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Participation Disenchants: How Online Political Participation Decreases Online Political Efficacy in China

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ABSTRACT

Existing literature largely agrees that authoritarian regimes establish channels for political participation to gather valuable information on citizens' anti-regime sentiments and policy preferences and to supervise lower-level bureaucrats and firms. However, we lack knowledge of how citizens—key actors behind this informational function—actually experience these channels. I investigate citizens' experiences in the context of online political participation in China, drawing on survey data and online fieldwork. I find evidence suggesting that initial online political participation significantly *decreases* feelings of online political efficacy through a "disenchantment" process in which participating citizens gather sobering first-hand experience and subsequently lower their assessment of the regime's responsiveness. On this basis, I develop a theory of an "information-propaganda trade-off" that authoritarian regimes face: to obtain more information, authoritarian regimes can encourage more citizens to participate. Once citizens participate, however, they grow disillusioned, and the regime's propaganda becomes less convincing.

1 | Introduction

From mid-April to mid-May 2022, the Chinese government solicited online comments regarding the work of the 20th National Congress of the Chinese Communist Party, which met in October 2022 and cemented Xi Jinping's position as China's paramount leader without term limits. After reportedly more than eight million comments were received, Xi asserted that this form of soliciting online opinions was an "effective way" of "promoting national development" and "conforming to the will of the people" (People's Daily 2022). Indeed, most authoritarian regimes are expanding digital participatory channels (Åström et al. 2012; T. Zhang 2022). Of the 58 countries coded as authoritarian by Geddes, Wright, and Frantz (2014), a remarkable 26 achieved a high or very high e-participation index in the United Nations (2020) e-government survey (United Nations 2020; T. Zhang 2022).[1]

Political participation in authoritarian regimes contributes to several functions, such as co-optation, international and national legitimacy, and credible commitment (Brancati 2014; Gandhi and Lust-Okar 2009; Maerz 2016). Another function stresses authoritarian regimes' inherent lack of information (Distelhorst and Hou 2017; Truex 2016; Wintrobe 1998).[2] Lacking information on citizens' anti-regime sentiments and policy preferences, lower-level bureaucrats, and firms' compliance with legal and societal expectations, authoritarian regimes welcome citizen input to gain such information, avoid regime-threatening protests, design better policies, and supervise local officials and firms more effectively.

While many studies show impressing levels of formal governmental responsiveness to online political participation in authoritarian regimes and illuminate factors behind differing levels of responsiveness (Distelhorst and Hou 2017; Jiang, Meng,

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and Zhang 2019; Meng and Yang 2020; Zheng and Meng 2021), we lack knowledge of how citizens—critical actors of this informational function—actually experience online political participation. Citizens might experience these channels as useful tools to contribute to the effective supervision of bureaucrats and firms. Meanwhile, the frequent abundance of censorship and propaganda in authoritarian regimes (Egorov, Guriev, and Sonin 2009; Guriev and Treisman 2019) and disillusion of citizens with certain offline forms of political participation (Gallagher 2006) and participatory digital technologies such as social credit systems (Xu, Kostka, and Cao 2022) suggest that the opposite might be equally plausible: citizens might grow disillusioned when they exercise online political participation. How citizens experience these channels has important implications for their future participation and, thus, for the information authoritarian regimes can use for their governance.

To shed light on citizens' experiences with online political participation, I investigate the effects of online political participation on online political efficacy by drawing on a nationwide online survey ($n = 3000$) conducted in mainland China in 2021 and online fieldwork conducted in 2024. The survey data shows that citizens' online political participation is *negatively* correlated with online political efficacy. Both the survey and fieldwork data suggest a causal "disenchantment" effect: citizens who participate politically have disappointing first-hand experiences that contrast with the exaggerated propaganda they were previously influenced by. As a result, their feelings of political efficacy decrease, especially when participating for the first time. Based on the findings, I develop a theory of a dilemma faced by authoritarian states, which I term the "information-propaganda trade-off": to gain more information and improve governance, authoritarian states can encourage more citizens to participate politically. However, once more citizens participate, propaganda on the regime's responsiveness loses its effectiveness as citizens gain first-hand experience and are less influenced by propaganda.

The article proceeds as follows: Section 2 reviews the literature on political participation and political efficacy in authoritarian regimes and generates the article's central hypotheses. Section 3 discusses recent developments in online political participation in China. Section 4 presents the data sources and key measurements. In Section 5, I conduct the data analysis and discuss the findings, based on which Section 6 conceptualizes the "information-propaganda trade-off." Section 7 concludes.

2 | Political Participation and Political Efficacy in Authoritarian Regimes

Including non-governmental actors in political processes in democracies is generally perceived to yield a wide range of benefits. Citizens engaging in elections are commonly theorized as holding politicians accountable and ensuring that policy outcomes are responsive to citizens' preferences (Przeworski, Stokes, and Manin 1999; Verba, Schlozman, and Brady 1995). Through various forms of non-electoral political participation, such as protests, contacting politicians, contributing to media reports, and boycotts, citizens further contribute to improved accountability and enhanced regulatory enforcement, even as these effects often rely on the electoral threat (Grabosky 2013; Gunningham, Kagan, and Thornton 2004; McCubbins and Schwartz 1984). The inclusion of firms in regulatory processes can also lead to better policies as these stakeholders have essential information, and their inclusion in policymaking increases the legitimacy of the policy (Ayres and Braithwaite 1992; Bunea and Lipcean 2024). While this article focuses on citizens' political inclusion, its findings might also apply to firms.

I build on Van Deth (2014) and understand political participation as voluntary actions by citizens located in or targeted at the sphere of the government or the state. Political participation *located* in the government/state sphere uses government-created channels and includes activities such as voting, lodging petitions, or contacting government officials through government websites. Political participation *targeted* at the government/state can use other channels but needs to be "used to attract attention to problems (...) requiring governmental/state involvement" (Van Deth 2014, 357), and thus includes activities such as protesting and discussing on social media if intended to raise such attention. Activities such as forced voting or forced participation in rallies, as well as political activities of officials during their duty, do not fall under this definition of political participation for their lack of voluntariness or amateurishness.

Given the traditional association of political participation with democracy, political scientists have been at pains to explain the role of political participation in autocracies. Some existing explanations stress that political participation in authoritarian regimes serves the functions of co-optation, international and national legitimacy, and credible commitment (Brancati 2014; Gandhi and Lust-Okar 2009; Maerz 2016). Another well-established explanation argues that lacking free elections and free media, authoritarian governments face an inherent information problem. This information problem, which I call the "autocrat's information problem," refers to the lack of knowledge about anti-regime sentiments (Magaloni 2006; Miller 2015; Wintrobe 1998), the policy preferences of citizens (Dimitrov 2014, 2015; Lorentzen 2013; Meng, Pan, and Yang 2017; Truex 2016), the performance of lower-level bureaucrats (Anderson et al. 2019; J. Chen 2016; Pan and Chen 2018; Wallace 2016), and firms' compliance with legal and societal expectations (Gunningham, Kagan, and Thornton 2004; Van Rooij, Stern, and Fürst 2016).[3] Authoritarian regimes acquire information through diverse channels, many of which rely on political participation to function. Some channels do not heavily depend on political participation, for example, internal reports (Dimitrov 2015, 2023), surveillance (Dimitrov 2023; Xu 2021), surveys, commercialized and partly free media (Egorov, Guriev, and Sonin 2009; Lorentzen 2014; Stockmann 2013), higher-level governmental oversight (Raffler 2022) and party members.[4] However, many channels do rely heavily on political participation, for example elections (Gandhi and Lust-Okar 2009; Landry, Davis, and Wang 2010; Manion 2015), complaints and petitions (J. Chen 2016; Dimitrov 2023; Minzner 2006), legislators which citizens can contact (Truex 2016), protests (Lorentzen 2013), courts (Ginsburg and Moustafa 2008), public hearings (Ergenc 2014), deliberative polling (Fishkin et al. 2010; He and Thøgersen 2010; He and Warren 2011), social media (Qin, Strömberg, and Wu 2017; G. Yang 2009; X. Zhang and Lin 2014), and participatory government portals (Distelhorst and Hou 2017).

While it seems plausible that political participation helps solve the autocrat's information problem, existing research sheds little light on how citizens—the key actors behind the informational function—actually experience online political participation. As will be outlined in more detail below, participating citizens might plausibly grow more confident in their ability to influence politics ("empowerment" effect), or equally plausibly grow disillusioned and become less confident in their ability to influence politics ("disenchantment" effect). If citizens grow disillusioned, many will cut down their political participation and withdraw from the cycle of responsiveness (Distelhorst and Hou 2017), which would reduce the amount of information the government receives and lead to informational biases, making effective governance more challenging. On the other hand, empowered citizens will actively provide information in the future and thereby arguably facilitate effective governance.

To investigate how citizens experience online political participation, this study focuses on political efficacy, which is key to the informational function. I follow the usual definition of political efficacy as "the feeling that individual political action does have, or can have, an impact upon the political process" (Campbell, Gurin, and Miller 1954, 187).[5] Most often, this construct is divided into internal and external efficacy. External efficacy refers to the "belief that the authorities or regime are responsive to influence attempts" (Balch 1974, 24), while internal efficacy refers to "the individual's belief that means of influence are available to him" (Balch 1974, 24). If citizens believe the government will be responsive to citizens' political participation (external efficacy) and if they think they have sufficient abilities to participate (internal efficacy), they are more likely to express their demands and provide useful information to the government. If citizens perceive that the government will not respond, or if they believe they lack the capacity to participate, most will not bother to spend the effort of making demands, thereby depriving the government of valuable information. How citizens experience online political participation certainly also affects citizens' views on the legitimacy of the government, but I leave this to future research.

I focus on online political efficacy instead of political efficacy, as online political efficacy is most sensitive to citizens' online experiences and thus better captures how citizens' political attitudes are affected by online political participation. In doing so, I partly build upon recent research (e.g., C. Chen, Bai, and Wang 2019; Ognyanova and Ball-Rokeach 2015; Sasaki 2016) that criticizes the concept of (general) political efficacy for its broadness and suggests that studying "online political efficacy" can shed more light on ambiguous findings about whether and how the internet increases political participation.[6] Analyzing survey data from Japan, Sasaki (2016) finds that (general) political efficacy and online political efficacy were not or only weakly correlated, thus suggesting that individuals with similar levels of general political efficacy tend to feel very different about political efficacy through the internet. While interesting, these studies focus on how individuals assess the empowering effect of the internet and measure online political efficacy by questions such as "By using the Internet, people like you can have *more* say in what the government does" and "By using the Internet, people like you can *better* understand politics" (Sasaki 2016, 204–206, both my emphasis; also see C. Chen, Bai, and Wang 2019; Martin, Martins, and Naqvi 2018; Ognyanova and Ball-Rokeach 2015). This can be seen as a "relative" measure, as it captures the difference between citizens' evaluations of the effectiveness of (or their confidence in using) online versus offline channels. Instead, I propose an "absolute" measure of online political efficacy to capture citizens' assessment of the effectiveness of and their confidence in using online channels *as such*, independent of offline channels.

An example highlights my rationale for using this absolute measure of online political efficacy. Imagine citizen A, who, at a certain point, believes she has very little influence on politics through offline channels but a high impact on politics through online channels. Citizen A (denoted by A_t) would have both high "relative" online political efficacy and high "absolute" online political efficacy (see Table 1). After a dissatisfying experience with online political participation, citizen A (now denoted by A_{t+1}) might still believe she has very little influence on politics through offline channels but now believes she can only exert a moderate impact on politics through online channels. She would then still have high relative online political efficacy but only moderate absolute online political efficacy, as seen in Table 1. In this case, the relative measurement of online political efficacy would not take up this shift in citizen A's attitudes, but the absolute measurement will. While citizen A's general political efficacy might also change slightly in this example, absolute online political efficacy is more sensitive to citizen A's online experiences and thus constitutes a more suitable measurement. Given that online political participation is not just offline political participation turned digital but also provides different

TABLE 1 | Conceptualization of absolute and relative online political efficacy.

	("Absolute" offline political efficacy)	**"Absolute" online political efficacy**	**"Relative" online political efficacy**
Definitions	Feeling that individual *offline* political action can impact the political process (based on Campbell, Gurin, and Miller 1954, 187)	Feeling that individual *online* political action can impact the political process (based on Campbell, Gurin, and Miller 1954, 187)	Individual assessment of the empowering effect of the internet on being able to impact the political process (based on Campbell, Gurin, and Miller 1954, 187; Sasaki 2016)
Example: Citizen A_t	Low	High	High
Example: Citizen A_{t+1}	Low	Medium	High

affordances and works quite differently (e.g., there is no offline social media), it seems plausible to expect that citizens' online political participation is driven more by their absolute online political efficacy than by their relative online political efficacy. In the above example, I would expect citizen A_{t+1} to be less inclined to exert online political participation than citizen A_t, even though her relative online political efficacy has not changed.[7]

One strand of research suggests that citizens in authoritarian regimes experience online political participation as empowering, which means their online political efficacy should increase after experiencing online political participation. Much research has found surprisingly high levels of responsiveness, which might suggest such an empowering effect as citizens are positively surprised when participating. For example, Distelhorst and Hou (2017) found a level of responsiveness to online demands through "Mayor's mailboxes" in China of 43%, comparable to advanced democracies. Meng and Yang (2020) found an average reply rate of 66% to all 1.66 million comments on a prominent Chinese platform for contacting government officials. A major limitation of these studies is their focus on formal responsiveness, as they primarily assess whether there was a government reply with some helpful information but not whether there was a substantial impact or whether the problem raised by citizens has been solved. Still, several studies have shown substantial responsiveness to online political participation in autocracies. For example, Buntaine et al. (2024) found in an experimental study that online citizen appeals in China substantially decrease environmental violations by firms (for similar non-experimental substantive findings, see Hsu et al. 2020; Jiang, Meng, and Zhang 2019; Kornreich 2019). Some research focusing on offline political participation in China also finds that participating citizens learn more about the system and strengthen their abilities, thus experiencing an increase in political efficacy (Ergenc 2014; O'Brien and Li 2006, 104). Research from democracies has also identified a positive causal effect of political participation on political efficacy (Ikeda, Kobayashi, and Hoshimoto 2008; Quintelier and Van Deth 2014), so one might expect the same for online political participation in autocracies.[8]

Hypothesis 1a. *Experience with online political participation increases online political efficacy* (*empowerment effect*).

Alternatively, if citizens already have high levels of political efficacy, there might be no effect:

Hypothesis 1b. *Experience with online political participation does not affect online political efficacy, as citizens already have high online political efficacy.*

Another strand of research suggests that citizens in authoritarian regimes become disillusioned when engaging in online political participation, so one should observe a negative effect on online political efficacy. In most authoritarian regimes, substantial information control in the form of propaganda and censorship is theorized to be crucial for their stability (Egorov, Guriev, and Sonin 2009; Guriev and Treisman 2019; Roberts 2018). This propaganda, if persuasive, should lead citizens to overestimate the responsiveness of the regime. For example, studying China, Cai and Zhou (2019) found that 80% of high-profile cases of online political participation were resolved, but only slightly more than 20% of low-profile cases. Naturally, as citizens are more likely to observe high-profile cases, they will overestimate the successfulness of online political participation. Much research from China finds that offline political participation is indeed often unsuccessful (Cai 2010; Gallagher 2006; Li 2004; Minzner 2006; O'Brien and Li 2006, 80–81), which could lead to disillusioning experiences. Existing research has also argued that propaganda is a major reason why Chinese citizens overestimate the positive sides of the law system (Gallagher 2006; Stockmann and Gallagher 2011) and of digital technologies such as social credit systems (Xu, Kostka, and Cao 2022). Thus, citizens who experience online political participation first-hand might grow "disenchanted" (Gallagher 2006) and experience a drop in online political efficacy as they more accurately assess the effectiveness of digital participatory channels.

Hypothesis 2. *Experience with online political participation decreases online political efficacy* (*disenchantment effect*).

Alternatively, it could be that internal and external efficacy are affected differently by participatory experience. While not using the terms of internal and external efficacy, Gallagher's (2006) study on aggrieved workers who sought help at a legal aid center in Shanghai supports this hypothesis. In her research, she found that the worker plaintiffs, who had little first-hand experience with the legal system, changed along two dimensions during the legal processes they were involved in. On the one hand, these workers gained much knowledge about the workings of the legal system, expressed increased self-confidence in using the law, and often started giving legal advice to their friends (i.e., their internal efficacy increased). Meanwhile, these plaintiffs also lost confidence in how well the law protects workers' rights, as they, for example, learned about the law's favorableness to employers or worker-friendly court decisions that did not get implemented (i.e., their external efficacy decreased).

Hypothesis 3. *Experience with online political participation decreases online political external efficacy while increasing online political internal efficacy.*

3 | Online Political Participation in China

China is at the forefront of digital transformation, as demonstrated by the enormously quick and extensive adoption of new digital technologies by governmental actors, companies and society at large (Kostka and Bogs 2026). As of December 2023, China had about 1.092 billion netizens, 89.1% of which have reportedly used online government services (CNNIC 2024). These factors make China an excellent case for studying citizens' experience of online political participation. While there exists a diverse and expanding range of online channels for political participation, scholars have observed a trend toward the restriction of disruptive participation, such as protests, and the broadening and encouragement of participation through state-controlled channels (Fu and Distelhorst 2018). Though many instances of political participation seemingly occur only during policy implementation, instances of participation in official policy*making*, such as in national or provincial-level lawmaking, are also existent and do not seem to be on the decline (Balla and Xie 2023; Kornreich 2019). Three other specific recent trends of online political participation in China merit highlighting.

First, government service hotlines have been gaining increasing significance in China and are continuously being reformed by municipal governments to improve governance (Habich-Sobiegalla, Zheng and Pluemmer 2026). In early 2021, the central government commanded that by the end of 2021, all areas should have "12345" hotlines providing 24 × 7 around-the-clock service (General Office of the State Council 2021). Through this hotline, which can be reached by dialing 12345, citizens can inquire, complain, report, or give suggestions or praise. While the official name is "government service hotline," other common names are citizens' hotline, mayor's hotline, service hotline, or simply 12345. These hotlines seem to be used a lot. For instance, Jiangsu province, which pioneered a provincial 12345 service hotline as one of the first provinces and has a population of around 85 million, reports it received about 48.5 million demands through the 12345 service hotline in 2022 (Jiangsu Government 2023), claiming a satisfaction rate of 95% (People's Daily 2023b). About 80% of demands were made by phone, and about 20% through internet devices (Jiangsu Government 2023). This highlights a merging between analog (e.g., through phone) and online (through the internet) political participation. Figure 1 shows a typical demand made through 12345 in Sanya, exhibiting such a merging, as the demand was made through the mobile app WeChat.

Second, most government websites provide official input possibilities. Almost all websites of territorial governments in China now feature the possibility of "interaction" (*hudong jiaoliu*) through which citizens can leave messages directly to the government. While forms vary across different territorial governments, one prominent national example of an interactive website is the Leader Messenger Board (LMB), which was set up by People's Daily Online in 2006 and was formerly known as Local Leader Messenger Board (Su and Meng 2016). On LMB, messages can be sent to all territorial leaders in China at the provincial, prefectural, and county levels, and since 2019, also to all ministries and many government agencies. Reportedly, little censorship takes place on LMB, and the overwhelming majority of messages received are posted online (Jiang, Meng, and Zhang 2019, 533–534). National government institutions such as the State Council also have their own websites featuring message-leaving opportunities (see Figure 2).

Finally, Chinese social media provides ample opportunities for political participation. Many political topics can be discussed despite censorship, and the government is highly attentive to social media (Cai and Zhou 2019; Meng, Pan, and Yang 2017) while also being very much present, as it recently promoted hashtags to facilitate government contacting (Wei, Yao, and Zhang 2023) and set up government accounts for direct contacting (T. Zhang 2022).

Official media presents many of these channels in a very positive light, making it plausible that citizens have exaggerated expectations about their usefulness and might grow disenchanted when using them. In China, propaganda is a present aspect of daily life (Brady 2009; Huang 2015; Mattingly and Yao 2022; Roberts 2018; Stockmann and Gallagher 2011), and much propaganda stresses the government's benevolence and the efficacy of citizens' political participation. In official discourse, China's democracy is a "whole-process people's democracy" (*quan guocheng renmin minzhu*), which includes citizens' "extensive right to participate" (*guangfan canyu quan*) (State Council Information Office 2021). Among the various criteria to assess whether a country is democratic, the official discourse includes the criteria of "whether the people can express their interests and demands freely, and whether all sectors of society can effectively participate in the political life of the country" (State Council Information Office 2021). There are also many examples of official information about various specific participatory channels stressing the government's high responsiveness. First, many official news report very high satisfaction rates with hotlines. For example, People's Daily, the state's flagship official newspaper, reported that Fujian Province had a satisfaction rate of 99.89% in 2021 (People's Daily 2021b), the satisfaction rate in the city of Wuxi reached "above 99%" in 2022 (People's Daily 2023a), and increased in Beijing from 65% in 2019 to 91% in mid-2021(People's Daily 2021a). While there is no readily available database of nationwide satisfaction rates, many cities reported very high satisfaction rates in 2021 (when the online survey this paper analyzes took place), such as 97.52% in Guangzhou (Guangzhou Government 2022), 97.28% in Suzhou,[9] 99.86% in Baoji,[10] 98.7% in Qidong,[11] and 99.8% in Taizhou.[12] Second, government websites for interaction paint a very positive picture, listing samples of largely successful previous messages (Göbel and Li 2021). LMB was also featured positively in the *Xinwen Lianbo* news program, China's daily unified evening broadcast, as a platform where "the public can express their opinions and suggestions directly to the central ministries and commissions and the local party committees and governments of various regions. This exemplifies the successful practice of whole-process people's democracy." (CCTV 2022). The language of the State Council's website, where citizens can directly write to the State Council, also uses similarly positive words (see Figure 2).

4 | Data and Measurements

This paper draws on data from Rabe, Kostka, and Bondes (2023), who conducted an online survey in mainland China in July 2021. The survey was done in cooperation with a major international survey company and includes quotas for age, region, and sex to make the respondents more comparable to the general Chinese population. The questionnaire includes 31 questions. From a total of 4732 responses, those who used the same IP address repeatedly, finished the survey in an unrealistically short period, or failed the consistency check, were excluded, yielding a total of 3000 valid responses. As typical for online surveys, the dataset is skewed toward party membership, younger age, higher education, and bigger cities, and, naturally, restricted to netizens. As online political participation channels are arguably more often used by these groups, the sample is reasonably well-fit for investigating citizens' experiences with online political participation. Still, one should be very careful when generalizing to the whole online population. Appendix F shows the original wording of all relevant survey questions.

Measuring online political participation is tricky because online and offline channels are sometimes hard to distinguish and seemingly merge, as in the example of internet-submitted requests to 12345 service hotlines in Figure 2. Given that government hotlines are very similar to other online channels (such

三亚市人民政府
The People's Government of Sanya City
sanya.gov.cn
繁 EN
请输入您要搜索的关键字
首页 市政府 新闻 信息公开 政务服务 互动 数据 市情

工单状态	工单归档
工单编号	20230801695462
工单分类	公共安全类
工单来源	微信自主上报
受理时间	2023-08-01 21:01:33
来电类型	投诉举报类
工单标题	关于吉阳区蓝海购物广场公交车站每天中午都有出租车以及其他小车违停的问题
工单内容	市民微信自主上报反映：吉阳区蓝海购物广场公交车站每天中午都有出租车以及其他小车违停，蓝海购物广场对面全季酒店门前非机动车道也是，阻挡非机动车道，有的时候只能绕到机动车道行驶，非常不安全，故投诉，望核实处理。
是否延期	否
工单回访满意度	未评价
市民评价	
回复评价	

处理信息

序号	处理时间	处理环节	处理单位	处理描述
1	2023-08-02 09:25:14	职能局处理	市交警支队	您好，我支队已指派辖区吉阳大队交警常态化、不定时前往现场巡逻管控，对市政道路范围内的违章行为及时劝离或是根据现场实际情况开单处罚。感谢您的来电！

备注：
1、工单归档： 工单已结案；
2、热线前台处理、热线后台处理、区分中心处理、回访复核审核、督办审核：热线中心正在受理；
3、职能局收单、职能局处理、三级职能局处理、职能局领导审核：职能局正在受理；
4、区分中心办结审核、区分中心退单审核、热线后台退单审核、职能局领导退单审核：职能局正在审核；
5、市民的投诉，视案情复杂度可能会经过延期、复核等处理环节，需时较长，请耐心等待。该页面仅展示最新处理情况，如需了解该案件更详细的处理情况，请致电12345热线。

三亚市12345政府服务热线管理办公室
2023年08月03日

FIGURE 1 | Image from Sanya's service hotline database. Figure shows a complaint by a user about illegal parking at a bus station, which, according to the user, blocked the non-motorized lanes and thereby constituted a severe security risk. The complaint was submitted around 9:00 p.m. on a Friday through WeChat. The government response dates 9:25 a.m. the next day (Saturday) and lists the municipal traffic police department, which says it has assigned the relevant traffic police brigade to patrol the site regularly to dissuade crimes and issue tickets and penalties depending on the situation on site.

as government "interaction" websites) in that they (1) only allow vertical information between individual citizens and the government unless the government decides to make the request public and (2) are relatively new, I include political participation through hotlines in my measurement of online political participation. Specifically, I draw on the question: "How often have you expressed your opinion on public issues online or via hotline in the past five years?" where respondents could choose between: never, 1–2 times, 3–5 times, 6–10 times, 11–20 times, more than 20 times, I code the answers on an interval scale from 0 to 5, assuming substantively similar distances between categories.

When measuring online political efficacy, I want to measure citizens' perception of the government's responsiveness to online political participation (absolute online external political efficacy), and citizens' perceptions of their ability to participate in politics through online channels (absolute online internal political efficacy). As discussed above, this differs from measurements of general political efficacy, while also differing from relative conceptions of online political efficacy that focus on the empowering effect of the internet. Specifically, I draw on the multiple-choice question, "Which factors hinder you from expressing your opinion on public affairs through the Internet or government hotline?" where respondents could choose among various reasons.[13] I code the answer "I think it is not effective" (reversed) as external efficacy, and I code the response "I do not know how it works" (reversed) as denoting internal efficacy. While this dichotomous measurement of online political

FIGURE 2 | China's State Council website's interaction subsection. Figure shows the interaction subsection of China's State Council website. Note that the shown web version is very similar to the mobile version. Translation: We welcome you to directly write at the State Council. How do you feel about employment, income, education, medical care, housing, ecological environment, etc.? What are your tips and insights on improving and refining policies and government work? The work of the government cannot be done without everyone's profound insights. Your messages may be forwarded to relevant departments and places and made public in different forms. Your aspiration for a better life is the direction of our efforts. Thank you for your participation in our endeavors to promote the spirit of investigation and research, to draw on the wisdom of all parties, and to assist the government in making scientific decisions.

efficacy is relatively crude, it has the advantage of referring specifically to online channels and hotlines, which makes it very appropriate for my research question.

To gain additional insight into possible mechanisms and supplement the survey data analysis, I conducted a systematic keyword search on Zhihu in May 2024. Zhihu is China's most popular question-and-answer website and reported approximately 96 and 101 million active monthly users in 2021 and 2022, respectively (Zhihu Inc. 2023). It tends to be used more frequently by younger, urban, and more educated people. Searched keywords included "reporting problems to the government" (*gei zhengfu fanying wenti*), "making suggestions to the government" (*gei zhengfu ti yijian*), "government hotline" (*zhengfu rexian*), "leadership message board" (*lingdao liuyanban*), "leaving messages to the government" (*gei zhengfu liuyan*) and "mayor's hotline" (*shizhang rexian*). For each keyword search, I collected the first 30 threads. Threads could be Q&A threads or "columns" threads (*zhuanlan*), which also allow discussion in comments. A few search results were articles in published magazines, but these were skipped. I then scanned the collected 180 threads and excluded all unrelated threads, defined as (a) those discussing topics other than online political participation, such as how to give feedback to one's superior in a firm, (b) those clearly written not by citizens, but by organizations, (c) those exclusively about specific suggestions toward the government, not discussing such experiences, and (d) duplicates. This procedure yielded 124 unique, relevant threads. I subsequently web-scraped all these threads, treating all questions, column posts, answers, comments, comments to comments, and comments to comments' comments as individual "comments." I then hand-coded each of these unique 3252 "comments."

5 | Analysis and Discussion

5.1 | Survey Evidence

I start by analyzing the survey evidence, then examine the online fieldwork evidence, and subsequently move to a broader discussion of the findings. To investigate the relationship between online political efficacy and online political participation, I estimate logistic regression models treating external or internal efficacy as dependent variable and frequency of political participation as independent variable. I exclude those respondents who said they were unaware of any online or hotline channel to express their opinion toward the government (Question 11 in Appendix F), which gives me 2842 effective responses.

I include several control variables in all regressions: mobile phone usage, sex, age, age squared, education, Chinese Communist Party (CCP) membership, Communist Youth League (CYL) membership, other party membership, income, and life satisfaction. I also include dummies for each province, the type of city, and different employment conditions. I impute missing values for the variables sex and income (about 1%–2% of answers) by the means of the respective variables. Appendix C shows descriptive data for all variables.

Table 2 reports regression results for external efficacy, while Table 3 reports regression results for internal efficacy. Model 1 in Table 2 is the baseline model with online external efficacy as dependent variable, while Model 1 in Table 3 is the baseline model with online internal efficacy as dependent variable. As can be seen, at the baseline, the coefficient for frequency of participation is *negative* and significant at at least the 5% level. In line with the suspected disenchantment

TABLE 2 | The effects of frequency of participation on external efficacy.

	(1)	(2)	(3)	(4)	(5)	(6)
frequency_of_particip	−0.098**	0.032	0.033	0.034	0.034	
	(0.044)	(0.058)	(0.058)	(0.058)	(0.058)	
particip_zero		0.569***	1.495***	0.809***	1.429***	0.323*
		(0.159)	(0.540)	(0.194)	(0.539)	(0.186)
particip_zero * education			−0.341*		−0.242	
			(0.189)		(0.196)	
particip_zero * any_party_or_CYL				−0.548**	−0.462*	
				(0.240)	(0.249)	
education	−0.135	−0.118	−0.038	−0.103	−0.049	−0.112
	(0.094)	(0.094)	(0.103)	(0.094)	(0.103)	(0.171)
CCP	−0.041	−0.028	−0.030			−0.149
	(0.105)	(0.105)	(0.105)			(0.232)
other_party	−0.209	−0.202	−0.222			−0.279
	(0.501)	(0.501)	(0.500)			(1.150)
any_party_or_CYL				0.031	0.020	
				(0.105)	(0.106)	
CYL	−0.045	−0.043	−0.041			0.045
	(0.117)	(0.118)	(0.118)			(0.241)
mobile_phone_usage	−0.102***	−0.096***	−0.094***	−0.095***	−0.094***	−0.043
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.056)
female	−0.003	0.006	0.014	0.020	0.023	−0.148
	(0.092)	(0.092)	(0.092)	(0.092)	(0.092)	(0.181)
age	−0.021	−0.025	−0.023	−0.026	−0.025	−0.116
	(0.037)	(0.037)	(0.037)	(0.036)	(0.036)	(0.071)
age_squared	0.0003	0.0004	0.0003	0.0004	0.0004	0.002*
	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.001)
income	0.059**	0.059**	0.058**	0.061**	0.060**	0.148***
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.047)
life_satisfaction	0.231***	0.232***	0.232***	0.229***	0.230***	0.309***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.054)
Constant	0.966	0.542	0.180	0.381	0.155	0.371
	(0.941)	(0.951)	(0.971)	(0.947)	(0.964)	(1.540)
Observations	2842	2842	2842	2842	2842	1023
Akaike Inf. Crit. (AIC)	3203.877	3192.904	3191.560	3185.789	3186.234	992.674

Note: Table shows logistic regression coefficients. Independent variables that are not shown include: province, type of employment, and size of city. Model 6 uses a subset of respondents with zero or minimal frequency of participation that have not used social media to express themselves. Standard errors in parentheses. Significance levels: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

effect (Hypothesis 2), citizens who participate more report *lower* external efficacy, that is, they are *more likely* to say that their participation is hindered by perceived ineffectiveness. Specifically, if frequency of participation increases by one (which is slightly less than 1 SD), the odds of reporting high external efficacy decrease by about 9%. If frequency of participation increases from "never" to "more than 20 times" (five steps), the odds of reporting high external efficacy decrease

TABLE 3 | The effects of frequency of participation on internal efficacy.

	(1)	(2)	(3)	(4)	(5)	(6)
frequency_of_particip	−0.139***	−0.017	−0.017	−0.024	−0.024	
	(0.047)	(0.060)	(0.060)	(0.060)	(0.060)	
particip_zero		0.568***	0.662	0.595***	0.615	0.477**
		(0.174)	(0.577)	(0.219)	(0.576)	(0.206)
particip_zero * education			−0.035		−0.008	
			(0.205)		(0.213)	
particip_zero * any_party_or_CYL				−0.095	−0.092	
				(0.270)	(0.283)	
education	−0.057	−0.041	−0.033	−0.042	−0.040	−0.052
	(0.100)	(0.100)	(0.110)	(0.100)	(0.110)	(0.195)
CCP	−0.204*	−0.192*	−0.192*			0.439
	(0.113)	(0.113)	(0.113)			(0.281)
other_party	−0.603	−0.595	−0.597			−1.710*
	(0.485)	(0.486)	(0.486)			(0.958)
any_party_or_CYL				−0.327***	−0.327***	
				(0.115)	(0.115)	
CYL	−0.399***	−0.398***	−0.398***			−0.126
	(0.121)	(0.121)	(0.121)			(0.251)
mobile_phone_usage	−0.095***	−0.089**	−0.088**	−0.088**	−0.088**	−0.080
	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.064)
female	−0.001	0.004	0.005	−0.002	−0.002	0.028
	(0.099)	(0.099)	(0.099)	(0.099)	(0.099)	(0.197)
age	0.098**	0.095**	0.095**	0.103***	0.103***	0.101
	(0.039)	(0.039)	(0.039)	(0.038)	(0.038)	(0.074)
age_squared	−0.001*	−0.001*	−0.001*	−0.001**	−0.001**	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
income	0.060**	0.059**	0.059**	0.062**	0.062**	0.029
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.051)
life_satisfaction	0.028	0.027	0.027	0.031	0.031	0.057
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.060)
Constant	0.973	0.573	0.539	0.398	0.391	0.526
	(1.047)	(1.056)	(1.075)	(1.053)	(1.067)	(1.783)
Observations	2842	2842	2842	2842	2842	1023
Akaike Inf. Crit.	2901.933	2893.037	2895.008	2894.166	2896.164	893.201

Note: Table shows logistic regression coefficients. Independent variables that are not shown include: province, type of employment, and size of city. Model 6 uses a subset of respondents with zero or minimal frequency of participation that have not used social media to express themselves. Significance levels: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

by about 40%.[14] This is quite a substantial effect. Regressing internal efficacy on frequency of participation yields even slightly larger effects.

While causation could run (and probably runs) in both directions, the negative correlation can hardly explained by an effect of efficacy on political participation because I expect such

an effect to be positive. Someone who thinks the government is *more* responsive and who has a *better* understanding of how online political participation works should be unlikely to participate *less*. Research from democracies suggests that political efficacy indeed positively affects political participation (Finkel 1985; Karp and Banducci 2008), and I would expect the same for China, despite little explicit research (but see Shi 1997, who suggests efficacy positively influences participation). I investigate two mechanisms through which efficacy could negatively affect participation but do not find evidence for either. First, there might be a "free-rider" mechanism. Citizens with high efficacy think other citizens will make the government sufficiently responsive and thus decide not to participate but to free-ride. To test this, I introduce a measure for free-riding attitude (see Appendix F for original wording) into the regression, which should act as a mediator. In both regressions for external and internal efficacy, however, the coefficient for frequency of participation does not decrease but instead slightly grows in magnitude (Model 1 in Appendices D and E). The second possibility might be that citizens with high efficacy believe the government works sufficiently well and does not need any additional input. To test this, I introduce a measure for the strength of political concerns about various political issues in the regressions, which should act as a reasonable mediator. In both regressions for external and internal efficacy, the coefficient for frequency of participation does not change significantly (Model 2 in Appendices D and E). As a negative effect of efficacy on online political participation seems unlikely, a negative effect of online political participation on efficacy seems more plausible.

I conduct additional tests to further investigate this suspected negative effect of participation on efficacy. I suspect the disenchantment effect to be strongest when citizens have little experience, because while participatory experience should always help citizens to more accurately assess actual levels of responsiveness, additional participatory experience should affect inexperienced citizens more than experienced citizens. In other words, the usefulness of first-hand participatory experience in accurately assessing the effectiveness of political participation should show diminishing returns. To investigate this non-linear effect, I estimate two non-linear models for both external and internal efficacy.[15] In the first non-linear model, I use the second-order polynomial of frequency of participation to model the non-linearity. In the second non-linear model, I introduce a dummy *particip_zero* for those respondents who report no participation. As the second model presents a better fit (lower AIC in the case of external efficacy, similar AIC in the case of internal efficacy) and easier interpretation, I focus on this model for subsequent interpretations and analyses (Model 2 in Tables 2 and 3; for the models with the polynomial see Model 3 in Appendices D and E). As can be seen, the coefficients for "No participation" are positive and statistically significant at the 1% level. Specifically, as shown in Model 2 in Table 2, an increase in participation from "never" to "1–2 times" is associated with a decrease in the odds of external efficacy by about 40%.[16] This is an enormous effect. The effect on internal efficacy is very similar. In both cases, the coefficients for frequency of participation are close to zero and not statistically significant. This suggests that once citizens have some initial experience with online political participation and have experienced this "disenchantment," additional experience does not, on average, alter their efficacy. Alternatively, assuming that efficacy has a positive effect on participation, the remaining negative effect of additional political participation on efficacy might be suppressed by the positive effect of efficacy on political participation.

I would further expect that the strength of this "disenchantment" effect depends on citizens' susceptibility to propaganda. Citizens with higher education should have more knowledge about potential drawbacks of online participatory channels even before having used them and are thus less influenced by propaganda (e.g., see Geddes and Zaller 1989), which would mean education should moderate the effect of participation on efficacy. Based on Truex (2017), who found that exposure to the online political participation portal of China's National People's Congress (NPC) increased satisfaction with the NPC only among lower-educated non-party members, I suspect that CCP membership might similarly moderate the strength of the disenchantment experience, as CCP members might have a more accurate understanding of participatory channels, even without personal experience. I first test the role of education as a moderator by introducing an interaction term for the dummy "participation zero" and education. As shown in Model 3 in Tables 2 and 3, the interaction effect between the "no participation" and education for external efficacy is significant at the 10% level, but insignificant for internal efficacy. Specifically, the odds of reporting external efficacy of a person with no formal schooling will decrease by about 77% if her participation increases from "never" to "1–2 times,"[17] while the odds of reporting external efficacy of a person with a Master's or doctoral degree (education = 4) will decrease by only 9% in a similar situation.[18] To investigate the moderating effect of CCP membership, I construct a dummy variable to capture membership in any party or the CYL and interact it with "no participation," as I expect that membership in other parties or the CYL might provide similar insights as membership in the CCP. As can be seen in Model 4 in Tables 2 and 3, there is indeed a strong interaction effect significant at the 5% level for external efficacy, but not for internal efficacy. When introducing both interaction terms at the same time (Model 5 in Tables 2 and 3), only the interaction effect with party or CYL membership is significant in the case of external efficacy, which suggests that the party or CYL membership variable better captures the varying strength of the disenchantment effect. I take these significant interaction terms as evidence in favor of the hypothesized disenchantment effect in the case of external efficacy.

Curiously, there seem to be no major differences in how external and internal efficacy are affected by online political participation (as Hypothesis 3 would have suggested), other than that the interaction effects are only significant for external efficacy. Thus, it seems that Chinese citizens experience a disenchantment effect concerning both their belief regarding the responsiveness of the government (external efficacy) and their belief in their personal capabilities to exert political impact (internal efficacy). The effect on external efficacy is moderated by education and party/CYL membership, while the effect on internal efficacy is not. Given that my dichotomous measurement of internal efficacy has a very low threshold for

identifying the presence of internal efficacy, it could be that the insignificant interactions for internal efficacy are due to this suboptimal measurement.

I now address three alternative explanations for the observed negative correlation between online political participation and online political efficacy. The first alternative explanation concerns the measurement of online political participation.[19] Survey respondents might interpret the question "*How often have you expressed your opinion on public issues online or via hotline in the past five years?*" in a way that includes expressive actions that are not directed at the government and for which respondents do not expect any government response (i.e., mere "venting"), which would fall outside of this paper's definition of political participation. If true, discontented citizens who might tend to have low levels of efficacy might then report high levels of participation, leading to the observed negative correlation.[20] The framing of the questionnaire does not suggest this interpretation, as a previous question, "*To whom have you expressed your opinion on public issues online or via hotline*," lists different government and social organizations, priming toward political participation targeted at the government and thus excluding venting. To further test this alternative explanation, however, I investigate the subset of respondents who express low frequency of online political participation (zero or 1–2 times) and have not used social media to express themselves (see Question 12 in Appendix F). If the venting mechanism were at play, the negative effect of participation on efficacy should disappear among this subset. However, the negative effect of online political participation on efficacy holds at the 10% level (external efficacy, see Model 6 in Table 2) and 5% level (internal efficacy, see Model 6 in Table 3). If adding the previously identified interaction term with party/CYL membership, the statistical significance of the negative effect of online political participation on efficacy among this subset reaches 5% for both regressions (Model 6 in Appendices D and E). This suggests that the negative correlation is not driven by venting on social media.

A second alternative explanation consists in citizens' different experiences with *offline* political participation, for which I do not control.[21] Plausibly, negative experience with offline political participation acts as a confounder and leads citizens to participate online, while also leading to a decrease in citizens' political efficacy, including their online political efficacy. This might drive the observed negative correlation. While I cannot entirely rule out this possibility, three pieces of evidence do not fit. First, if this explanation were true, I would expect the level of citizens' political concerns to partly mediate the effect of negative offline experiences on online political participation. Controlling for the number of topics citizens are concerned with should thus reduce the strength of the observed negative correlation between online political participation and online political efficacy. However, as shown in Models 2 and 7 in Appendices D and E, the coefficients for frequency of participation or "participation zero" almost do not change. Second, most citizens seem to prefer online political participation over offline participation. Of the 2842 respondents who have some knowledge of online participatory channels, only 12% prefer to express themselves offline instead of via hotline or online (see Question 17 in Appendix F). Among those who report no online political participation, this share is similarly low at 15%. Asked whether the benefits or risks are bigger in online participation (on a scale from 1 to 10, with 10 indicating benefits are bigger, see Question 18 in Appendix F), the mean of citizens' answers is about 7.8 (for those who report no online participation: 7.6). This suggests that a possible group of citizens who only engaged in online political participation after bad experiences with offline political participation is relatively small, given that most citizens prefer online over offline political participation in the first place. Finally, the previous findings of the non-linearity of the negative effect and the moderating role of education and party/CCP membership are hard to explain if citizens' negative offline experiences drive the observed correlation.

A third alternative explanation concerns the measurement of political efficacy. When respondents are asked about hindrances preventing them from participating politically, it could be that those without participation spent less time carefully answering the question. Respondents who, for their lack of care, just reported fewer hindrances would have been inaccurately coded as expressing high political efficacy. However, the question is framed toward providing explanations for a *lack* of political participation, which is why I would expect that, if anything, citizens *without* participatory experience spend *more* time answering this question, and are more likely to say online participation is ineffective compared to citizens with participatory experience and similar levels of efficacy. As this should bias me toward observing low efficacy among non-participants and higher efficacy among participants, I am confident that the identified negative correlation between efficacy and participation indeed reflects the hypothesized disenchantment effect.

Given the observational nature of the survey data, there remains the possibility of other unobserved confounders. For example, the survey unfortunately does not include measurements of ideology,[22] or trust in the central and local government, which might affect both online political efficacy and online political participation. However, it seems unlikely that ideology and trust in central and local governments could explain the observed negative correlation, as this would require them to affect efficacy and participation in opposite directions.

5.2 | Online Fieldwork Evidence

I now turn to evidence from the Zhihu fieldwork. While information in China is heavily censored, there is still ample space for criticism, especially in areas unrelated to collective activism (Gallagher and Miller 2021; Gueorguiev and Malesky 2019; King, Pan, and Roberts 2013, 2014; Roberts 2018). Zhihu users are relatively younger and more educated than the average, so one might expect a more critical discourse. At the same time, very negative posts might be censored. Thus, I have no strong a priori tendency toward suspecting Zhihu comments to be more or less critical than the "true" attitudes in China. If the disenchantment effect were true, I would expect users on Zhihu to report many experiences with surprisingly ineffective online political participation, and I would expect that these negative experiences are often the first experiences that users have had with online political participation.

During the investigation of each individual thread, some signs of censorship turned up. One critical thread had no comments despite an extraordinarily high amount of likes (24,000). It directly stated that "the comments section has been closed." Besides, while all Q&A threads show the number of answers at the top, this number did not always match the amount of visible answers. Users might also self-censor as they are afraid of expressing negative views (Robinson and Tannenberg 2019). Censorship should bias me toward observing more positive comments.

In hand-coding the 3252 comments, I first decided whether the comments contained any explicit view on the effectiveness of online political participation, to capture political efficacy. Excluding duplicates or repeated comments about the same experience by the same user, I identified 371 such comments, which I call "efficacy comments." For these 371 efficacy comments, I coded the following variables: effectiveness (effective/ineffective/depending on circumstances or unclear),[23] explicitly referring to personal experience (yes/no), and the channel to which a comment referred, if identifiable.

As can be seen in Table 4, most efficacy comments express ineffectiveness (55.5%). About one-third of efficacy comments express effectiveness (31.3%), and the rest (13.2%) say effectiveness depends on the circumstances or is ambiguous. The proportion of comments expressing ineffectiveness was largest in 2022 (67.7%) and decreased in the subsequent years. While a chi-square test yields $p = 0.02$, suggesting some dependence between time and expressed effectiveness, given the non-randomness of the sample, one should be careful when interpreting this trend as representative of a broader trend in the Chinese population. When investigating only those efficacy comments that explicitly refer to a personal experience (237 comments in total, see Appendix A), there is no significant difference in their distribution to the full 371 efficacy comments.[24]

Comments often refer to specific channels like hotlines, the State Council app, or LMB. However, many comments do not refer to any channel or just refer to "official websites." One potentially meaningful difference is between hotlines and other channels,[25] so I aggregate all comments unambiguously referring to hotlines and treat all other comments as referring to other channels. As can be seen in Table 4, while comments on hotlines express slightly more effectiveness, this difference is not statistically significant.[26] The survey data also does not indicate differences between hotlines and other channels. Model 8 in Appendices D and E investigates the subset of respondents with low frequency of participation (0 or 1–2 times) and adds the variable *used_govt_hotline* that equals 1 for respondents with participatory experience who respond they have used hotlines (based on Question 12, see Appendix F). As can be seen, holding other factors constant, there are no significant differences in efficacy among those who have used hotlines and those who have used other channels for their first participatory experiences.

While some comments coded as "inefficient" are as short as "[I] left a message once, it is really useless, no one solves problems,"[27] some longer comments looked like this one:

> I graduated and then went to report [on LMB] a high school teacher who was corrupt and verbally abused students. The Education Department made a symbolic phone call to ask, acting only perfunctorily (*fuyan*), and the reported teacher did not receive any punishment. You can try yourself; if you are retaliated against, the worst that can happen is that you have to change classes.[28]

During the hand-coding, I was quickly surprised by the large number of comments expressing strong privacy concerns, so I added the dummy variable "concerned with privacy" to my coding procedure and coded this variable for all 3232 comments. I coded comments as "concerned" if they referred to the leakage of private information in a negative light or to reprisal experience or fear of reprisal. Among the 371 efficacy comments, about 12% (44 comments) expressed such concern. For example, one user commented:

> Two days ago, I left a message [on LMB], and today, a lower-level official came to my door, grasping my phone and asking me to delete the message! I've been receiving constant calls, and they even took me to the community center to register this incident! The problem was not solved. I, a pregnant woman, was terrified! I will never leave a message again! Too disgusting! Privacy is not protected[29]

TABLE 4 | Descriptive overview of Zhihu comments.

		By year								By channel	
	Total	2015–2017	2018	2019	2020	2021	2022	2023	2024[a]	Hotline	Other channel
% effective	31.3	66.7	66.7	33.3	44.9	28.9	16.1	38.5	37.5	31.3	31.3
% ineffective	55.5	33.3	16.7	50.0	46.9	57.8	67.7	52.3	45.0	59.5	52.4
% depends on circumstances or unclear	13.2	0	16.7	16.7	8.1	13.4	16.1	9.2	17.5	9.2	16.3
Total number	371	3	6	12	49	97	99	65	40	163	208

[a]Given that the web-scraping was conducted in May 2024, all Zhihu comments in 2024 are from before mid-May 2024.

Given my conservative hand-coding of effectiveness (only coding as unsuccessful if explicit), if there are doubts about whether or not problems were solved, I did not include comments in the efficacy subset. Still, among those 2881 other comments, about 3% (84 comments) express privacy concerns.[30] This is quite substantial given that some of the 2881 comments discuss topics other than online political participation (e.g., work conditions in 12345 hotline offices). Tellingly, 10 threads are entirely concerned with how to delete one's post on LMB, as many of those who have made a post on LMB seem to regret it out of fear of reprisal. Even experiences in which the problem was solved sometimes include details about privacy leakages, such as this one:

> I complained through 12345, chose "anonymous" and "phone number invisible" .... Then, the work unit (*danwei*) I complained about called me directly. They reported my name and home address and asked if that was me and if I had complained about something. I said yes. Their attitude was quite good, and they communicated in detail with me .... Although the matter was finally resolved, but .... This, where the hell is the protection of the privacy of the complainant???? Just like this????[31]

Zhihu users mainly express two reasons why their demands are not being solved. First, many users stress that the departments handling the complaints have no actual power and just pass their demands to other government units. For example, one user complained, "It doesn't work, I've personally tested it [12345 hotline]. When I call, they just kick the ball around (*ti piqiu*)! They don't co-ordinate whatsoever, and they say they also can't do anything about it."[32] This indeed seems to be a substantial challenge in petitioning and responsiveness work, as scholars have observed similar problems with complaint letters more than 20 years ago (Li 2004, 245) or find that many new participatory channels in developing countries are expectations-rising but ultimately fail to deliver for lack of change in political structures (Hossain, Joshi, and Pande 2023).

Another reason Zhihu users identify is that channels to voice demands and suggestions mainly serve psychological or emotional functions. For instance, one user explains:

> I have been pursuing the protection of my rights (*weiquan*) for a year, and today, I received the regretful news that they cannot resolve the issue either. The mayor's hotline is a standardized path [for addressing grievances], but since it lacks administrative enforcement powers, it can only provide psychological comfort and lacks the authority to solve issues.[33]

This is in line with recent research by Hou (2020), who stresses the emotional repression function in the petitioning system, offline and online in hotlines (Hou 2023), and can also be linked to the official function of petitioning work to educate citizens on their political thoughts (T. Zhang 2022).

A small portion of efficacy comments express that effectiveness depends on the circumstances or is unclear (13.2%). Among those who are explicit about these circumstances, many stress that serious issues are less likely to be solved than minor problems[34] or mention spatial differences (e.g., participation is more effective in bigger cities). Among those comments that express effectiveness (31.3%), many citizens express surprise with the warmth, kindness, or speed of responsiveness they encountered.

Taken together, the high proportion of negative experiences on Zhihu seems to confirm the hypothesized disenchantment effect. While most negative posts do not explicitly declare that they are about citizens' first experiences with online political participation, Zhihu users express substantial surprise about the low effectiveness of their online political participation. A major challenge to the Zhihu evidence is that it is unclear which people post on Zhihu, why they do so, and which posts are censored. Nonetheless, Zhihu users arguably somewhat resemble the portion of Chinese citizens who are politically active online, and it seems plausible that Zhihu users' tendency to post about their online political experience is, on average, related to how much they were surprised and how much their online political efficacy changed. Thus, I interpret the Zhihu evidence as supportive of the hypothesized disenchantment effect. Surprisingly, privacy issues are of great concern to Zhihu users, which could be a fruitful area of future research.

5.3 | Discussion

This study has argued in favor of a disenchantment effect; however, much evidence indicates widespread responsiveness, which may seem to contradict the disenchantment effect.[35] Survey respondents express quite high levels of external efficacy (73%) and internal efficacy (79%),[36] suggesting they perceive government responsiveness as relatively high and experience many effective interactions with the government. I argue that it is key to consider citizens' expectations about responsiveness when making sense of these potentially hard-to-square findings. Citizens who expect high governmental responsiveness will only slightly adjust their sense of efficacy upwards when experiencing a positive government reaction. Meanwhile, if these very optimistic citizens experience a lack of governmental responsiveness, their sense of efficacy decreases a lot. In other words, citizens in China may well experience a government that is mostly responsive to their online political participation, but since citizens have overly high expectations, online political participation, on average, decreases online political efficacy. Even Zhihu users might well have experienced more occasions of a responsive than an unresponsive government, but given their low surprise with responsiveness, they posted more about their surprising negative experiences. Thus, it is important to keep in mind that the disenchantment effect does not equal low responsiveness.

How widely can the study's findings be generalized to other forms of political participation? Most importantly, the disenchantment effect might only be observed when citizens have overly optimistic expectations toward the effectiveness of online

political participation, which might not be the case under at least three circumstances. First, in those regimes that employ "soft propaganda" to successfully convince citizens, this scope condition is likely to be met. In the case of regimes that mainly deploy "hard propaganda," which tries to demonstrate the regime's strength rather than persuade (Huang 2015, 2018); however, this argument might not apply. Second, I would expect the disenchantment experience to be weak in cases where channels are relatively old and where many citizens have used them, as it would then be unlikely that many citizens have overly optimistic expectations since accurate information is easily accessible. In the context of online political participation in China, this would suggest that if more and more people gather experience with these channels and the channels do not change, the disenchantment effect might grow weaker over time. If, in turn, an innovative new digital channel is created, I would expect a strong disenchantment effect. Third, I would expect the disenchantment effect to largely disappear when the *actual* responsiveness of a government has recently increased. For example, in the context of village election reforms in China in the 1990s, when actual state responsiveness arguably grew, the political efficacy of those citizens who participated in the elections and removed unpopular cadres understandably increased (Li 2003). Thus, it might be that in the case of digital participation in China, propaganda about high government responsiveness through new online channels far exceeds any changes in actual responsiveness, which is why citizens make the identified disenchantment experiences.

Discussing citizens' expectation of government responsiveness might also be interesting for research on political participation and efficacy in democracies. Existing studies usually estimate linear and homogenous effects between political efficacy and political participation (Finkel 1985; Karp and Banducci 2008; Oser et al. 2022; Quintelier and Van Deth 2014), largely finding positive effects in one or both directions. This study's findings suggest that effects of political participation on efficacy are non-linear and heterogeneous in predictable ways. First, citizens' feelings of efficacy might be more affected when citizens make early participatory experiences, and less so when they are already well-experienced (non-linear effect). Second, citizens' expectations of responsiveness might act as an important moderator determining how citizens' efficacy is affected by their political participation (heterogeneity). I suspect that citizens' socialization, media consumption, networks, and education are important factors leading to diverging expectations. Hopefully, future research can take into account these factors and improve research on the relationship between political participation and efficacy in democracies. All of this should not, of course, distract from the fact that actual governmental responsiveness certainly also plays a key role in determining how citizens' attitude change as a result of political participation (e.g., see Karp and Banducci 2008). Still, citizens in similar institutional contexts engaging in similar forms of political participation might see their political attitudes change in different ways, and investigating their expectations of might illuminate these differences.

This study has focused on "absolute online political efficacy," arguing that this best captures citizens' experiences with online political participation. Had this study used general political efficacy or "relative online political efficacy" as dependent variables, the identified disenchantment effect would probably not have shown up. Given that citizens' political participation through new online channels is influenced mainly by citizens' absolute online political efficacy (rather than their general political efficacy and their relative online political efficacy), this seems a valuable concept in investigating how newly set-up digital participatory channels in authoritarian regimes are used and affect authoritarian governance. Nonetheless, this study has measured absolute online political efficacy in a binary fashion, based on a single survey question, and its validity should be further investigated and strengthened. This could be done by developing multiple question items, using ordinal instead of binary measurements, or by measuring different types of political efficacy and comparing them.[37]

Speaking to the broader debate on whether authoritarian regimes employ digital technologies primarily to improve service delivery and increase responsiveness (Gao and Tan 2020) or to strengthen surveillance, co-optation, and repression, which would lead to decreases in responsiveness (Schlumberger et al. 2024; Xu 2021), this study cautions against hastily associating the impressive expansion and presence of digital participatory channels in authoritarian regimes, their high satisfaction rates, or even citizens' preferences for using online instead of offline channels to express political demands with improvements in actual responsiveness. While this is certainly a possibility, alternative scenarios also exist. Most importantly, available channels and modes of political participation have changed during digitalization. New channels (often digital) have emerged, but crucially, offline channels have also changed. In China, offline collective political participation has been increasingly restricted (Fu and Distelhorst 2018), and seeking personal political help from one's superior in government work units (*danwei*), once described as common by Shi (1997), has largely disappeared. Thus, citizens who express a preference for participating politically online instead of offline might simply believe that *current* online channels are more effective, convenient, or safe than *current* offline channels. We should be careful in inferring what these citizens think about temporal changes in general levels of responsiveness.

Another concern with this study might be that its findings are limited to the context of the Corona pandemic, which was very much present in mid-2021, when the survey was conducted. Possibly, many government resources were dedicated to issues other than responsiveness to online political participation during that time, which led to a sudden perceived decline in responsiveness. I think this is unlikely. During the pandemic, the government created online hashtags to facilitate citizens' online expressions on pandemic-related problems (Wei, Yao, and Zhang 2023), which suggests that the government was quite concerned about responsiveness to online requests for help. Moreover, the Zhihu evidence does not support this view. Of the 371 efficacy comments, less than 4% (14) mention Covid. In their assessment of the effectiveness of participation, these 14 comments are also quite similar to the broader distribution.[38] Ultimately, during 2020, when the harshest lockdowns took place, there was no visible increase in negative efficacy comments compared with earlier or later years.

This suggests Covid is not a big driver of the observed disenchantment effect.

6 | Information-Propaganda Trade-Off

Based on the above findings of a "disenchantment effect," this section develops what I term the "information-propaganda trade-off," which is an argument about a trade-off that authoritarian regimes face in encouraging or limiting political participation. Authoritarian regimes need information that they can gain through political participation.[39] However, the more citizens participate, the less effective propaganda is in convincing citizens of the regime's benevolence and responsiveness, as participating citizens gather first-hand experiences and grow more resistant to propaganda. Thus, if an authoritarian regime wants to increase the information it gains through political participation and thus successfully encourages broader political participation, its propaganda will become less convincing. On the other hand, successfully discouraging citizens from participating politically and possibly depoliticizing them will reduce useful information flows to the regime, but might lay the basis for more persuasive propaganda on the regime's responsiveness.

This argument is not entirely new. Existing scholarship has discussed what might be called a censorship-information trade-off (Egorov, Guriev, and Sonin 2009; Lorentzen 2014; Qin, Strömberg, and Wu 2017) or a repression-information trade-off (Gohdes 2020; E. Yang 2023). The more prevalent censorship and repression are, the less information the autocrat can gain, and the more difficult targeted censorship and repression will be. Meanwhile, less censorship and repression lead to better information, but at the cost of more negative news, potentially discontent citizens, and anti-regime protests.

This paper's argument differs in that it goes beyond the importance of media freedom and stresses the relationship between political participation and the effectiveness of propaganda. Some scholars have argued that the censorship-information trade-off might be partially solved by gathering information not through public or "overt" channels such as media, but through private or "latent" channels such as offline and online complaints (Dimitrov 2023). Channels such as online government platforms and hotlines enable authoritarian regimes to gather valuable information without reducing censorship, as the gathered information and respective political participation are largely hidden from the public. Speaking to that literature, the information-propaganda trade-off highlights the costs of even these private channels. Even citizens who participate through private instead of public channels will become disillusioned and grow more resistant to propaganda if their propaganda-induced beliefs in the regime's high responsiveness are not fulfilled.

The information-propaganda trade-off also contributes to debates about the scope and limits of participatory channels in authoritarian regimes. Much literature argues that despite its many benefits, political participation in autocracies also exerts potentially regime-threatening effects, as citizens who engage in political participation might doubt the regime's legitimacy and demand more accountability and democracy (He and Warren 2011; O'Brien and Han 2009; Schubert 2002; Truex 2017). Most agree that there is thus a "fine line" between issues and areas in which political participation is beneficial for the government, and in which it is not (Marquis and Bird 2018, 949; Van Rooij et al. 2013; Van Rooij, Stern, and Fürst 2016, 4), but leave the exact location of this imprecise fine line open. Plausibly, political participation in "sensitive" or "strong preference" issues, where the government would not adjust its policy even if it knew citizens' diverging preferences, is restricted (Truex 2016). This study contributes to this debate by arguing that participatory channels also come at the cost of making propaganda about the regime's responsiveness less effective. Thus, even if information gained from political participation is useful, is not sensitive, and does not lead to demands for democratization, autocrats might still choose to restrict political participation to a small portion of citizens, in order to enable propaganda to more effectively influence the non-participating citizens.

While the information-propaganda trade-off argues that disenchanted citizens decrease their political participation in the future, thereby depriving regimes of important information, this does not mean that all disenchanted citizens completely abstain from participating. Disenchanted citizens might still participate if they perceive a minimum amount of responsiveness. More specifically, they will likely restrict their political participation to areas where they think it is still effective. For example, the quoted citizen above who unsuccessfully reported a corrupt and abusive teacher in high school might decide not to report similar corruption cases in the future but still participate in less severe issues. Meanwhile, citizens might also participate politically for other reasons, such as a sense of duty (Reuter 2021). For example, one citizen who had personal experience with various forms of online political participation stated that she felt she should express and contribute her personal views and experiences in relevant draft law consultation campaigns, believing the government would take the right decision no matter how it ultimately adjusted the law.[40]

Although the information-propaganda trade-off would predict the observed disenchantment effect at the individual level, it also has many other implications that this paper did not explicitly test. For example, future research might investigate at the aggregate level if areas or regimes with less political participation indeed enable more persuasive propaganda.

7 | Conclusion

While it seems plausible that online political participation provides useful information to authoritarian regimes, thereby solving the autocrat's information problem, existing literature has largely ignored how citizens—key actors of this informational function—actually experience online political participation. Citizens' experiences are important, as they determine how online political participation channels are ultimately used and which information authoritarian regimes can draw on to govern. This paper focuses on online political participation in China, drawing on survey data and online fieldwork. I find evidence suggesting that initial online political participation significantly *decreases* feelings of online political efficacy through a disillusioning process in which participating citizens gather first-hand experience,

see through the propaganda, and thus lower their beliefs in the regime's responsiveness. On this basis, I develop a theory of an "information-propaganda trade-off" that authoritarian regimes face: to obtain more information, authoritarian regimes can encourage more citizens to participate. If citizens participate, however, they gather first-hand experience and grow "disenchanted" as they see through the propaganda and lower their beliefs in the regime's responsiveness, making propaganda less useful.

Future research might focus on the state side and investigate how exactly information gathered from online political participation is used. While there is research by Dimitrov (2014, 2015) showing how authoritarian states make use of citizen complaints, much online political participation in China is very individualistic in its aims, such as complaints about excessively loud neighbors or the failure of one's boss to pay one's salary on time. It is hard to see how such information contributes to better policies or the effective supervision of bureaucrats. Instead, responsiveness to these types of political participation might be less concerned with improving policy and supervising bureaucrats, but mainly concerned with solving individuals' problems and providing a convincing picture of a service-oriented government (*fuwuxing zhengfu*), which would be more related to the legitimacy function (and not the informational function) of political participation. Indeed, recent research has suggested that the primary goal of setting up channels for online participation in China is to appear responsive instead of being responsive (Wang and Han 2023) or to signal innovation and responsiveness to superiors within the bureaucratic hierarchy (Göbel and Li 2021; Pan and Chen 2018). Other research also stresses that, in some cases, autocrats already possess sufficient information but simply lack the capacity to act effectively on this information (Dimitrov 2023; Ding 2020; Van der Kamp 2023). In these cases, political participation provides little useful information. It seems likely that the functions of online political participation vary substantially across different issues, channels, bureaucratic levels and agencies, and modes of political participation. Given that existing literature insufficiently distinguishes these differences, future research would be well-advised to carefully investigate these differences in order to further advance our knowledge.

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Conflicts of Interest

The author declares no conflicts of interest.

Data Availability Statement

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

Endnotes

[1] The more recent 2022 e-government survey (United Nations 2022) changed the measurement of e-participation, which made the world average e-participation index fall by about 20% and decreased the number of countries coded authoritarian by Geddes, Wright, and Frantz (2014) that achieved a high or very high e-participation index to 16.

[2] I use authoritarian regime, autocracy and autocrat as synonyms, denoting non-democratic regimes.

[3] Wintrobe (1998, p. 20) coined the term "dictator's dilemma," referring to autocrats' inability to "know whether the population genuinely worships them or worships them because they command such worship." Note that this article's "autocrat's information problem" is broader, also referring to the lack of information about citizens' policy preferences, the performance of lower-level bureaucrats, and firms' compliance with legal and societal expectations.

[4] For example, Art. 1 (7) of the Chinese Communist Party constitution demands all party members to listen to the masses and report the opinions of the masses to the party.

[5] I use efficacy, political efficacy, and efficacy beliefs as synonyms.

[6] For an overview of these debates, see for example Boulianne (2009, 2020) and Nam (2012).

[7] A possible limitation of conceptualizing online political efficacy as "absolute" is that it has difficulties accounting for what one could call interaction effects between offline and online political participation. For example, one might perceive it hard to influence politics by either acting only online or only offline, but belief one can excert a large impact by being active online and offline at the same time. As these types of interaction effects are rare in China, I deem the absolute concept of online political efficacy useful for this study.

[8] In the 2022 UN E-government survey, China was ranked 13 for its e-participation index, slightly behind the US (rank 10), but just ahead of Canada (rank 14), and way ahead of Germany, Sweden (both rank 32) and France (rank 37) (United Nations 2022). Singapore (rank 4), Kazachstan (rank 15), and United Arab Emirates (rank 18) were other highly ranked autocracies. One might expect that citizens are positively surprised when participating politically online in these regimes.

[9] https://www.suzhou.gov.cn/szsrmzf/szyw/202201/fbc200dcac8948f9871d118a8c763809.shtml (archived at https://tinyurl.com/u2rxjuhd).

[10] http://www.baoji.gov.cn/art/2021/8/27/art_16564_1415730.html (archived at https://tinyurl.com/tusm89tr).

[11] http://www.qidong.gov.cn/qdsrmzf/12345rxgzbg/content/439a06f6-9ca7-4264-999b-ba120bee6da3.html (archived at https://tinyurl.com/yytb36u2).

[12] https://zwfw.taizhou.gov.cn/zfxxgk/fdzdgknr/12345rxnb/art/2022/art_f9ddb03b6bbf45dc81882fc87532115f.html (archived at https://tinyurl.com/5n75v2a3).

[13] The 12 options were: I do not know I can express my opinion on public affairs, I do not know where to express my opinion, I do not know how it works, I have security concerns, I have data privacy concerns, I think it is not effective, I do not have the time, I am not interested, I find it difficult to operate, I do not have complaints to express, Other, There are no hindrances. See Question 15 in Appendix F.

[14] $(1 - \exp(-0.098 * 5))$.

[15] Note that measuring frequency of participation as (0, 1, 2, 3, 4, 5), based on the original responses (0, 1–2, 3–5, 6–10, 11–20, 20+ times), already assumes decreasing effects of one additional participatory experience. If this transformation were unwarranted (i.e., one additional participatory experience had constant effects),

it could lead to a significant coefficient for the term *frequency_of_participˆ2* in the quadratic Model 3 in Appendices D and E. This coefficient should thus be interpreted with caution. However, the below findings of a strong effect of *particip_zero* and insignificant effect of *frequency_of_particip* in Model 3 in Tables 2 and 3, and a strong negative effect of *frequency_of_particip* in the quadratic Model 3 in Appendices D and E cannot be the artifact of such an unwarranted transformation. Instead, they suggest important nonlinear effects of frequency of participation beyond simply decreasing effects.

[16] $(1 - \exp(-0.569 + 0.032))$.

[17] $(1 - \exp(-1.495 + 0.033))$.

[18] $(1 - \exp(-1.495 + 0.033 - (4 * -0.341)))$.

[19] I thank the anonymous reviewers for helping to clarify this point.

[20] Alternatively, venting might also lead to decreasing political efficacy through a mechanism different from this paper's disenchantment effect: venting citizens might observe many other venting citizens and this exposure to large amounts of critical information might then decrease their political trust and political efficacy.

[21] I thank an anonymous reviewer for helping to clarify this point.

[22] I thank an anonymous reviewer for raising this point.

[23] For example, some comments expressed that their political participation had not yet led to any success but still retained some hope. These comments were coded as "unclear."

[24] A chi-squared test comparing the aggregated frequencies of effectiveness of all efficacy comments (371 comments) with only those containing explicit personal experience (237 comments) yields $p = 0.2$.

[25] Official sources are highly optimistic about hotlines, frequently reporting satisfaction rates close to 100%. This could lead citizens who use hotlines instead of other channels to be either more disenchanted (overly high expectations are not met) or less disenchanted (hotlines do provide greater responsiveness).

[26] A chi-squared test comparing effectiveness by channels gives $p = 0.1$ for the 371 efficacy comments and $p = 0.7$ for the 237 comments subset that includes explicit personal experience.

[27] Zhihu comment from late 2023.

[28] Zhihu comment from late 2022.

[29] Zhihu comment from late 2021.

[30] For example this one, which is not included in the efficacy comments since it not directly discusses effectiveness of participation: "I also called to complain. [I'm] very scared. They already called my father, and then my father scolded me. If [my] phone number is not protected so be it, but why the heck can they also find out my name?" Zhihu comment from mid-2020.

[31] Zhihu comment from late 2022, punctuation as in the original.

[32] Zhihu comment from early 2020.

[33] Zhihu comment from late 2021.

[34] For example, "I feel that [official websites] are useful if you report citizens, but if you report government officials it's useless" (Zhihu comment from mid-2022), "Small problems can be solved, but it's useless for big problems, there it's just formalism" (Zhihu comment from early 2022).

[35] I thank an anonymous reviewer for helping to clarify this point.

[36] Even among respondents with participatory experience, external efficacy (70%) and internal efficacy (75%) are quite high.

[37] Unfortunately, the survey this study draws on did not include items on general political efficacy and relative political efficacy.

[38] They were coded as: ineffective (8), effective (5), depends on circumstances, or unclear (1).

[39] Alternatively, this trade-off could be called the "participation-propaganda trade-off."

[40] Interview by author in Zhejiang, March 2024.

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Appendix A

Overview of Zhihu Comments With Explicit Personal Experience

Table shows distribution of those 237 Zhihu comments that express views on efficacy and contain explicit references to personal experience.

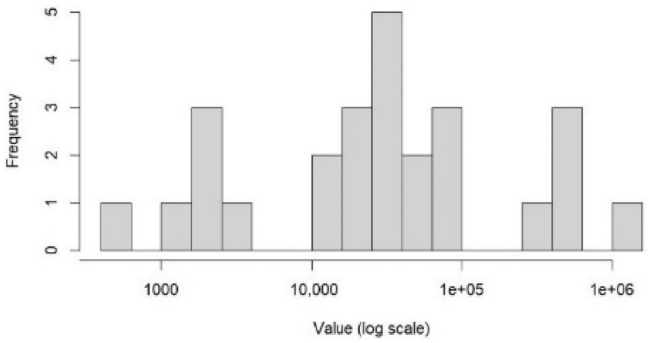
		By year								By channel	
	Total	**2015–2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024***	**Hot-line**	**Other channels**
% effective	32.9	50.0	80.0	20.0	44.7	29.2	15.9	44.4	43.5	33.3	32.6
% ineffective	58.7	50.0	20.0	80.0	47.4	64.6	69.8	52.8	43.5	60.2	57.6
% depends on circumstances or unclear	8.4	0	0	0	7.9	6.5	14.3	2.8	13.3	6.5	9.7
Total number	237	2	5	5	38	65	63	36	23	93	144

*Given that the web-scraping was conducted in May 2024, all Zhihu comments in 2024 are from before mid-May 2024.

Appendix B

Histogram of Number of Likes of Zhihu Threads

Figure shows number of likes of Zhihu threads. Note that *zhuanlan* threads are excluded since they do not have like counts. Only those Q&A threads are included in which efficacy comments were identified.



Appendix C

Descriptive Overview of Various Variables

Note that Tables C1–C3 only include those respondents who say they have heard about at least one online channel (Question 11 in Appendix F), a total of 2842.

TABLE C1 | Descriptive overview of variables.

	Min	Max	Mean	SD	Median
frequency_of_particip	0	5	1.39	1.13	1
external_efficacy	0	1	0.73	0.44	1
internal_efficacy	0	1	0.79	0.41	1
particip_zero	0	1	0.26	0.44	0
mobile_phone_usage	1	10	8.39	1.45	9
female	0	1	0.49	0.50	0
age	18	64	37.38	12.11	36
income	1	10	5.85	2.51	6
CCP	0	1	0.28	0.45	0
other_party	0	1	0.01	0.09	0
CYL	0	1	0.26	0.44	0
any_party_or_CYL	0	1	0.50	0.50	1
education	0	4	2.76	0.64	3
life_satisfaction	1	10	7.95	1.52	8
concerns_count	0	7	3.93	1.59	4
free_riding_attitude	1	5	2.97	1.06	3
benefits_outweigh_risks_online	1	10	7.78	1.46	8
used_govt_hotline	0	1	0.38	0.49	0

TABLE C2 | Employment variable.

	Frequency	Percentage
working	2284	0.8037
studying	267	0.0939
retired	230	0.0809
unemployed	36	0.0127
other	25	0.0088

Note: Table lists frequencies of the categorial variable "employment". Note that *working* includes the original answers: "employed working full-time," "employed working part-time," "employer or self-employed." *Studying* includes the original answer "In school, university or practical training." *Retired* includes only the answer "retired." *Unemployed* includes only "Not employed, looking for work." *Other* includes "unable to work due to disability or illness" and "Other." See Question 4 in Appendix F.

TABLE C3 | Type of city.

	Frequency	Percentage
First-tier city	2077	0.7308
Other city	598	0.2104
Town	125	0.0440
Countryside	42	0.0148

Note: Table lists frequencies of the categorial variable "type of city." See Question 6 in Appendix F.

Appendix D

The Effects of Frequency of Participation on External Efficacy II

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
freqency_of_particip	−0.110**	−0.096**	−0.432***	0.033	0.030		0.035	−0.464***
	(0.044)	(0.044)	(0.121)	(0.058)	(0.058)		(0.058)	(0.156)
frequency_of_particip ^ 2			0.094***					
			(0.032)					
particip_zero				0.792***	0.600***	0.564**	0.572***	
				(0.193)	(0.167)	(0.247)	(0.159)	
particip_zero * CCP_or_CYL				−0.510**				
				(0.241)				
particip_zero * any_party					−0.195			
					(0.310)			
particip_zero * any_party_or_CYL						−0.522		
						(0.359)		
education	−0.148	−0.131	−0.125	−0.106	−0.119	−0.085	−0.113	−0.325**
	(0.094)	(0.094)	(0.094)	(0.094)	(0.093)	(0.172)	(0.094)	(0.131)
CCP	−0.039	−0.037	−0.030				−0.023	0.093
	(0.105)	(0.105)	(0.105)				(0.105)	(0.165)
other_party	−0.172	−0.201	−0.211				−0.192	0.056
	(0.503)	(0.501)	(0.501)				(0.502)	(0.869)
CCP_or_CYL				0.040				
				(0.105)				
any_party_or_CYL						0.123		
						(0.260)		
CYL	−0.067	−0.041	−0.055				−0.039	0.049
	(0.118)	(0.118)	(0.118)				(0.118)	(0.173)
free_riding_attitude	−0.112**							
	(0.044)							
any_party					−0.014			
					(0.108)			
used_govt_hotline								−0.093
								(0.161)
mobile_phone_usage	−0.101***	−0.100***	−0.094***	−0.095***	−0.096***	−0.047	−0.094***	−0.051
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.056)	(0.034)	(0.044)
female	0.004	−0.003	0.004	0.019	0.004	−0.125	0.006	−0.064
	(0.092)	(0.092)	(0.092)	(0.092)	(0.092)	(0.181)	(0.092)	(0.132)
age	−0.026	−0.021	−0.025	−0.025	−0.023	−0.124*	−0.024	−0.081
	(0.037)	(0.037)	(0.037)	(0.036)	(0.036)	(0.070)	(0.037)	(0.051)
age_squared	0.0004	0.0003	0.0004	0.0004	0.0003	0.002*	0.0004	0.001
	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.001)	(0.0005)	(0.001)
income	0.063***	0.059**	0.062**	0.061**	0.060**	0.146***	0.059**	0.051
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.047)	(0.024)	(0.033)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
life_satisfaction	0.233***	0.231***	0.232***	0.229***	0.231***	0.305***	0.232***	0.289***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.054)	(0.032)	(0.042)
concerns_count		−0.016					−0.019	
		(0.029)					(0.029)	
Constant	1.383	0.996	1.010	0.384	0.483	0.325	0.575	1.622
	(0.956)	(0.943)	(0.943)	(0.947)	(0.945)	(1.540)	(0.953)	(1.182)
Observations	2842	2842	2842	2842	2842	1023	2842	1611
Akaike Inf. Crit. (AIC)	3199.293	3205.570	3196.700	3186.642	3190.733	988.757	3194.481	1692.999

Note: Table shows logistic regression coefficients. Independent variables that are not shown include: province, type of employment, and size of city. Model 6 uses a subset of respondents with zero or minimal frequency of participation that have not used social media to express themselves. Model 8 uses a subset of respondents with zero or minimal frequency of participation. Standard errors in parentheses. Significance levels: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Appendix E

The Effects of Frequency of Participation on Internal Efficacy II

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
frequency_of_particip	−0.149***	−0.122***	−0.542***	−0.025	−0.028		0.005	−0.578***
	(0.047)	(0.047)	(0.132)	(0.060)	(0.060)		(0.061)	(0.170)
frequency_of_particip ^ 2			0.110***					
			(0.034)					
particip_zero				0.576***	0.592***	0.665**	0.591***	
				(0.218)	(0.182)	(0.277)	(0.175)	
particip_zero * CCP_or_CYL				−0.051				
				(0.270)				
particip_zero * any_party					−0.149			
					(0.352)			
particip_zero * any_party _or CYL						−0.476		
						(0.394)		
education	−0.067	−0.021	−0.047	−0.048	−0.074	−0.023	−0.004	0.052
	(0.100)	(0.101)	(0.100)	(0.100)	(0.100)	(0.193)	(0.101)	(0.140)
CCP	−0.203*	−0.174	−0.189*				−0.163	−0.208
	(0.113)	(0.113)	(0.113)				(0.113)	(0.182)
other_party	−0.579	−0.553	−0.597				−0.547	−1.467**
	(0.487)	(0.490)	(0.487)				(0.490)	(0.722)
CCP_or_CYL				−0.310***				
				(0.114)				
any_party_or_CYL						0.182		
						(0.277)		
CYL	−0.419***	−0.366***	−0.411***				−0.365***	−0.347*
	(0.122)	(0.122)	(0.122)				(0.122)	(0.180)
free_riding_attitude	−0.093**							
	(0.046)							
any_party					−0.118			
					(0.114)			

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
used_govt_hotline								0.144
								(0.171)
mobile_phone_usage	−0.094**	−0.083**	−0.085**	−0.088**	−0.086**	−0.081	−0.077**	−0.070
	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.064)	(0.037)	(0.048)
female	0.006	0.011	0.005	−0.005	−0.012	0.010	0.014	−0.004
	(0.099)	(0.099)	(0.099)	(0.099)	(0.098)	(0.195)	(0.099)	(0.143)
age	0.094**	0.103***	0.095**	0.104***	0.114***	0.104	0.100***	0.151***
	(0.039)	(0.039)	(0.039)	(0.038)	(0.038)	(0.073)	(0.039)	(0.052)
age_squared	−0.001*	−0.001**	−0.001*	−0.001**	−0.001**	−0.001	−0.001**	−0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
income	0.063**	0.062**	0.062**	0.062**	0.066***	0.039	0.061**	0.017
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.050)	(0.026)	(0.036)
life_satisfaction	0.029	0.030	0.027	0.031	0.024	0.057	0.028	0.022
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.060)	(0.035)	(0.046)
concerns_count		−0.134***					−0.137***	
		(0.032)					(0.032)	
Constant	1.326	1.177	1.040	0.412	0.201	0.324	0.769	0.629
	(1.062)	(1.055)	(1.050)	(1.053)	(1.052)	(1.773)	(1.064)	(1.455)
Observations	2842	2842	2842	2842	2842	1023	2842	1611
Akaike Inf. Crit. (AIC)	2899.877	2885.796	2892.710	2895.550	2902.684	895.937	2876.162	1530.088

Note: Table shows logistic regression coefficients. Independent variables that are not shown include: province, type of employment, and size of city. Note that Model 6 uses a subset of respondents with zero or minimal frequency of participation. Model 8 uses a subset of respondents with zero or minimal frequency of participation. Standard errors in parentheses. Significance levels: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Appendix F

Online Survey Questionnaire and Translation

Note that questions were asked in Chinese. The questions were asked in the below order, but questions not discussed in this paper are omitted from the below list.

1. **Sex**

Note that the category "other" (其它) was coded as the mean between male and female for the statistical analysis.

您的性别是?

请从下列选项中选择一项

1. 男性
2. 女性
98. 其他

What is your gender?

Please select.

1. Male
2. Female
98. Other

2. **Age**

您的年龄是?(请输入数字).

What is your age? (please write a number)

3. **Education**

Note that this variable was recoded from 0 to 4.

您的最高学历是?

1. 无教育经历
2. 小学或初中
3. 高中
4. 本科或专科
5. 硕士或博士

What is the highest level of education you have completed? Please select.

1. I do not have a formal education
2. Primary school or middle school
3. High school
4. Bachelor's degree or vocational training
5. Master's degree or Ph.D. degree

4. **Employment**

您的就业情况是? (单选题)

1. 临时雇员
2. 全职雇员
3. 雇主或自主创业
4. 学生

5. 待业

6. 无就业能力

7.退休

98. 其他

Which of the following best describes your employment status?
Please select.

1. Employed, working part-time
2. Employed, working full-time
3. Employer or self-employed
4. In school, university or practical training
5. Not employed, looking for work
6. Unable to work due to disability or illness

7.Retired

98. Other

5. **Income**

您的税后月收入是(元)?

1. 999以下
2. 1000–2999
3. 3000–4999
4. 5000–6999
5. 7000–8999
6. 9000–10,999
7. 11,000–12,999
8. 13,000–14,999
9. 15,000–16,999
10. 17,000以上

96. 不愿意透露

What is your monthly income after taxation (RMB)?
Please select.

1. Less than 999
2. 1000–2999
3. 3000–4999
4. 5000–6999
5. 7000–8999
6. 9000–10,999
7. 11,000–12,999
8. 13,000–14,999
9. 15,000–16,999
10. Above 17,000

96. Prefer not to say

6. **Home/type of city**

您所在的城市是?(单选题)

1. 一线城市(北京, 上海, 广州, 深圳), 省会城市, 直辖市及自治区首府
2. 其他城市
3. 乡镇
4. 农村

Which of the following best describes the size of the city or town that you live in?
Please select.

1. First-tier city (Beijing, Shanghai, Guangzhou, Shenzhen), provincial capital, direct-administered municipality, capital of autonomous region
2. Other cities
3. Town
4. Countryside

7.**Region**

您所在的省, 自治区或直辖市?(单选题)

1. 北京市
2. 天津市
3. 重庆市
4. 上海市
5. 河北省
6. 山西省
7. 辽宁省
8. 吉林省
9. 黑龙江省
10. 江苏省
11. 浙江省
12. 安徽省
13. 福建省
14. 江西省
15. 山东省
16. 河南省
17. 湖北省
18. 湖南省
19. 广东省
20. 海南省
21. 四川省
22. 贵州省
23. 云南省
24. 陕西省
25. 甘肃省
26. 青海省
27. 广西壮族自治区
28. 内蒙古自治区
29. 宁夏回族自治区
30. 西藏自治区
31. 新疆维吾尔自治区

In which province, autonomous region, directly-administered city, do you live?
Please select.

1. Beijing
2. Tianjin
3. Chongqing

4. Shanghai
5. Hebei
6. Shanxi
7. Liaoning
8. Jilin
9. Heilongjiang
10. Jiangsu
11. Zhejiang
12. Anhui
13. Fujian
14. Jiangxi
15. Shandong
16. Henan
17. Hubei
18. Hunan
19. Guangdong
20. Hainan
21. Sichuan
22. Guizhou
23. Yunnan
24. Shaanxi
25. Gansu
26. Qinghai
27. Guangxi Zhuang Autonomous Region
28. Inner Mongolia Autonomous Region
29. Ningxia Hui Autonomous Region
30. Tibet Autonomous Region
31. Xinjiang Uyghur Autonomous Region

8. **Membership in organizations**

您是否加入以下组织或团体? (多选题)

1. 中国共产党
2. 民主党派
3. 共青团
4. 其它社会团体或民间组织

98. 其他

99. 以上均不是

Are you a member of any of the following organizations? Please select all that apply (multiple options)

1. Communist Party of China
2. Other Democratic Party
3. Youth League
4. Other social groups

98. Other

99. None of the above

9.**Satisfaction with life quality**

您对您生活质量的总体满意程度?

请从1(非常不满意)到10 (非常满意)选择您的评分.
How satisfied are you with your overall life quality?
Please rank from not satisfied at all (1) to very satisfied (10)

10. **Issues concerned about**

Note that the additive variable concerns_count was created on the basis of this question, equaling the number of concerns respondents expressed (0 to 7).

您最关心以下哪些您所在城市的社会问题? (多选题)

1. 环境保护(污染治理,垃圾处理等)
2. 市政服务(水, 电, 煤, 气, 市容, 环卫等)
3. 社会治安
4. 教育
5. 医疗保障
6. 住房保障

98. 其他

99. 以上均不是

Which of the following issues are you most concerned about in your city?

Please select all that apply.

1. Environmental protection (pollution, waste, etc.)
2. Municipal services (water, electricity, gas, city appearance, street cleaning, etc.)
3. Social security
4. Education
5. Health system
6. Housing provision and price

98. Other

99. None of the above

11. **Channels aware of/knowledge about**

Note that channels 1, 2, 4, and 5 were treated as “online” channels, as well as some individual answers written under “other.” Those who selected none of these “online” channels were excluded from this paper’s statistical analysis.

您是否了解以下就公共事务表达意见的方式?(多选题)

1. 网络政民互动平台
2. 政府热线
3. 信访
4. 纪委监委举报网站
5. 社交媒体
6. 抗议活动

98. 其他.

99. 以上均不知道

Please select all that apply.

1. Online government platform
2. Government hotline
3. Petition
4. Disciplinary complaint platform
5. Social media

6. Protest activities

98. Other

105. None of the above

12. **Channels used**

您曾经通过以下哪些方式就公共事务发表个人意见?(多选题).

1. 网络政民互动平台
2. 政府热线
3. 信访
4. 纪委监委举报网站
5. 社交媒体
6. 抗议活动

98. 其他.

99. 没有发表过意见

Which of the following channels have you ever used to express your opinion on public issues?
Please select all that apply (multiple options).

1. Online government platform
2. Government hotline
3. Petition
4. Disciplinary complaint platform
5. Social media
6. Protest activities

98. Other

99. None of the above

13. **To whom have citizens expressed their opinion on public issues?**

通过网络或政府热线,您向哪些单位发表过对公共事务的意见?(多选题).

1. 中央政府部门
2. 省级政府部门
3. 市级政府部门
4. 县,区级政府部门
5. 乡镇或街道
6. 国有企业

7.社会组织

98. 其他

99. 没有发表过意见

To whom have you ever expressed your opinion on public issues online or via hotline?
Please select all that apply (multiple options).

1. Central government departments
2. Provincial government departments
3. City government departments
4. District and county government departments
5. Township and sub-district
6. State-owned enterprise

7.Social organizations

98. Other (open)

106. I have not expressed my opinion (exclusive option)

14. **Frequency of participation**

通过互联网或政府热线,您过去五年就公共事务发表意见的频率是多少?(单选题)

- 从来没有
- 1–2次
- 3–5次
- 6–10次
- 11–20次
- 21次以上

How often have you expressed your views on public affairs through the Internet or government hotline in the past 5 years?

- Never
- 1–2 times
- 3–5 times
- 6–10 times
- 11–20 times
- 21 times or more

15. **Hindrances**

Note that this was a multiple-choice question. If “other” (其它) was chosen, people could write additional answers. If “there are no hindrances” was chosen, no other option could be chosen. The answer “I think it is not effective” (reversed) was used to measure external efficacy, and the answer “I do not know how it works” (reversed) was used to measure internal efficacy.

哪些因素妨碍您通过网络或政府热线就公共事务发表意见?

- 我不知道我可以就公共事务发表意见
- 我不知道在哪里发表意见
- 我不知道相关的程序流程
- 我有安全方面的顾虑
- 我有数据隐私方面的顾虑
- 我觉得没有效果
- 我没有时间
- 我不感兴趣
- 我觉得操作不方便
- 我没有意见要表达
- 其他
- 我觉得没有妨碍

Which factors hinder you from expressing your opinion on public affairs through the Internet or government hotline?

- I do not know I can express my opinion on public affairs
- I do not know where to express my opinion
- I do not know how it works
- I have security concerns
- I have data privacy concerns

- I think it is not effective
- I do not have the time
- I am not interested.
- I find it difficult to operate
- I do not have complaints to express
- Other
- There are no hindrances

16. **Free-riding**

您是否赞同下列看法:“我对居住地的很多事务都很关心,但是我本人不想发表意见,我希望其他人能够发表意见”

1. 非常不赞同
2. 部分不赞同
3. 不知道
4. 部分赞同
5. 非常赞同

To what extent do you disagree or agree with the following statement: “I am concerned about various issues in my city, but I do not want to express my opinion and hope others will do so”

1. Strongly disagree
2. Somewhat disagree
3. Neither disagree nor agree
4. Somewhat agree
5. Strongly agree

17. **Channel preferences**

您更倾向通过线下,政府热线还是互联网的方式就公共事务发表意见?(请按照最倾向到最不倾向的顺序排序)

1. 线下,如抗议,信件或是现场咨询
2. 政府热线
3. 互联网

Would you prefer to express your opinion on public issues offline, via hotline, or online?
Please rank from most preferred to least preferred.

1. Offline (protest, sending a letter, personal inquiry)
2. Government hotline
3. Online

18. **Risks and benefits online versus offline participation**

您觉得通过互联网和政府热线的方式就公共事务发表意见是风险更大还是优势更大? 请从

1. (完全是风险)到

10. (完全是优势)中选择打分,.

Do you think the benefits or the risks are higher when expressing your opinion online and via hotline instead of offline?
Please scroll from 1 (risks) to 10 (benefits).

19. **Mobile phone usage**

您是否赞同下列看法:“我在生活的各个方面都要使用手机” 请从

1. (完全不赞同)到

10. (完全赞同)选择您的评分

To what extent do you agree with the following statement: “I use my mobile phone for every aspect in my life.”
Please rank from 1 (strongly disagree) to 10 (strongly agree).