowns of Rabiaa al-Adawiya Square in Egypt and Fergana Valley in Uzbekistan as counterterrorism actions to gain public support (Edel and Josua 2018).

The development of the SCS mitigates the negative consequences of repression. A social scoring system combines information collection and individualized punishment that allows the state to conduct targeted repression against individuals. To generate a social score for each citizen,

the system gathers detailed information from a variety of sources such as banks, courts, police departments, transportation bureaus, communities, commercial firms, and even social media platforms. The detailed information allows the government to identify regime opponents and conduct less visible, targeted repression than overt, indiscriminate repression. In addition, individualized punishments such as travel ban and bank loan restriction help the government efficiently repress individual dissidents. As we shall discuss in the next section, Chinese local governments use the SCS to restrict the actions of dissidents and political activists. The milder forms of repression entailed by the SCS are even less visible to the public than targeted physical repression that has been widely adopted to avoid citizen backlash in contemporary dictatorships (Way and Levitsky 2006).

The SCS's repressive potential is further disguised by its social-order-maintenance function. In dictatorships where citizens crave for contract enforcement, it is easy for the dictator to promote a "social credit" platform. The repressive potential of this platform is obscured by its social benefits and then further concealed by the dictator's deliberate information control and manipulation. A great number of authoritarian regimes conduct censorship (Gunitsky 2015); information that could stimulate collective actions, including news about targeted repression against political opponents, is often removed from the public sphere (King, Pan and Roberts 2013). With the implementation of the SCS, the government will certainly censor information related to targeted repression through the system. In addition, dictatorships employ propaganda to influence public opinion (Guriev and Treisman 2020). The government can frame the "social credit" system as a tool for maintaining social order and hide its repressive potential. As scholars show, framing significantly alters people's beliefs because individuals often base their opinions on available and accessible considerations without conscious deliberation (Chong and Druckman 2007). Thus, censorship and propaganda will make citizens even less informed about the repressive potential of the SCS.

Citizens' lack of knowledge regarding the SCS's repressive potential has important implications for public opinion toward the SCS. Citizens may support a coercive tool when it helps maintain social order but disapprove of it when it enhances the regime's political control. Whether they support the coercive tool depends on its social benefits against potential political costs. However,

studies of public opinion have long questioned citizens' competence in understanding complicated political discourse due to their limited information (Converse 1964). Citizens' attitudes toward a particular coercive tool are actually based on their "perceived" benefits and costs, which are subject to information constraints. Our key argument is that citizens in authoritarian regimes are unlikely to uncover the repressive potential of the SCS because repression under the SCS is largely invisible and is further affected by government propaganda and censorship. On the other hand, citizens are very much aware of the SCS's social-order-maintenance function as it is reflected by the name "social credit" and is intensively promoted by the media (Kostka 2019). Perceiving very low political costs but high social benefits, citizens thus strongly support the SCS in China.

To sum up, citizens in authoritarian regimes are well aware of the social benefits of the SCS but hardly know its repressive potential. Thus, they should be more sensitive to information about the SCS's repressive function than information concerning its social-order-maintenance function.

H1. *Revealing the SCS's repressive potential decreases citizens' support, but reminding its role in social-order maintenance should not further increase citizens' support.*

As discussed above, citizens' information problem about the SCS's repressive potential is exacerbated by government information control. This leads to the following prediction.

H2. *Citizens are more likely to support the SCS when their information about the system is obtained from state media outlets.*

3 Social Credit Systems in China

The Chinese government has long realized the potential of the SCS in steering citizen behavior. An early concept of the SCS emerged in 1991 as a government strategy to address problems in the financial sector (Liang et al. 2018). Later, several local governments initiated different local SCSs to experiment with various credit systems. In 2014, the State Council released the Planning Outline for the Construction of a Social Credit System. This plan outlines a legal and regulatory framework for implementing a national SCS by 2020. Despite the ambition of the 2014 plan, the SCS is still

under development. A national unified system has yet to be developed as of early 2021. Most local SCSs are still platforms where government agencies share data.

Nevertheless, the functions of local SCSs in China reach far beyond financial regulation.[9] After the release of the 2014 plan, local governments responded by devising pilot SCSs in their precincts. By 2018, 43 city governments had implemented SCS pilot programs with different practices (Figure 1). These government-run SCSs are intended to be mandatory for all citizens or targeted groups (Kostka and Antoine 2020). The criteria for "social credits" are based not only on the lawfulness, but also on the morality of citizens' actions, covering economic, social, and *political* conduct (Creemers 2018).

To steer the behavior of individuals, businesses, and organizations, local governments rely on redlists to reward "trustworthy" behavior and blacklists to punish "untrustworthy" or illegal behavior. Advanced algorithms for calculating social scores is not common among local governments. A few governments developed numerical scores such as the Osmanthus Score (Guihua) in Suzhou, the Western Chu Score (Xichu) in Suqian, and the Jasmine Score in Fuzhou. Some letter-type categories or codes are used for health regulation during the Covid-19 Pandemic. Potential punishment of the SCSs includes banning blacklisted individuals from flights, fast trains, hotels, good schools, government jobs, getting bank loans. Other mild punishments vary from throttling individuals' Internet speeds to releasing their names on billboards, government websites, or social media platforms for public shaming.

There is an ongoing debate concerning the motivations behind the Chinese government's promotion of social credit systems. Much of the Western media coverage and scholarly work on the SCSs are negative, criticizing the government's political motives and calling the SCSs a sign of "digital dystopia" with a potential for totalitarian control. But some scholars tend to view the SCSs as the government's effort in maintaining social order and building trust in society. Despite

[9]Several well-known commercial social credit systems (e.g., the Zhima Credit and Tencent Credit) were introduced by private firms to facilitate economic transactions following the China Central Bank's Notice on the Preparation of a Personal Credit Service.

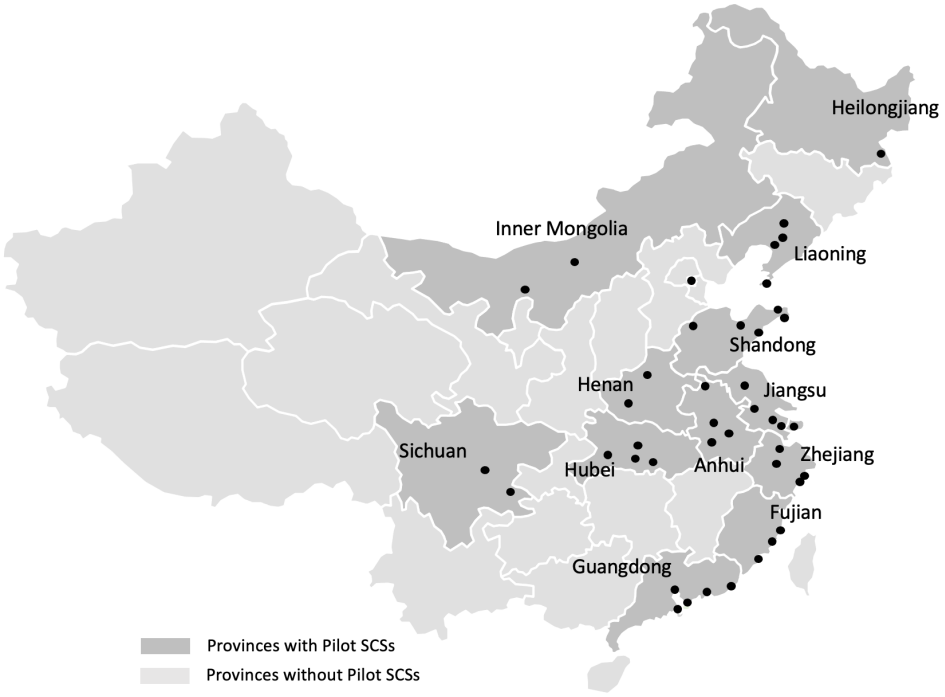

Figure 1: The Distribution of SCS Pilot Counties/Cities
Source: Chinese National Development and Reform Committee.

these competing views, scholars agree that Chinese society does have many trust issues, be it contract failures, unpaid debts, food safety scandals, pollution, corruption, or employers not paying their workers. The aforementioned 2014 plan has many parts that aim to construct government sincerity, commercial sincerity, social sincerity, and judicial credibility. If properly implemented, as suggested by Chorzempa, Triolo and Sacks (2018), the plan will raise governance transparency, foster trust in business and among citizens, as well as increase economic growth.

The 2014 plan and the early practices of the SCS suggest that the Chinese government indeed considered the SCS a tech-enabled solution to social problems in the face of weak institutions. Krause and Fischer (2020) discuss Chinese government's economic rationale for setting up the SCS. They argue that information transparency through the SCS reduces the risk inherent in choosing business partners and the joint punishments and rewards incentivize trustworthy behavior by increasing the costs of non-compliance, which can be regarded as add-ons to the currently rather weak legal system and fragmented government enforcement apparatus. Empirically, Engelmann

et al. (2019) analyze 194,829 behavioral records and 942 reports on citizens' behaviors published on the official Beijing SCS website and the national SCS platform "Credit China". They find that the government is using blacklists and redlists on online platforms to reward firms' honest behavior and punish untrustworthy behavior.

Although publicly released information focuses on the SCS's role in regulating financial and social behavior, observers have long expressed concerns over government abuse of the systems for political repression (Hoffman 2017; Liang et al. 2018; Jiang and Fu 2018). Even optimistic commentators such as Chorzempa, Triolo and Sacks (2018) warn that "based on China's record of regulating political speech and other activities, there is no doubt that it could also be abused for social control, prying into every aspect of Chinese citizens' lives and automatically punishing those who don't toe the party line." Thus, there are potentially two types of punishments by the SCS: 1) those associated with dishonest behaviors such as contract failures and unpaid debts; 2) those linked with dissidents and political activists. The Chinese government extensively exposes the first type on public blacklists (Engelmann et al. 2019), but it is much less upfront about the second type.

Nevertheless, information from the Western media and some Chinese local websites shows that the Chinese government soon realized the SCS's potential for political control after the launch of the 2014 plan. It uses the SCS to blacklist journalists and human rights lawyers who criticized the government (Wang 2017). Local governments also use local SCSs to repress protesters and petitioners. There are records of blacklisted petitioners on some local SCS websites.[10] Evidence suggests that repressing dissidents through local SCSs is common as many local governments have incorporated rules for punishing petitioners and protesters into their SCSs. By early 2019, at least 10 cities in different provinces (e.g., Zhejiang, Shandong, Jiangsu, and Fujian) have enacted such

[10]For example, the Yangzhou Government initially listed several petitioners on its social credit website, see http://cxyz.yangzhou.gov.cn/detail.do?contentId=ffcdee870364484fafb5e13951cbea54&channelId=sxhb, which can be found through Google Search but were removed from the index of the government's online blacklist.

rules.[11] In these localities, petitioners who fail to follow local governments' "procedures" will be stripped of social credits or even downgraded. Violations of "procedures" include petitioning near the site of big meetings at the central or local government level, pleading one's case in "sensitive areas" in Beijing, "making trouble" on the Internet, and contacting foreign media. Some local governments further include "Falungong", a religious practice that has long been repressed by the Chinese government, into the punishment scheme of their SCSs.[12] As the SCS is getting implemented widely in China, evidence of political repression under the SCS is paramount.

To many observers' surprise, the SCS enjoys a high level of domestic support in China. Opinion surveys find that almost 80% of respondents either somewhat approve or strongly approve the SCS (Kostka 2019). The following sections provide quantitative evidence on how citizens' information problem influences public opinion on the SCS in China.

4 Experimental Evidence

Our key argument is that citizens support the SCS because they understand its social-order-maintenance function but lack information about its repressive function. This implies that revealing the SCS's repressive potential in an experimental setting should reduce citizens' support for it, but showing its order-maintenance function should not further increase the support because the

[11] See, for example, the Rule for Managing Seriously Untrustworthy Petitioners through Social Credit issued by Zhenjiang Government at http://www.zjna.gov.cn/ycapp/nrglIndex.action?catalogID=4028d0dd4b4904ee014b529e75de02ae&type=2&messageID=297edff865b20bb20165b2fa1cb50054. Also see a similar rule in Rongcheng City from a news report (Gan 2019). Caixin News also reported seven more cities that have such rules, see "Many Cities Issued Documents to Punish Petitioners" at https://china.caixin.com/2019-09-12/101461655.html.

[12] See Rongcheng Municipal Measures on the Management of Members of Society's Credit Points and Credit Assessments at https://www.chinalawtranslate.com/en/rongeng-society-members-credit-scoring-and-credit-appraisal-management-measures/.

government has already done so in real life (H1). We use a field survey experiment to test this hypothesis.

4.1 Field Survey Experiment

Field Survey in Three Universities

Implementing surveys on sensitive topics is particularly difficult in China due to the government's tight control over the public sphere. In March 2019, we managed to conduct a college field survey among 750 students in three universities in East, North, and West China. We choose three regions to broaden sample representativeness. Figure 2 plots the sample distribution by students' home provinces. The fact that college students come from different provinces all over China further increases the regional representativeness of our sample.

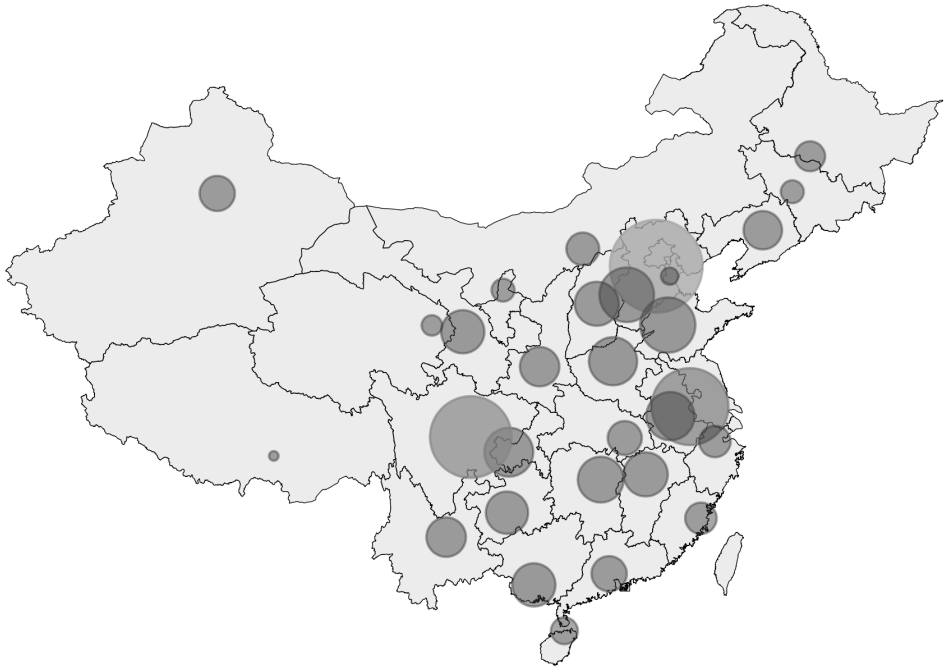

Figure 2: Sample Distribution by Respondents' Home Provinces

Among the three universities, two are top-ranked and one is ranked slightly lower. We choose elite college students because this demographic group best fits our purpose to examine the impact of information on support for SCSs. Elite college students in China are selected to be technologically savvy and intellectually curious. Besides, many of our study participants come from advantaged backgrounds with more knowledge about government policies and politics in China.

Thus, the students in our sample are likely to be more informed about the SCSs' *repressive potential* than other demographic groups even prior to the experimental intervention. Thus, if we find that revealing SCSs' repressive potential decreases support from the student sample, the effect would be larger for other Chinese citizens. Nonetheless, one should be cautious when generalizing our results to other demographic groups in China.

In this survey, we ask questions regarding the repressive nature of the SCSs, but the level of sensitivity is within the range of government tolerance because we use the information found in a progressive state newspaper. Conducting the survey experiment on a potentially sensitive topic in the field circumvents censorship that may be present in China-based online survey platforms. It also helps create trust and cooperation from respondents. More importantly, since we ask individuals' attitudes toward the repression of *online* criticism, respondents answering surveys online may self-censor to avoid state surveillance. An anonymous field survey avoids this problem because respondents answer questions on paper questionnaires that do not record any identifiable information. Section A.1 in the Online Appendix addresses ethical concerns in detail.

The enumerators surveyed in dining halls and main roads between classroom buildings and residential halls. For a convenience sample, respondents were recruited in those areas to represent the student population better than in dormitories or classrooms because all students come to dining halls and main roads regardless of their majors, genders, and grade levels. In addition, enumerators actively walked around all areas of the survey locations to increase sample representativeness.

Survey questionnaires require five to ten minutes to complete. Respondents were requested to complete the questionnaire independently to minimize potential spillover effects of the treatments. Each student received five Chinese Yuan (about 0.75 USD) as compensation for their time. The enumerators first asked students whether they were willing to participate in an *anonymous* survey, and, if they agreed, the enumerators then presented the five-Yuan compensation to them and gave them the questionnaires in random order. Roughly 50% of the students approached by enumerators agreed to participate. This response rate is within the normal range for a field survey. In addition, most of the non-respondents refused to participate even before the enumerators explained

the survey topic to them – their unwillingness to participate was thus not due to the content of the survey.[13] Thus, it is unlikely that the non-responses are related to potential outcomes that would bias our results.

Experimental Design

We employ a factorial design that randomly assigns respondents into the control condition or one of the three treatment conditions, each with a different framing of the SCS. In treatment scenarios, respondents may receive information about the SCS's roles in social order maintenance (i.e., punishing a drunk driver who caused traffic accidents), political repression (i.e., punishing a citizen who criticized the government), or both. In the control scenario, respondents receive no information about the role of the SCS. See Section A.2 in Online Appendix for more details about the treatment vignettes. Table A.3 in Online Appendix shows that randomization is successful and the four groups are well-balanced.

Table 1: Experimental Design for Attitude toward the SCS

	Group 1	Group 2	Group 3	Group 4
Assignment:	Control	Treated	Treated	Treated
Information Treatment:	No Information	Social Order Maintenance	Political Repression	Order & Repression
N:	203	164	198	181

This factorial design (Table 1) allows us to utilize the entire effective sample of 747 respondents for statistical analysis. Specifically, we estimate the following equation:

$$Y_i = \alpha + \delta\, order_i + \pi\, repression_i + \lambda\, order\,\&\, repression_i + \mu_u + \epsilon_{iu} \tag{1}$$

where Y_i indicates individual i's support for the SCS; $order_i$ is the information treatment regarding social order maintenance; $repression_i$ is the information treatment regarding political repression; $order.repression_i$ is the treatment with both types of information; α_u indicates university fixed effects.[14] We also compare means with two-sample T-Test and find similar results (Table B.3 in Online Appendix).

[13]The reasons include "no time", "hungry and need to have lunch", and "too busy".

[14]We also include controls as robustness checks, see Section 4.3 for more details. We use robust

4.2 Experimental Findings

Total Effects

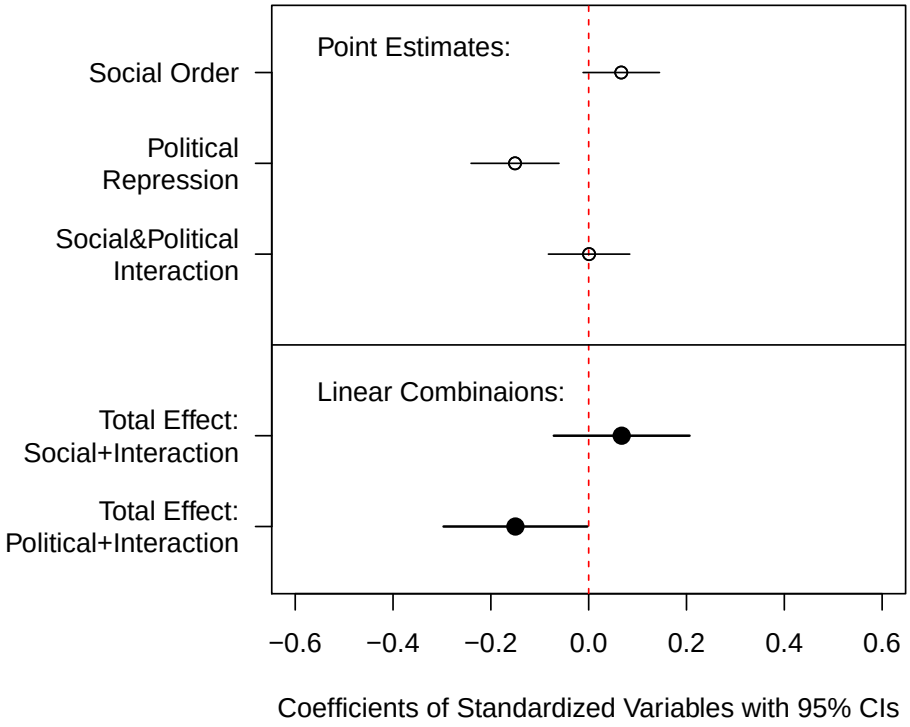

Figure 3: Information Treatment Effects: Full Sample

Note: The upper panel reports the main effects of the two treatments and the marginal effect between them. The lower panel reports the total effects: main effects plus the marginal effect. The effective number of observations is 737. (10 respondents did not answer the last page of the questionnaire. See Appendix A.2.3 for a discussion on nonresponse.)

Our theory suggests that revealing information about the SCS's role in political repression should decrease citizens' support, whereas framing it as a tool to maintain social order should not increase individuals' support. Evidence from Figure 3 is consistent with this prediction. The upper panel of Figure 3 reports the main effects of the two treatments and the marginal effect between them (i.e., the point estimates of Model 1). The lower panel reports the total effects of the two main treatments: main effects plus the marginal effect. Note that the total effect of the repression information treatment reflects the fact that half of the respondents received the social-

standard errors because treatments are randomized at the individual level. The results are similar when clustering on universities.

order information treatment, while the point estimate of repression information treatment indicates its effect on respondents who did not receive the social-order information treatment. The results show that reminding respondents of the SCS's role in maintaining social order has little impact on their support for the SCS, but revealing information about the SCS's role in political control largely reduces respondents' support for the SCS. Given that the average level of the support is 7.5 (out of 0–10), the repression information treatment substantially reduces individuals' support by 12%.

Heterogeneous Effects by Information Sources

To provide further evidence for the information mechanism we proposed, we examine the heterogeneous effects of information treatments among citizens who have different levels of information. If our information argument holds, this treatment will have a smaller effect on individuals who are better-informed about the SCS's repressive potential.

We use the sources where individuals obtain information about the SCS to construct a proxy for how informed they are. Individuals who obtain information from *only* state media outlets are considered less informed, while all other individuals are considered more informed. The reason is that Chinese state media rarely reports negative news about the SCS whereas other information sources such as social media and non-state media outlets occasionally reveal the SCS's repressive potential. Thus, if an individual only obtains information from state media, her knowledge about the SCS's repressive potential will be very limited.[15]

We identify 180 less-informed respondents and 557 more-informed respondents and then estimate Equation (1) on these two sub-samples respectively. The lower panel of Figure 4 shows that the repression information treatment has a negative and statistically significant *total effect* on individuals' support for repression in the state-media sample (less-informed). In contrast, the total effect of this treatment in the non-state-media sample (more informed) is much smaller and statis-

[15]Given its political sensitivity, we are unable to ask respondents direct factual questions about the SCS's repressive potential. The proxy we used has limitations and one should interpret the heterogeneous effect with caution.

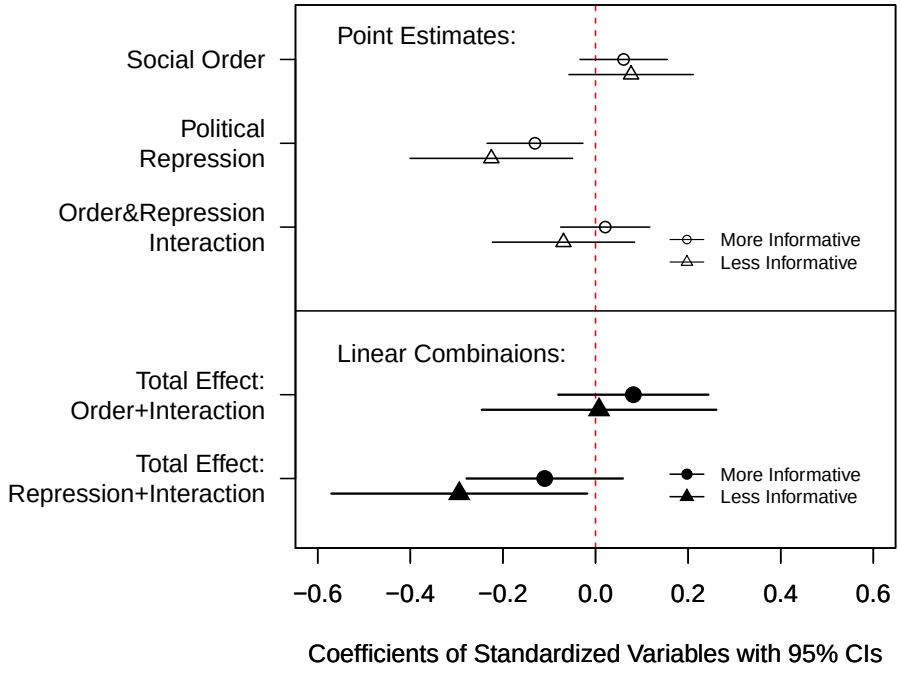

Figure 4: Information Treatment Effects, By Information Sources

Note: The circle points indicate the sub-sample of respondents obtaining SCS information from non-state media (i.e., more informed, 557 Obs.) while the triangle points represent the sub-sample of respondents obtaining SCS information from state media only (i.e., less informed, 180 Obs.). The upper panel reports the main effects of the two treatments and the marginal effect between them. The lower panel reports the total effects: main effects plus the marginal effect.

tically insignificant. The findings suggest that information about repression poses a greater shock to less-informed respondents, which provides further evidence for our information argument.

4.3 Discussion on the Experimental Findings

One may argue that citizens are probably aware of the SCS's repressive potential. They support the SCS because they underestimate the prevalence of government abuse. To challenge our findings further, one might also argue that the case of repressing online criticism in our treatment might make some of our subjects realize that the scope of SCS repression can be much broader in the real world: if a minor transgression like online criticism could be punished, the SCS would likely have been widely used to punish a variety of political actions, including more radical ones. But it should be noted that we use "*often* (经常) posting criticisms online to blemish the government's image"

in the treatment condition (Online Appendix A2.1). Unlike occasional criticism that many people might have done, frequent criticism is more like a radical action than a minor transgression. In addition, if this "online criticism" treatment reminds respondents of the prevalence of repression via the SCS, it will especially influence citizens who are more active in online criticism because they are the potential targets of such repression. In the survey, we asked the question "Do you often publicly comment on or re-post political events or trending news online?" We examine the heterogeneous effect of our "online criticism" treatment on active vs. non-active commentators and find little difference between these two groups. The evidence from this additional analysis suggests that issue prevalence is unlikely to be what drives the treatment effect. See Online Appendix B1.4 for a more detailed discussion on this alternative mechanism.

Another explanation for the effect of repression information is that people may simply dislike repression. But if citizens' distaste for repression were the only reason, we would not expect the repression information treatment to have a heterogeneous effect on individuals with different levels of information. As shown above, the repression information has a larger effect on less informed individuals (Figure 4). This suggests that citizens have limited information about the SCS's repressive function, though we cannot completely rule out the distaste-for-repression mechanism.

We further control for a number of other variables that could influence citizens' support for the SCS. As shown in Table B.1 in Online Appendix, the results remain robust after controlling for social distrust, self-reported social rule violations, family income, gender, age, and party membership. We also use individuals' support for government management of the SCS as an alternative measure for the outcome variable and find similar results (Table B.2 in Online Appendix).

One concern with survey experiments is that the treatment effects could be some short-run priming effects: the treatment scenarios suddenly increase the accessibility of some matters in memory while ignoring others (Chong and Druckman 2007). But if priming were the main reason behind the treatment effects, we would have found that priming the SCS's social-order-maintenance function increases people's support. The findings that repression information decreases support but social-order-maintenance information does not increase support is consistent

with the information mechanism we proposed, though we cannot fully rule out priming/framing effects. In the next section, we provide observational evidence for the long-term effects of information control on support for the SCS and broaden the scope of the experimental findings.

5 Evidence from Observational Data

In this section, we further explore the role of information in citizens' support for the SCS by focusing on two channels: government information control and citizens' tendency to isolate discredited peers. We use observational data from the college field survey and a nationwide online survey of over 2,000 Chinese netizens to broaden the scope of our experimental findings. We then conduct sentiment analysis on 646 SCS-related reports from state media outlets to show empirical support for a key assumption of our theory, that is, state media very rarely, if at all, reports the SCS in a negative way.

5.1 Two Surveys and Explanatory Variables

In addition to the survey experiment, we asked a series of questions related to social credit systems in the college field survey, which allow us to conduct observational studies. We further use a large-scale nationwide online survey with broader demographic representativeness to complement our college field survey. The online survey was conducted between February and April 2018 through a foreign-based survey company. The sampling process of the online survey accounted for the distributions of age, gender, and region of China's Internet-based population based on recent statistics from the International Data Base of the U.S. Census Bureau (2016), Pew Global Attitudes Survey (2015), and Statista (2016). See Section A.3 in Online Appendix for details about this nationwide survey.

We are interested in whether citizens' support for the SCS is influenced by state information control (H2). We fit OLS models with the two survey datasets to explore this relationship. We measure government information control as whether an individual obtains information about the SCS from state media because state media is the most important channel through which the Chinese government conducts propaganda and thought work (Brady 2009). This question also partially

captures government censorship because citizens who are exposed to censorship or conduct self-censorship are more likely to consume information from state media (Simonov and Rao 2018). In the college field survey, we specifically ask whether respondents obtained information about the SCS from *state* media outlets, including *state* TV channels, newspapers, websites, and the public accounts of state media outlets on social media platforms. In the nationwide online survey, we asked individuals from which information sources they knew about the SCS, including TVs, newspapers, social media, commercials, etc. We code TVs and newspapers as a proxy for state media because most TV channels and newspapers in China are state-owned.[16]

Although not discussed in the theory section, citizens' tendency to avoid low-score peers could exacerbate their information problem and lead to support for the SCS. This is because, as an individual stays away from low-credit peers, one will be less likely to question the reasons behind their low credits and hence less likely to know about the SCS's repressive potential. To measure respondents' tendency to avoid low-credit peers, we use the question "Imagine a good friend of yours has a sudden drop in their social credit score. Would you start to look at him/her differently?" We did not directly ask whether they are willing to avoid the friend because such wording would induce preference falsification. This question was only asked in the nationwide online survey.

Several other factors could also influence support for the SCS. As discussed in Section 2, citizens in dictatorships want to improve social trust and contract enforcement. If they consider the SCS a tool to enforce social contracts, we should expect that individuals with lower interpersonal trust are more likely to support the SCS. Besides, individuals may be more likely to support the SCS if they obey social rules and contribute to social goods. Thus, we ask several questions to capture individuals' social conformity and social services in the college field survey. Moreover, being a state employee or a communist party member may increase an individual's support for

[16]This question is conditional on respondents reporting the use of *commercial* SCSs (e.g., Tencent or Sesame SCSs). There are 1,469 commercial-SCS users out of total 2,027 respondents. For the main analysis, we code non-users into the non-state-media group. In Online Appendix B.3.2, we show that the results are robust when using a sample of 1,469 commercial-SCS users only.

government policies. Thus, we control for these two variables. We also include other controls such as age, education level, gender, income, and urban residence.

5.2 Observational Evidence on the Causes of Information Problem

Government Information Control

Our theory suggests that people's support for the SCS is associated with government information control, especially the positive framing of the SCS in state media. Figure 5 provides initial evidence using data from the college field survey. We standardize all variables to make coefficients comparable. As predicted, a one-standard-deviation increase in respondents' reliance on state media for information about the SCS increases support by 0.22 standard deviations and the effect is statistically significant even after we control for a number of covariates. This strong positive effect provides evidence consistent with the theoretical argument.

Individuals may support SCSs if they conform to social norms and contribute to public goods. But conformative and well-behaved individuals may be more prone to state propaganda. We control for these two variables to address this concern. Figure 5 shows that the main effect of state media remains robust even if we control for social conformity and social service.

Figure 6 provides further evidence from the nationwide online survey data. It shows that citizens who knew the SCS from TV and Newspaper are more likely to support it (by 0.07 standard deviations). The magnitude is smaller than that of the college field survey, likely due to the measure we used: we asked respondents where they obtained the information about *commercial* SCSs (e.g., Tencent or Sesame SCSs) instead of state-run SCSs. Besides, we use TV and newspaper as a proxy for state media. Nevertheless, the statistical significance suggests that government information control is an important reason behind public support for the SCS in China.

Tendency to Avoid Low-Score Peers

An interesting finding is a positive relationship between individuals' changing attitude toward friends with bad credits and support for the SCS (Figure 6). Figure 7 shows that, among 2,028 respondents, 66 percent of them will either look at the friend differently or hesitate to hold a positive attitude. Figure 6 shows that a one standard deviation increase in this measure increases

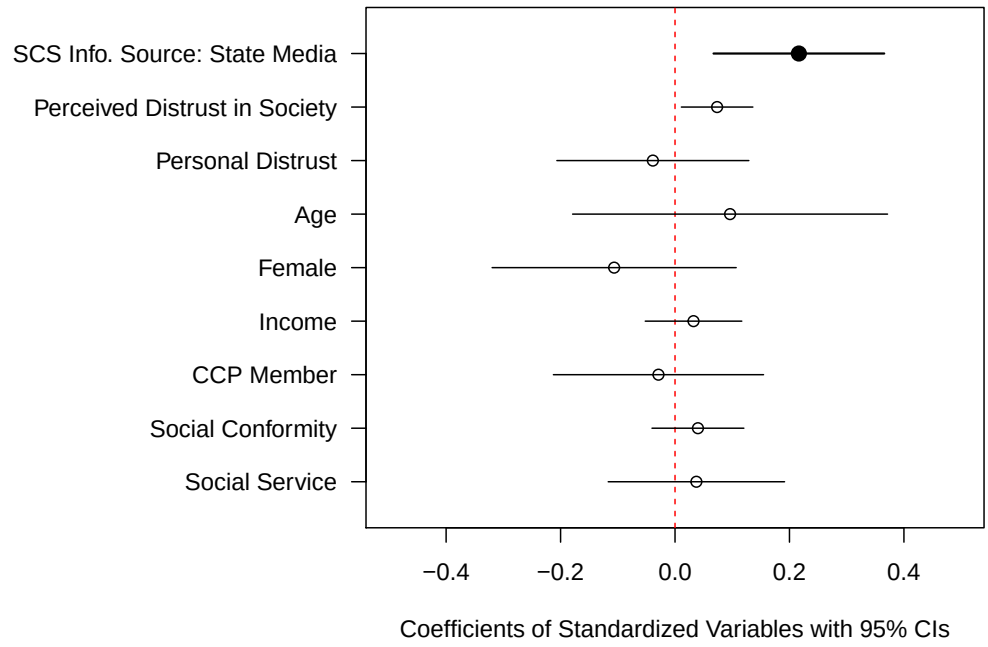

Figure 5: Sources of Support for SCSs: College Field Survey

Note: University fixed effects are included. Robust standard errors are clustered on universities. The effective number of observations is 665.

support for SCSs by 0.18 standard deviations and the effect is statistically significant.

Several factors would explain this relationship. First, more credulous individuals may be more likely to stay away from low-score peers and support the SCS. To capture credulity, we control for individuals' opinions about the fairness of social credit scores because more credulous individuals will be more likely to consider social credit scores fair. Second, individuals' risk preferences could explain the relationship between their tendency to avoid discredited friends and support for the SCS. Risk preference is the propensity to engage in behavior with the potential for loss or harm. Risk-averse individuals may be more willing to stay away from low-score peers and, meanwhile, care more about safety and hence support the SCS. We include a variable based on the question: "Have you ever decided to not use a website or app because you did not want to share personal information?". This privacy-related question captures individuals' propensity to take risks. However, we find that the relationship between avoiding friends with bad credits and

support for the SCS remains strongly positive and statistically significant even after controlling for these two variables (Column [2] and [3] in Online Appendix Table B.5).

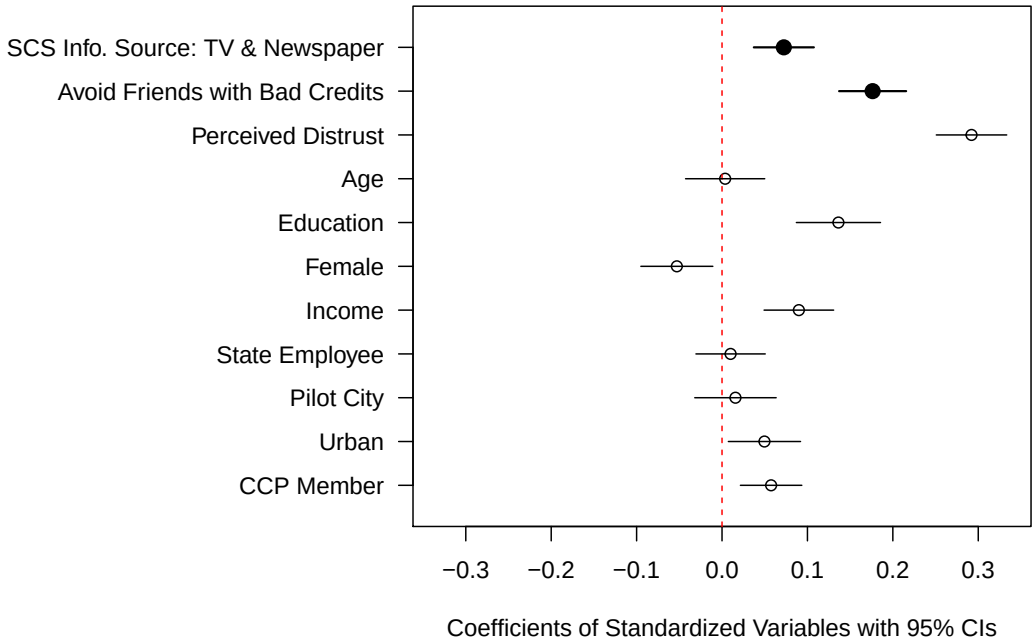

Figure 6: Sources of Support for SCSs: Nationwide Online Survey

Note: Region fixed effects are included. Robust standard errors are clustered on provinces. The effective number of observations is 1,895.

A social-scoring system discourages citizens from interacting with low-score individuals because bad "social credits" signal untrustworthiness and people have a natural tendency to avoid harm. Thus, when encountering a low-credit individual, citizens naturally stay away from her without questioning whether her score was reduced for political or non-political reasons. When a social rating system lumps citizens' dissenting acts and other behavior together under a unified score of trustworthiness, social sanctions against discredited citizens make it difficult to uncover political repression behind people's low scores. In China, millions of discredited citizens are blacklisted on websites, on billboards in public spaces, in social media apps, or even through their phone ringtones. Although a majority of the cases include reasons of punishment (e.g., unpaid debts), many cases are listed without specific reasons.[17] Besides, it is not unusual for the government to use

[17]See, for example, "2018 Feicheng Court's list of the twelfth batch of untrustworthy persons subject to enforcement" at https://www.sohu.com/a/242856352_687296

non-political reasons as disguises for political repression, as illustrated by the recent persecution of Ren Zhiqiang.[18] Thus, people with a higher tendency to avoid low-score peers are more supportive of the SCS likely because they are more prone to government information control. But one should interpret this relationship with caution because of the indirect measure.

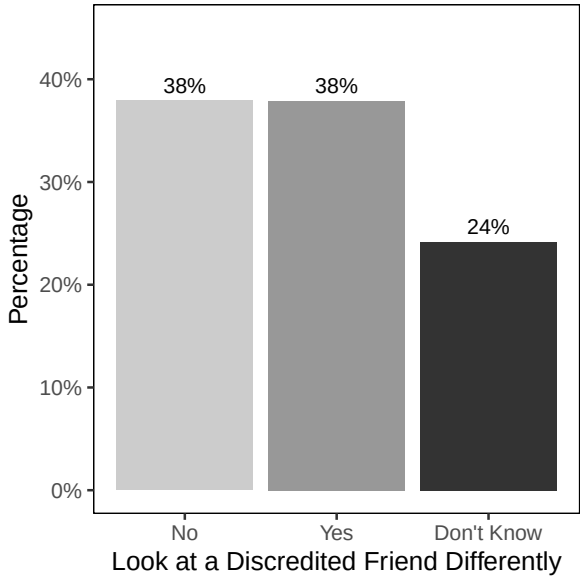

Figure 7: Attitude toward Friends with Bad Credits

Social Distrust

It is also worthwhile to mention the relationship between social distrust and support for the SCS. As shown in both surveys, social distrust is positively associated with support for the SCS. The college field survey shows a smaller effect because we asked a more specific question about social distrust: to what extent you believe that people take advantage of each other and violate social rules. Nevertheless, the results imply that citizens with lower trust support the SCS more because they believe this tool can promote trustworthiness in society.

5.3 Discussions on the Survey Findings

Social desirability bias poses a particular challenge to the study of the SCS because it might be socially desirable to consume state media, sanction discredited peers, and, meanwhile, support the

[18]See, "China's 'Big Cannon' Blasted Xi. Now He's Been Jailed for 18 Years." at https://www.nytimes.com/2020/09/22/world/asia/china-ren-zhiqiang-tycoon.html. New York Times, 2020.

SCS. To mitigate the potential influence of social desirability bias, we control for respondents' self-evaluation of social credits. The logic is that individuals with stronger social desirability bias will be more likely to rate themselves higher than the average. Column (2) in Table B.4 and Column (4) in Table B.5 in Online Appendix show that our main findings are robust when self-evaluation of social credits are controlled for.

Another concern is that the relationship between state media exposure and support for the SCS could be due to some unobserved personal traits. For example, obedient, insecure, and risk-averse citizens are more likely to consume state media and support the SCS. In the college field survey, we ask respondents how often they comment or repost political events or breaking news on the Internet. We control for this variable to account for individuals' risk preferences. Individuals' obedience can be measured by their willingness to petition an unfair policy proposed by the university authority. To capture insecurity, we asked respondents to what extent they believe others will take advantage of themselves when occasion serves. Table B.4 in Online Appendix shows that the effect of state media exposure is statistically significant even we control for these three variables.

In the nationwide online survey, we use citizens' reliance on TV and newspapers for information about the SCS to proxy government information control because most TV channels and newspapers are state-owned in China. However, it should be noted that the relationship between knowing the SCS from state media and support for the SCS is not causally identified. Citizens may self-select into consuming state media. Since education, living in an SCS pilot city, and CCP party membership are important predictors of using state media for information about the SCS,[19] we control for these variables, along with other individual characteristics, to address the self-selection problem. In addition, the impact of state media could be more than just a lack of information or censorship. In the theoretical section of the paper, we discuss the possibility of both censorship and propaganda (framing) effects. Although we cannot distinguish these two types of effect in the nationwide online survey, the experimental findings from the college field survey are consis-

[19]We find that citizens with higher education, communist party membership, or living in pilot cities are more likely to know the SCS from state media (Online Appendix B.3.1).

tent with our information argument. The experiment design also addresses the causal identification problem. Thus, it is the combination of both experimental and observational evidence that supports our argument about the role of information in public support for the SCS in China.

5.4 Evidence from State Media Texts

We argue that citizens lack information about the SCS's repressive potential partly because of the government's positive framing. To provide evidence that Chinese state media frames the SCS in a positive way and plays down its negative aspects, we collect scripts of TV news reports and newspaper articles that contain "social credit" in the title or text from the Chinese Central Television (CCTV) News Report, the People's Daily, and the Global Times. The CCTV News Report, or Xinwen Lianbo, is China's most-watched television news program, a nightly broadcast at 7 pm that typically lasts for 30 minutes. The People's Daily is the largest newspaper group in China. The paper is an official newspaper of the Central Committee of the Chinese Communist Party, published worldwide with a circulation of 3 million. The People's Daily and CCTV News Report are the two most official outlets of state media in China. The Global Times is under the auspices of the People's Daily, but it often publicizes information that is considered inappropriate to be included in the People's Daily and CCTV News. Thus, these three sources convey the most important voices of the Chinese government.

We obtain 50 CCTV news reports (available until 2018), 410 articles from People.cn (the online platform of People's Daily), and 186 articles from the Global Times. We use human-coded sentiment analysis to identify the tone of the articles (Table 2). We find that only 2.8% of articles are negative. The rest of the articles either praise the SCS's trust-building and social-order-maintenance functions (positive) or simply introduce facts about the SCS to the general public (neutral). Among the 16 negative articles (excluding 2 identical articles reported by different outlets), 11 articles express concerns over local governments' overdoing of SCSs' social-order-maintenance function (e.g, jaywalking, unpaid parking fee, frequent job turnovers), 3 articles raise privacy concerns, 1 article mentions the lack of remedies for people in social credit blacklists, and 1 Global Times article actually defends the SCS against Western criticism. Among the 11 arti-

cles concerning local governments' overdoing of SCSs, only 1 article mentioned a phase "credit deduction for illegal petitioning (闹访、缠访扣分)" that is related to political repression. This phrase is barely noticeable as the article mainly talks about local governments' overdoing of SCSs' social-order-maintenance function.

The evidence supports our assumption that Chinese state media discusses SCSs in a very positive way and avoid revealing its political repression function: even in the 2.8% of articles in which a negative tone can be detected, strictly speaking, only one article has one sentence that can be related to political repression.

Table 2: Human-Coded Sentiment Analysis

	CCTV	People's Daily	Global Times	Total	Percentage
Positive	20	239	114	373	57.7%
Negative	0	10	8	18	2.8%
Neutral	30	161	64	255	39.5%
Total	50	410	186	646	

6 Conclusion

China's social credit system was created to enforce contracts and maintain social order, but it has great potential for political repression given the huge amount of citizen information it integrates and the ease to punish violators by lowering their "social credits". This paper argues that public support for the SCS is partly due to citizens' lack of information concerning the SCS's repressive potential. This information problem is caused by the milder, less visible repression that the SCS entails and is exacerbated by government information control in dictatorships. Using a survey experiment, we show that respondents are not more supportive of the SCS when receiving information about its order-maintenance role but largely decrease their support when knowing its repressive function. Based on observational data from the same college survey and a nationwide online survey, we find that citizens are more likely to support the SCS when their knowledge about the SCS is from state media outlets. We further conduct text analysis of state media reports and show that the government portrays the SCS in a very positive way with little mention of its repressive function. The evidence together highlights the role of information control in public support

for the SCS in China.

The theory and findings have important implications for digital surveillance. They suggest that the government can hide the repressive potential of digital surveillance under its security-maintenance function to garner public support. This problem is more serious in dictatorships not only because of government propaganda and censorship but also because citizens in societies with underdeveloped legal systems crave for better enforcement of social contracts while a centralized information collection and enforcement platform like the SCS in China meets the demand. Nevertheless, an important takeaway from this paper is that public support for digital surveillance is not very stable in dictatorships.[20] As we illustrated in the college field survey experiment, a simple reminder of the SCS's repressive function can substantially reduce citizens' support. It is not easy for the government to recover the reduced support by showing the social benefits of digital surveillance because citizens have already been overwhelmed by the government's positive framing. Although potential backlash from citizens may not stop the government from expanding surveillance and repression, it imposes some costs on the government. Citizens' awareness of repression may also lead to preference falsification (Kuran 1991), rendering state surveillance ineffective. Thus, rational dictators would have an incentive to keep the level of repression low in order to maintain a well-functioning surveillance state.

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[20]For example, Suzhou city developed a "Civility Code" that regulates many aspects of citizens' lives such as garbage sorting, dining habits, and jaywalking. This aggressive system faced harsh criticism from the public and was soon taken down by the government. See, "A Chinese City Withdraws 'Civility Code' Following Online Criticism" at https://advox.globalvoices.org/2020/09/14/a-chinese-city-withdraws-civility-code-following-online-criticism/.

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Online Appendix

Information Control and Public Support for Social Credit Systems in China

Xu Xu, Genia Kostka, & Xun Cao

Contents

A Survey and Experimental Design

A.1 Ethical Considerations

We take extra caution to minimize potential risks to respondents, field staff, and the researchers. Both online and field surveys are anonymous. In the nationwide online survey, we avoid asking any sensitive questions to protect respondents and reduce self-censorship. The field survey is a five-minute opinion survey with minimal risk, which is granted an IRB exemption.[1] In particular, we take the following efforts to protect the rights and wellbeing of research participants and field staff during the college field survey.

First, we design our repression information treatment based on an article publicized by a progressive state media outlet, the Beijing News (Xinjingbao).[2] The Beijing News is co-founded by Guangming Daily and Nanfang Daily Group and is known for its willingness to test Chinese censors. The information from this progressive outlet was considered radical but tolerated by Chinese censors and thus should not involve political risks. Second, we state earlier in the questionnaire that our scenarios are hypothetical, which mitigates the potential risk of information revelation even if the information might change some students' beliefs. Third, we interviewed some of the respondents (for evaluating the questionnaire design), and they did not think the survey sensitive. Fourth, we use an online criticism of the government instead of radical political actions because online criticism is less sensitive, which is safer for respondents, field staff, and researchers. Fifth, in each university, we asked faculty members and students to proofread the questionnaire to make sure it did not incur any risk to respondents. Finally, the survey is anonymous and the enumerators were requested to stay away from respondents when respondents filled in the questionnaire. A questionnaire that does *not* collect personal information reduces the risk of a loss of confidentiality and any other risks related to individual identity. These strategies not only reduce potential risks to

[1] The exemption is granted by the Institutional Review Board (IRB) at Penn State University.

[2] See, "Credit Rating Should not Harm Citizens' Basic Rights" (in Chinese): http://www.bjnews.com.cn/opinion/2014/06/20/321658.html, last accessed March 17, 2021. This article mentions that the SCS punishes "petitioning and public tip-offs on the Internet (上访和网络举报)". The article has not been taken down from the Beijing News website.

respondents but also minimize respondents' social desirability bias and self-censorship during the survey.

A.2 In-the-field Survey Experiment

A.2.1 Randomization and Treatments

Respondents were randomly assigned to one control group and three treatment groups. Due to the relatively small sample size, we use block random assignment to reduce potential imbalance among groups. The easily identifiable variables that could predict public support of government coercion are gender and region (Conrad et al. 2018). Thus, we partition the subjects into 6 blocks (two gender groups by three regions/universities) and randomize within each block.

Note that if the severity of violations and the associated punishments are different between the social order treatment and the political repression treatment, the treatment effects may not capture differences in information revelation but reflect the differences in the severity of violations and punishments. To address this concern, we fix the level of punishment for both treatment conditions and make the severity of violations as similar as possible between treatments. Table A.1 shows the vignettes of the control and treatment scenarios.

A.2.2 Main Measures

To measure respondents' opinion toward the SCS, we ask them to what extent they support the SCS on a 0-10 scale, and whether the SCS should be managed by the government or third-party organizations. We also ask where respondents obtained information about the SCSs, such as state media, non-state media, commercials, self-experience, and/or friends. This question allows us to examine the relationship between government information control and support of the SCS. In addition, scholars argue that the public may support a coercive tool if they are not victims but beneficiaries of state coercion. We ask respondents to guess their future social credit levels if a nationwide SCS were about to take place. This measure captures to what extent they believe they will be victims of the SCS. It also captures individuals' social-desirability bias because a higher

Table A.1: Control and Treatment Scenarios

Control Scenario: No Information

Many public spaces install facial recolonization and ID scanning devices; there are also surveillance cameras everywhere. It is very easy to record citizens' good or bad behaviors. In addition, a number of city governments are piloting Social Credit Systems that assess citizens' behavior. SCS scores can influence citizens' transportation options, school entrance, employment, social security policies, and bank mortgage application, etc. Do you disapprove or approve of this trend of management?
现在很多地方都需要刷脸认证，比如火车站，飞机场，汽车站等；街道上也随处可见监控摄像头。居民的良好和不良行为很容易记录。而且目前我国不少城市的政府都正在创建社会信用体系试点，给居民的行为打分，分数会影响到居民的交通出行，入学、就业、社保、银行贷款等诸多方面。你是反对还是支持这样一种管理发展趋势？（请选择反对或支持程度）

Treatment 1: Social Order Maintenance Information

... application, etc. *Recently, one citizen in an eastern city drove drunk and caused chain-reaction accidents (though no one was hurt).*[a] *Being downgraded in social credits, this person is banned from buying air tickets or hopping on high-speed trains. Now this person can only travel by bus or slow train.* Do you disapprove...
.....等诸多方面。比如不久前东部某试点市一位居民醉酒驾车、超速并导致连环车祸（虽无人受伤）。该居民社会信用等级被降低，以至于被禁止购买飞机票和高铁票，只能乘坐大巴和普通列车出行。你是反对.....

[a]We use "an eastern city" because East China is known for its advancement in developing social credit systems.

Treatment 2: Political Repression Information

... application, etc. *Recently, one citizen in an eastern city often posted criticisms online to blemish the government's image. Being downgraded in social credits, this person is banned from buying air tickets or hopping on high-speed trains. Now this person can only travel by bus or slow train.* Do you disapprove...
.....等诸多方面。比如不久前东部某试点市一位居民由于经常在网上发帖损害政府形象。该居民社会信用等级被降低，以至于被禁止购买飞机票和高铁票，只能乘坐大巴和普通列车出行。你是反对.....

Treatment 3: Order and Repression Information

... application, etc. *Recently, one citizen in an eastern city drove drunk and caused chain-reaction accidents (though no one was hurt). Another citizen in an eastern city often posted criticisms online to blemish the government's image. Being downgraded in social credits, these two citizens are banned from buying air tickets or hopping on high-speed trains. Now they can only travel by bus or slow train.* Do you disapprove...
.....等诸多方面。比如不久前东部某试点市一位居民醉酒驾车、超速并导致连环车祸（虽无人受伤），而另一位居民经常在网上发帖损害政府形象。这两位居民的社会信用等级都被降低，以至于被禁止购买飞机票和高铁票，只能乘坐大巴和普通列车出行。你是反对.....

score is socially desirable.

A.2.3 Nonresponse Rate

Nonresponse after randomization may induce biases to estimation. Information about sensitive topics like the SCS's repressive function often leads to nonresponse. But this is not a serious concern in our college field survey because only 10 out of 747 respondents did not complete the questionnaire (participants were notified that they are free to drop from the survey at any time, and the nonresponse rate is only 0.013). Table A.2 further shows nonresponse rates by control and treatment groups. Among the four groups, the two treatment groups that reveal repression information have larger numbers of non-responses (n = 5 and 3 respectively) than the control group (n = 1) and the social-order information treatment group (n = 1). But the low nonresponse rates in these groups indicate that potential biases are negligible. Besides, respondents who saw the SCS's repressive potential but refused to talk about it due to sensitivity concerns would have exhibited lower support had they answered the question. In other words, the biases caused by nonresponse, if any, will lead to an underestimation of the repression treatment effect. Thus, nonresponse is not very likely to be a concern here.

Table A.2: Nonresponse Rate by Group

	Control	Social	Political	Social & Political
N of Obs.	204	164	198	181
N of Nonresponses	1	1	5	3
Nonresponse Rate	0.005	0.006	0.025	0.017

A.3 Nationwide Online Survey

We use a nationwide online survey with broader demographic representativeness to complement our college field survey. The online survey was conducted between February and April 2018 through a foreign-based survey company. The survey company collaborates with Chinese companies that operate websites and apps to conduct the survey online through desktops and mobile applications. The participants were randomly selected from a user base of more than 350,000 Chinese netizens who use over 40,000 different apps and mobile websites, such as Line (a messaging app with 220 million active users worldwide), Design Home (an app to simulate home decoration),

Coin Dozer (a gaming app), and TVSmiles (an app for quizzes and prizes to win). The survey was displayed on app offer walls or website pages that provide users a list of actions or opportunities to complete to get rewards. Depending on the apps and websites, users were offered different, small monetary or nonmonetary rewards, including access to premium content (e.g., news articles), virtual rewards (e.g., extra time in games), gift cards, vouchers, charitable donations, and PayPal cash. Using a variety of rewards allows the survey company to reach a broad population with different preferences and demographic features.

The survey uses a blind opt-in recruitment strategy to enlarge the representativeness of the sample: users were offered to take part in a survey, but they did not know the topic of the survey before opting in. The questions are not sensitive at all in this survey because we want to reach a population as representative as possible. When the survey content is displayed, participants are notified that they can choose to drop from the survey at any time and completion of the survey constitutes consent. In total, 64% of opt-in respondents completed the survey. Survey responses were considered invalid if respondents completed them in a very short period of time with several consecutive identical answers or inconsistent responses. After excluding invalid responses, we have a total sample of 2,027 Chinese netizens.

The sampling process accounted for the distributions of age, gender, and region of China's Internet-based population based on recent statistics from the International Data Base of the U.S. Census Bureau (2016), Pew Global Attitudes Survey (2015), and Statista (2016). Further, to represent the demographic characteristics of the census, a weight is created using age, gender, region, and demographic groups' Internet penetration based on the aforementioned surveys and censuses. Taking into account an estimate of the design effect based on the distribution of the weights, the overall margin of error for estimates is 2.22%.

A.4 Summary Statistics

Table A.3 reports the summary statistics of the nationwide online survey.

With respect to the experiment in the college field survey, Table A.4 reports the covariate

Table A.3: Summary Statistics (Nationwide Online Survey)

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Credit Systems Approval	2,027	4.29	0.81	1	4	5	5
Perceived Distrust	2,027	4.16	0.92	1	4	5	5
Avoid Friends with Bad Social Credits	2,027	0.38	0.49	0	0	1	1
SCS Info: TV/Newspaper	2,027	0.17	0.37	0	0	0	1
SCS Info: TV/Newspaper (Tencent/Sesame)	1,469	0.23	0.42	0	0	0	1
Female	2,027	0.42	0.49	0	0	1	1
Age	2,027	30.62	8.91	18	24	36	64
Income	1,994	3.34	1.10	1	3	4	5
Education	1,977	3.64	0.69	1	4	4	4
Urban/Rural Residence	2,027	0.84	0.37	0	1	1	1
CCP Member	2,027	0.22	0.42	0	0	0	1
Public Employment	1,990	0.34	0.47	0	0	1	1
Living in Pilot City	2,002	0.47	0.50	0	0	1	1
Credit Decision Influence	2,027	0.74	0.44	0	0	1	1
Confidence in the Government	2,027	3.30	0.74	1	3	4	4
Credit Score Fairness	1,224	3.33	0.60	1	3	4	4
Privacy	2,027	1.71	0.64	1	1	2	3

balance among control and treatment groups based on a number of individual characteristics and attitudes, including age, gender, family income, income satisfaction, party affiliation, membership in official university organizations, membership in student societies, community service, interest in discussing politics, media consumption, social distrust, online expression. As shown in Table A.4, randomization is successful, and the covariates are balanced among all groups.

Table A.4: Balance Check (College Field Survey)

	obs.	Control	Social	Political	Social&Political	p-value
Age	704	21.42	21.43	21.03	21.16	0.314
Female (F=1)	741	0.50	0.48	0.54	0.48	0.632
Income (1-9)	737	6.85	6.59	6.83	6.79	0.469
Income Sat. (0-10)	746	6.73	6.73	6.72	7.04	0.491
Party (Yes=1)	746	0.16	0.17	0.17	0.12	0.540
Official Organization (Yes=1)	747	0.48	0.45	0.51	0.47	0.721
Student Organization (Yes=1)	746	0.61	0.62	0.63	0.62	0.961
Community Service (1-5)	739	2.51	2.48	2.49	2.53	0.967
Speech (1-5)	737	3.13	3.12	3.18	3.14	0.923
Media: News (1-5)	725	2.04	2.09	2.15	2.10	0.624
Media: TV (1-5)	729	2.97	3.10	2.90	3.00	0.340
Media: Phone (1-5)	738	4.75	4.74	4.66	4.72	0.393
Distrust (0-10)	737	4.35	4.03	3.94	4.29	0.434
Discuss Politics (1-5)	737	2.28	2.18	2.25	2.16	0.564

B Empirical Results

B.1 Field Survey Experiment

B.1.1 Support for the SCS: Additional Controls

Table B.1 shows the results of the experiments with additional controls. Because the treatments are randomized at the individual level, we use robust standard errors for all model specifications. The results show that the effect of repression information on respondents' support for the SCS is strong and statistically significant even if we control for a variety of variables (Column 4). Note that the *SCS Info: State Media* variable is generated from a question asking respondents' sources of information. This variable is also used to identify the State Information sample (Columns 2 and 5) and Non-state Information sample (Columns 3 and 6). Thus, this *SCS Info: State Media* variable is excluded from the models in Column (5) and Column (6).

B.1.2 Support for Government Management of the SCS

We further explore the effects of the information treatments on individuals' support for the government to manage the SCS. Table B.2 shows that the results are largely similar to those using support for the SCS as the outcome variable. In general, revealing the SCS's repressive potential decreases individuals' support for the government to manage the system, and the negative effect is stronger on less informed individuals. Interestingly, revealing information about the SCS's social order maintenance function slightly decreases individuals' support for government management, although the effect is not statistically significant. This may imply that citizens have concerns over government power abuse, even though the intention of the punishment is good.

Table B.1: Information Revelation and Support for the SCS: Experimental Evidence

VARIABLES	(1) Full Sample Support	(2) State Info Support	(3) NonSt Info Support	(4) Full Sample Support	(5) State Info Support	(6) NonSt Info Support
Social Order	0.400*	0.462	0.364	0.354	0.213	0.379
	(0.239)	(0.409)	(0.288)	(0.238)	(0.391)	(0.294)
Political Repression	-0.848***	-1.267**	-0.736**	-0.809***	-1.329***	-0.742**
	(0.258)	(0.501)	(0.297)	(0.267)	(0.497)	(0.316)
Social & Political	0.005	-0.403	0.122	-0.015	-0.354	0.077
	(0.247)	(0.453)	(0.285)	(0.256)	(0.452)	(0.307)
SCS Info: State Media				0.522***		
				(0.101)		
Distrust in Society				0.218*	0.235	0.217
				(0.118)	(0.214)	(0.138)
Personal Distrust				-0.147	-0.088	-0.162
				(0.122)	(0.219)	(0.143)
Age				0.087	0.029	0.117*
				(0.054)	(0.078)	(0.067)
Female				-0.498***	-0.897**	-0.295
				(0.182)	(0.353)	(0.219)
Income				0.062	-0.081	0.137**
				(0.053)	(0.091)	(0.063)
CCP Member				-0.182	-0.067	-0.395
				(0.312)	(0.509)	(0.366)
Social Conformity				0.100	-0.047	0.168
				(0.088)	(0.146)	(0.103)
Social Service				0.209	-0.490	0.577**
				(0.201)	(0.341)	(0.246)
University FEs	Yes	Yes	Yes	Yes	Yes	Yes
Constant	7.768***	7.922***	7.696***	5.053***	8.886***	3.169*
	(0.213)	(0.436)	(0.243)	(1.371)	(2.138)	(1.676)
Observations	737	180	557	670	159	511
R-squared	0.038	0.082	0.036	0.102	0.171	0.066
Total Effects (Linear Combinations):						
Social + Interaction	0.405	0.058	0.487	0.340	-0.141	0.456
	(0.419)	(0 .763)	(0 .489)	(0.425)	(0.735)	(0.516)
Political + Interaction	-0.843**	-1.670**	-0.614	-0.824**	-1.683**	-0.665
	(0.429)	(0.806)	(0.493)	(0.440)	(0.789)	(0.525)

Robust standard errors are in parentheses. Variable values are in their original scale. Columns (1) and (4) report the results from the full sample. Columns (2) and (5) report the results from a subsample of respondents who obtained information about the SCS from state media only (less informed group). Columns (3) and (6) report the results from a subsample of respondents who obtained information about the SCS from non-state sources (more informed group).
*** p<0.01, ** p<0.05, * p<0.1

Table B.2: Information Revelation and Support for Government Managing the SCS

VARIABLES	(1) Full Sample Gov Mgmt	(2) State Info Gov Mgmt	(3) NonSt Info Gov Mgmt	(4) Full Sample Gov Mgmt	(5) State Info Gov Mgmt	(6) NonSt Info Gov Mgmt
Social Order	-0.083	-0.088	-0.112	-0.070	-0.047	-0.120
	(0.138)	(0.278)	(0.160)	(0.146)	(0.320)	(0.167)
Political Repression	-0.351***	-0.606**	-0.287*	-0.285**	-0.544*	-0.249
	(0.131)	(0.291)	(0.148)	(0.140)	(0.318)	(0.158)
Social & Political	-0.002	-0.249	0.061	0.038	-0.359	0.101
	(0.136)	(0.287)	(0.155)	(0.145)	(0.319)	(0.164)
SCS Info: State Media				0.258**		
				(0.111)		
Distrust in Society				-0.024	-0.054	-0.013
				(0.022)	(0.050)	(0.025)
Personal Distrust				-0.000	0.057	-0.016
				(0.029)	(0.060)	(0.033)
Age				-0.060**	-0.030	-0.067**
				(0.028)	(0.059)	(0.032)
Female				-0.237**	-0.193	-0.196*
				(0.104)	(0.227)	(0.119)
Income				-0.039	0.059	-0.057
				(0.031)	(0.070)	(0.036)
CCP Member				0.144	0.407	0.051
				(0.156)	(0.335)	(0.176)
Social Conformity				0.024	0.081	0.014
				(0.050)	(0.100)	(0.059)
Social Service				0.087	0.054	0.129
				(0.107)	(0.228)	(0.122)
University FEs	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.242**	0.371*	0.195	1.764**	0.271	2.214**
	(0.113)	(0.220)	(0.133)	(0.762)	(1.591)	(0.877)
Observations	735	180	555	669	159	510

Robust standard errors are in parentheses. Variable values are in their original scale. Columns (1) and (4) report the results from the full sample. Columns (2) and (5) report the results from a subsample of respondents who obtained information about the SCS from state media only (less informed group). Columns (3) and (6) report the results from a subsample of respondents who obtained information about the SCS from non-state sources (more informed group).
*** p<0.01, ** p<0.05, * p<0.1

B.1.3 Information vs. Framing Effects

One concern with any survey experiments is that the treatment effects could be some short-run framing/priming effects: the treatment scenarios suddenly increase the accessibility of some matters in memory while making respondents ignore other matters (Chong and Druckman 2007).

To be more specific, framing effects on an individual's opinion are best understood with a conventional expectancy-value model (Azjen 1980; Chong and Druckman 2007; Nelson and Oxley 1999). In this model, every object, such as an issue, event, or policy, has i attributes. An individual's attitude consists of the sum of the product of his/her evaluation of each attribute i and the salience weight of each attribute i. In the case of attitude toward the SCS, $Attitude_{SCS} = w_s v_s - w_p v_p$, where v_s is the evaluation of the SCS's social benefits, v_p is the evaluation of the political risk associated with the SCS, and w_s and w_p ($w_s + w_p = 1$) are the salience weights associated with social benefits and political risk respectively. In this model, framing works by changing the salience weights of attributes (Chong and Druckman 2007), which means citizens know the political costs of the SCS but put less weight on this attribute and more weight on social benefits because of government propaganda. In contrast, information works by changing the evaluation of attributes—if a citizen knows little that the SCS can be used for political repression, she will attribute a small or zero v_p.

We don't have a direct measure to gauge citizens' knowledge about the SCS's political costs. However, in the online survey, we asked Tencent and Sesame users if they know how their social credit score is calculated. Among 1,469 respondents, only 197 (13%) of them answered "Yes, I know a lot about it". A large majority of respondents (1272) either "know a little about it" (50%) or "don't know how it is calculated" (37%). Although this measure is far from ideal, we can see that most citizens do not know much about how SCSs works. Evidence from our 16 interviews conducted in 2018 also confirms this lack of information among Chinese citizens. In addition, we asked respondents in the online survey if they think their credit score is calculated fairly. Only 80 out of 1,469 respondents think the credit score is unfair. If they knew SCS's repressive nature, this number would be much larger because few citizens would consider a repressive tool fair. Thus,

if most citizens don't know much about SCSs' political costs, the treatment effect we observed is more likely a result of lack of information than a result of framing in our treatment snippet.

To sum up, we believe information plays an important role in citizens' support for the SCS. But we acknowledge that we cannot fully distinguish between framing effects and information effects through our repression information treatment (especially for people who know a lot about the SCS).

B.1.4 Prevalence of Repression via the SCS

Another concern is that our "online criticism" treatment may imply the prevalence of political repression via the SCS. The logic is that, if a minor transgression like online criticism can be punished, the SCS is very likely to cover more radical political actions as well.

However, to infer this logic, the subjects in the experiment need to be quite sophisticated: ones who are able to realize that if online criticism can be published, so must be other equally or more radical political actions, therefore SCS's repression might be more prevalent that one thought before. In other words, they need to be able to realize and to some extent believe in the fact that online criticism is the tip of the iceberg for things that can trigger government repression. Since most of our respondents completed the survey on roads or in dining halls and usually spent about 5 minutes on it, it is likely that they answered the questions more by instinct than by the aforementioned sophisticated thinking process.

In addition, it should be noted that we use "*often* (经常) posting criticisms online to blemish the government's image" in the treatment condition (Online Appendix A2). Unlike occasional criticism that many people might have done, frequent criticism is more like a radical action than a minor transgression.

Moreover, if this "online criticism" treatment reminds respondents of the prevalence of repression via the SCS, it will especially influence citizens who might be engaging or associated with more radical political actions because they are the potential targets of such repression via the SCS: therefore, all else equal, such more politically at=risk citizens should be more affected by the infor-

mation treatment than other citizens if issue salience is a major mechanism. Based on our survey questions, we use the group of respondents who talk more about politics online (compared to those who do not frequently comment on politics) as a proxy group for more politically at-risk citizens. Again, if issue salience is an important mechanism driving our information treatment, a citizen who is more likely to be associated with more radical political actions will reduce his/her support for SCSs more than someone who is unlikely to be associated with radical political actions, even though both have been reminded of SCS's repression on more radical political actions.

One complication here is that our more politically at-risk citizens—measured as people who talk more politics online—might respond more to our treatment simply because our treatment is phrased around online criticism of the government which can remind them of the danger of their online comments. Therefore, if we empirically find that more politically at-risk citizens, operationalized as people who make more online comments about politics, are associated with a stronger treatment effect, it could be a function of the issue salience mechanism suggested by the reviewer and/or a simple reminder of the danger of their online political comments: we cannot empirical separate these two mechanisms in this situation. However, if we find that more politically at-risk citizens are NOT associated with a stronger treatment effect, then neither mechanism is likely to explain our treatment effect.

In the survey, we asked the question "Do you often publicly comment on or repost political events or trending news online?" The answers order from "1. Never", "2. Seldom", "3. Sometimes", and "4. often" to "5. very frequently". We code respondents who answered "Sometimes", "Often", and "Very Frequently" as active online commentators (a proxy for more politically at-risk citizens) and then examine the heterogeneous effect of the "online criticism" treatment on active vs. non-active commentators. As Figure B.1 shows, there is not much difference between these two groups. If any, the treatment has a slightly smaller effect on respondents who actively comment on politics on the Internet. The evidence from this additional analysis therefore suggests that issue salience (as well as the reminder effect discussed in the last paragraph) is unlikely to be what drives our treatment effect.

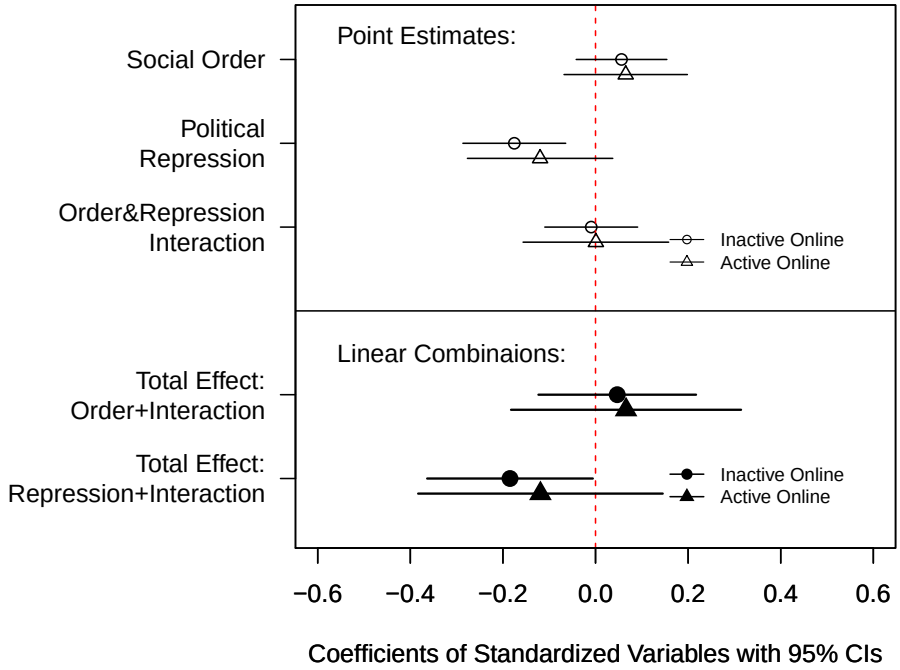

Figure B.1: Information Treatment Effects, By Information Sources

Note: The upper panel reports the main effects of two treatments and the marginal effect between them. The lower panel reports the total effects: main effects plus the marginal effect.

Nevertheless, we cannot fully rule out this issue salience explanation. Ideally, the solution would be to use "more radical political actions" instead of "online criticism" as the treatment, but this is not feasible because (1) we need to protect subjects as we said in Appendix Page 1, and (2) implementing such an experiment is difficult if not possible in China.

B.1.5 Mean Comparisons with T-Tests

Table B.3 reports the unconditional mean comparisons for the two-by-two factorial experimental design. The results are similar to the regression results in Table B.1. Revealing the SCS's social-order-maintenance function alone does not increase individuals' support but showing its repressive potential significantly reduces people's support. Note that the overall effect of social order information is positive and statistically significant. This is probably because showing repression information alone has a stronger effect than showing information about both social-order-

maintenance and repression. Nevertheless, the conditional mean comparisons in Table B.1 control for university fixed effects and other variables, which are more reliable than the unconditional mean comparisons in Table B.3.

Table B.3: Group Mean Comparisons with Two-Sample T-Tests

	No Info.	**Repression**	**Overall**	**Repression vs. No Info (P-Value)**
No Info.	7.60 [203]	6.77 [193]	7.19 [396]	-0.83 (0.001***)
Order	7.98 [163]	7.6 [178]	7.79 [341]	
Overall	7.77 [366]	7.16 [370]		-0.61 (0.001***)
Order vs. No Info (P-Value)	0.38 (0.117)		0.59 (0.001***)	

B.1.6 Excluding International Students and Insincere Survey Takers

In the main analysis of the experimental data, we keep all respondents because randomization occurred before respondents completed the survey. However, we have three respondents from abroad (Russia, Cambodia, and Taiwan) who did not tell us they are international students before the survey. Four respondents did not pass our attention check question. One respondent specifically wrote on the questionnaire that he is "against the machine (反机器)" so that he gave very negative answers to SCS-related questions. Thus, we exclude these eight respondents from the sample and rerun the analysis for a robustness check. Figure B.2 shows that the results remain the same as those from the full sample.

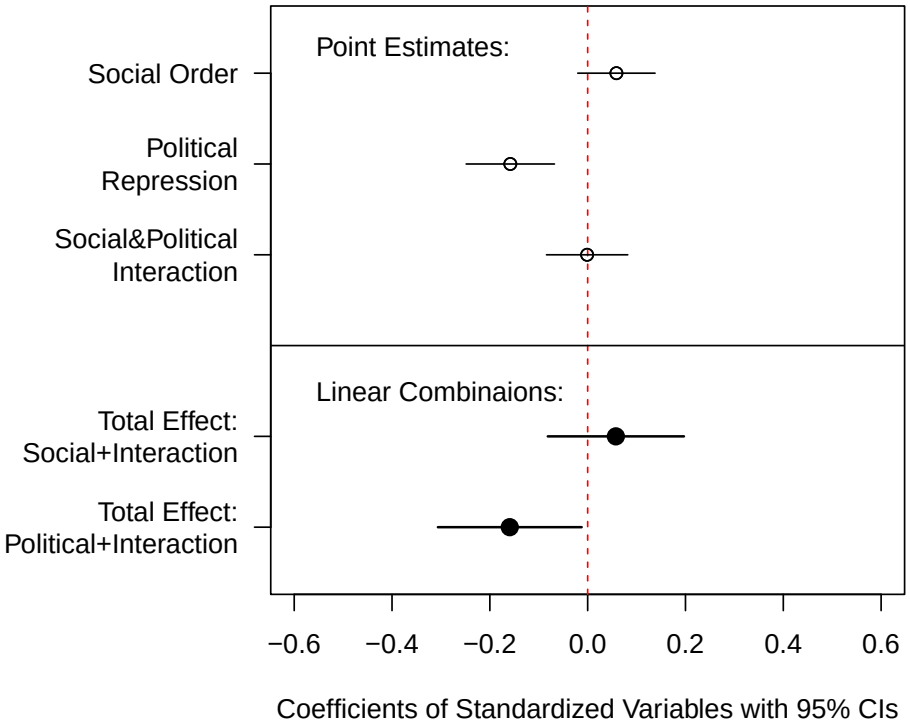

Figure B.2: Information Treatment Effects, No Foreigners and Insincere Survey Takers

Note: The upper panel reports the main effects of the two treatments and the marginal effect between them. The lower panel reports the total effects: main effects plus the marginal effect. The effective number of observations is 729.

B.2 Observational Evidence from College Field Survey: Robustness Tests

Table B.4 reports the results of the university field survey with additional controls. Column (1) shows the OLS results plotted in Figure 5 in the main paper. In Column (2), we control for respondents' self-evaluation of their SCS scores to address social desirability bias. In particular, the question asks: "If the SCS will be implemented nationwide to rate every citizen, how do you estimate your own social credit score? A. Far above average ... E. Far below average." In Column (3), we use individuals' willingness to discuss politics online as a proxy to control for their risk preference. The question is "Do you usually discuss political affairs and trending news on the Internet (Weibo, WeChat, Blogs, etc.)? 1.Never ... 5.Very Frequently." In Column (4), we use individuals' willingness to petition an unfair university policy to control for their tendency to obey

the authority. The results show that the positive relationship between exposure to state media (Info. Control) and support for the SCS remains robust after controlling for these personal traits.

Table B.4: Information Asymmetry and Support for the SCS: College Field Survey

VARIABLES	(1) Support	(2) Support	(3) Support	(4) Support
SCS Info: State Media	0.215**	0.210**	0.216**	0.215**
	(0.038)	(0.027)	(0.030)	(0.027)
Distrust in Society	0.084***	0.062**	0.063**	0.064**
	(0.004)	(0.010)	(0.009)	(0.010)
Personal Distrust (Insecurity)	-0.049	-0.038	-0.038	-0.038
	(0.048)	(0.049)	(0.050)	(0.050)
Selfscore (Social Desirability)		0.182*	0.181*	0.181*
		(0.050)	(0.051)	(0.049)
Discuss Politics (Risk Preference)			-0.044	-0.044
			(0.035)	(0.036)
Petition (Non-Obedience)				-0.013
				(0.041)
Other Controls	Yes	Yes	Yes	Yes
University FEs	Yes	Yes	Yes	Yes
Constant	-0.011	-0.021	-0.027	-0.026
	(0.042)	(0.035)	(0.031)	(0.032)
Observations	670	670	668	665
R-squared	0.073	0.102	0.105	0.105

Robust standard errors are clustered on provinces. Other controls include age, gender, income, CCP membership, Social Conformity, Social Service, etc.
*** p<0.01, ** p<0.05, * p<0.1

B.3 Observational Evidence from Nationwide Online Survey: Robustness Tests

Table B.5 reports the results of the Nationwide Online Survey with additional controls. Column (1) shows the main regression results as plotted in Figure 6 in the main paper. In Column (2), we include the variable SCS Fairness to control for individuals' credulity. This question asks the users of Tencent or sesame SCSs: "Do you think your credit score is fairly calculated?". In Column (3), we use a question regarding privacy protection to capture individuals' risk preferences, "Have you ever decided to not use a website or app because you didn't want to share personal information?". The results show that the effect of social isolation is large and statistically significant after con-

trolling for these two variables. In Column (4), we control for individuals' social desirability by including a question that asks respondents to compare their scores with others: "Is your Sesame or Tencent score higher or lower than most of your family's and friends' scores?" The effect of citizens' tendency to avoid discredited friends remains large and statistically significant.

Note that the effect of information control is not very robust to the credulity control. As we discussed in the main paper, in the online survey, we only asked individuals their information sources for commercial SCSs such as Tencent and Sesame SCSs. We also used TV and newspaper as a proxy for state media. This imperfect measure likely correlates with individuals' evaluation of the SCS's fairness. In the Field Survey, we used a more accurate measure of exposure to state media and the result is very robust (Table B.4).

Table B.5: Information Control and Support for the SCS: Nationwide Online Survey

VARIABLES	(1) Support	(2) Support	(3) Support	(4) Support	(5) Support
SCS Info: TV/Newspaper	0.072***	0.007	0.073***	0.029*	0.011
	(0.017)	(0.016)	(0.017)	(0.016)	(0.016)
Avoid Friends with Bad Social Credits	0.176***	0.113***	0.175***	0.157***	0.109***
	(0.019)	(0.015)	(0.020)	(0.021)	(0.014)
Perceived Distrust	0.292***	0.175***	0.290***	0.206***	0.177***
	(0.020)	(0.032)	(0.021)	(0.027)	(0.029)
SCS Fairness (Credulity)		0.220***			0.203***
		(0.017)			(0.020)
Privacy (Risk Preference)			-0.017		0.029
			(0.021)		(0.027)
SCS Self-evaluation (Social Desirability)				0.106***	0.061***
				(0.022)	(0.021)
Other Controls	Yes	Yes	Yes	Yes	Yes
Region FEs	Yes	Yes	Yes	Yes	Yes
Constant	0.029	0.188***	0.029	0.167***	0.197***
	(0.022)	(0.035)	(0.021)	(0.022)	(0.032)
Observations	1,895	1,186	1,895	1,278	1,121
R-squared	0.219	0.214	0.219	0.175	0.218

Robust standard errors are clustered on provinces. Other controls include age, education, gender, income, public employment, SCS pilot city, urban/rural residence, CCP membership, etc.
*** p<0.01, ** p<0.05, * p<0.1

B.3.1 What Predict Citizens' Reliance on State Media for Information about the SCS?

Citizens who support the SCS may self-select into consuming state media. Figure B.3 shows that citizens with higher education, communist party membership, or living in SCS pilot cities are more likely to rely on state media for information about the SCS. We thus control for these variables in the models that examine the relationship between information control and support for the SCS (Table B.5).

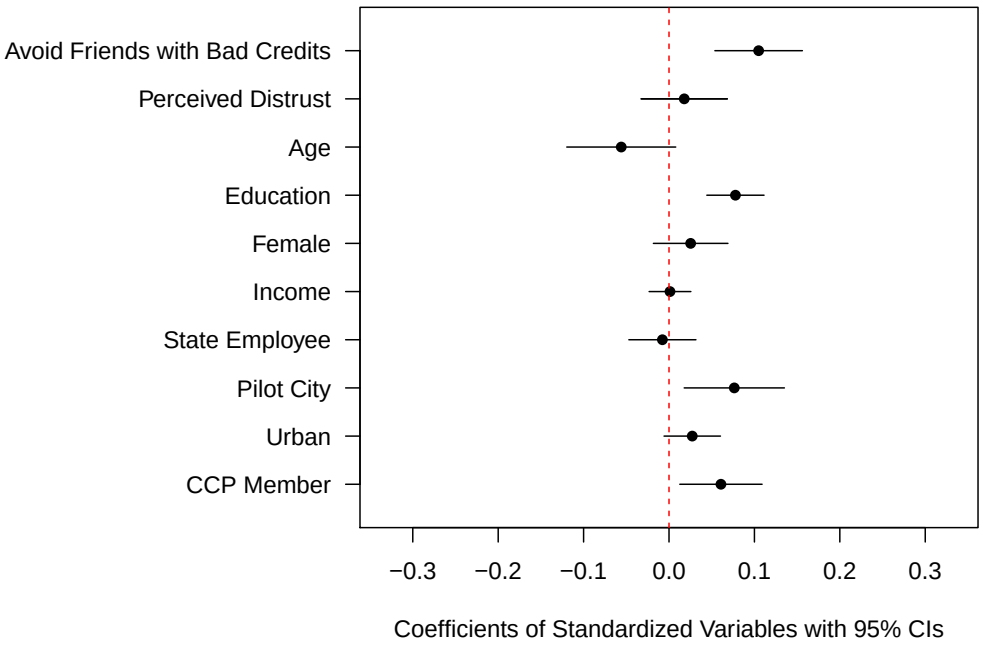

Figure B.3: Using State Media for Information about the SCS

Note: Region fixed effects are included. Robust standard errors are clustered on provinces.

B.3.2 Support for the SCS: Commercial-SCS Users Only

We code TVs and newspapers as a proxy for state media. But this question is conditional on respondents reporting the use of *commercial* SCSs (e.g., Tencent or Sesame SCSs). There are 1,469 commercial-SCS users out of 2,027 respondents. For the main analysis, we code non-users into the non-state-media group. Here we focus on a sample of 1,469 commercial-SCS users only. Figure B.4 shows that the results are robust in this smaller sample.

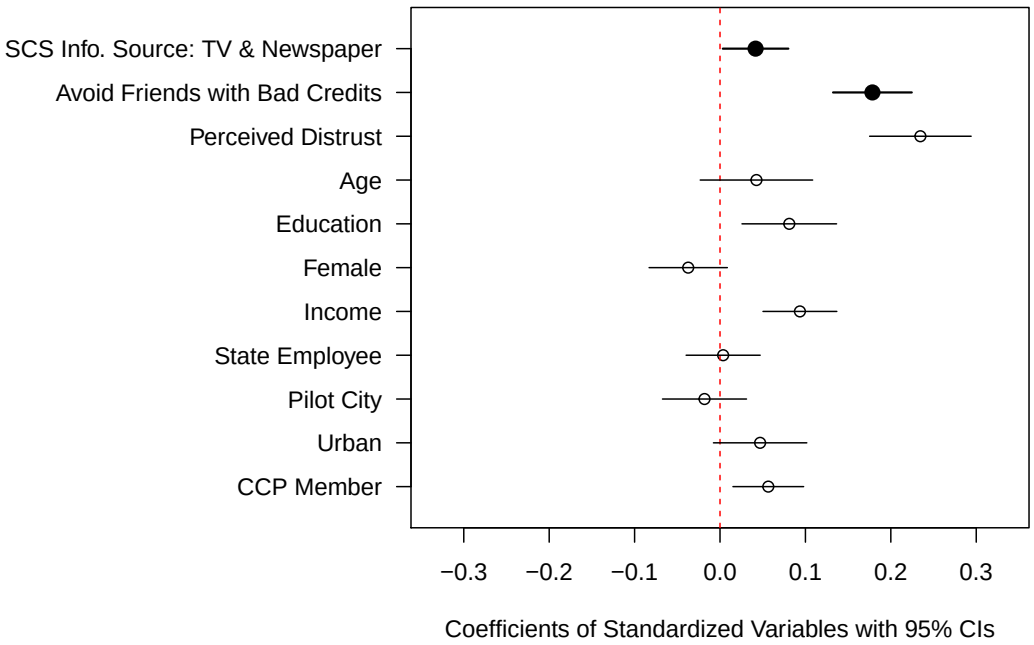

Figure B.4: Support for SCSs: Nationwide Online Survey, Commercial Users Only

Note: Region fixed effects are included. Robust standard errors are clustered on provinces. The effective number of observations is 1,410.

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