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US-China tech decoupling increases willingness to share personal data in China

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Conflicts involving tech companies and data privacy between the US and China have evolved into a technology decoupling between the two countries. Nationalistic sentiments have been on the rise in both countries as well. This study examines how the rising geo-technological race and conflict affect people's perception of data privacy. In particular, we examine whether reminding Chinese internet users of the US-China technological decoupling influences their willingness to share personal data. We conduct a randomized online experiment where we remind people of the US-China technology competition in artificial intelligence or the US sanctions on Chinese tech companies and examine the impact on respondents' willingness to share personal data with private companies, the central government and local government. We find that the US-China tech decoupling treatments increase people's willingness to share their data with private companies. Exploring the heterogeneous treatment effects by gender and education level reveals that nationalism is likely the mediating factor that explains why some people, especially, males and the college educated, are more likely to increase their willingness to share personal data when exposed to these treatments. Moreover, the US-China tech decoupling treatments directly increase people's perception that data is a key input for Chinese company competitiveness in AI development. In sum, we find that reminding people of the US-China tech decoupling can invoke nationalistic sentiment and increase people's willingness to share data with private companies and the government in China. The randomized control trial was pre-registered on the AEA RCT Registry (AEARCTR-0007526). The public URL of <https://www.socialscienceregistry.org/trials/7526> and the digital object identifier (DOI) is 10.1257/rct.7526-1.0.

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Introduction

Conflicts involving tech companies, data privacy, and differing data regimes between the US and China have evolved into a technology war that is sometimes referred to as the “great tech decoupling” (Johnson and Gramer, 2020). Nationalistic sentiment has since been fueled on both sides of the Pacific. In the US, the Trump Administration proposed the Clean Network program to safeguard citizens’ privacy and companies’ sensitive information from malign actors such as the Chinese Communist Party (US Department of State, 2021). The proposed ban of US’s fastest-growing social media platform, TikTok, which is a subsidiary of the Chinese company ByteDance, is increasingly receiving bipartisan support under the Biden administration (Mims, 2023). In China, US policy is viewed as a strategy to contain China. US actions against Chinese companies such as Huawei have been labeled “economic bullying,” designed to impede the rise of China (Dupont, 2020). Disputes on trade and technology between the US and China are viewed as an accelerator of decoupling, fragmentation, and realignment throughout the digital economy (Capri, 2020). Companies, governments, and the media are increasingly informing and addressing the public on issues related to data privacy and security, which are the key issues underlying the technology war between the US and China (Allison et al., 2021). However, the rising geo-technological race and conflict could directly affect people’s perception of data privacy and security. This paper aims to examine this dimension. In particular, we ask: How would reminding Chinese internet users of the US-China tech-competition and decoupling affect their willingness to share personal data with private companies, the central government, and local governments? Research by John et al. (2011) demonstrates how context-dependent cues can influence individuals’ willingness to disclose sensitive information. Building on this, our study explores how geopolitical narratives serve as contextual framings that shift attitudes toward data sharing, leveraging nationalistic sentiment as a key mechanism. We believe this question is important for several reasons. First, the collection and use of data, both by private firms and governments, have raised concerns of data privacy and the need for regulation. Regulations such as the EU’s GDPR or California’s CCPA aim to ensure that people have control over their data and that organizations can only collect and use data when people provide consent to data collection and use. However, as Milberg et al. (2000) have highlighted, cultural and regulatory differences can play a significant role in shaping privacy behavior and attitudes. In China, where collectivist cultural norms and centralized regulatory frameworks dominate, data-sharing preferences may diverge sharply from Western contexts, necessitating a nuanced approach to understanding these dynamics. User consent to data collection and use is becoming a standard approach to data privacy regulation. As such, people’s willingness to share personal data and ultimately consent to share their data will be fundamental to developing digital applications in businesses and governments. However, Acquisti et al. (2013) critique the effectiveness of transparency and control mechanisms, arguing that they often fail to meaningfully influence privacy behavior. As such, while people’s willingness to share personal data is fundamental to developing digital applications, understanding the gap between consent mechanisms and actual behavior is critical, particularly in contexts influenced by geopolitical narratives. Despite this importance, we still know relatively little about what affects people’s attitudes towards data privacy and willingness to provide personal data, especially to the government relative to private companies. Acquisti et al. (2015) highlight this challenge through the privacy paradox, where individuals’ stated privacy concerns often diverge from their actual behavior. This paradox underscores the complexity of understanding privacy

preferences, particularly in contexts like ours, where geopolitical narratives may introduce additional layers of influence. Our study aims to contribute to this body of literature by examining how such narratives influence self-reported data-sharing attitudes. In this paper, we examine an angle that, to the best of our knowledge, has not been examined—how the technological conflict between the US and China affects the data privacy preferences of Chinese citizens. This angle is important as China’s central government has unique levers to control public discourse online.

Second, data is fundamental to the development of digital products and services, including artificial intelligence. Massive data libraries enable both businesses and governments to develop increasingly precise algorithms that can create personalized and convenient digital products and services. The economic implications of privacy preferences are particularly significant in industries like online advertising, where restrictions on data collection can affect market efficiency, as demonstrated by Goldfarb and Tucker (2011). These dynamics suggest that shifts in willingness to share data, driven by nationalistic narratives, could carry broader economic consequences, influencing not only technological competitiveness but also the structure of data-driven industries. Firms and organizations with access to large and often proprietary data conduct R&D and innovate at the frontier (Lee et al., 2022), while those without such access often lag behind. Governments around the world also use citizen biometrics data for law enforcement, security, public health, and even surveillance. The recent developments in and the availability of very large datasets also contribute to accelerating progress in AI applications (Duan et al., 2019). AI National Strategies recognize data as the key input into AI innovations and in becoming a leader in the global AI race (Fatima et al., 2020). Notably, a key concern when the GDPR was proposed was that the regulation could stymie EU’s AI innovation compared to China (Gal and Aviv, 2020). Hence, willingness to share personal data for government and/or business use can have broader implications relevant to a nation’s AI innovation and global AI competitiveness. How might the technology race between the two world powers influence people’s willingness to share personal data in China? We hypothesize that nationalism could serve as the mediating factor that connects the cause (awareness of the US-China technology competition and conflict) and effect (willingness to share personal data). A large body of literature discusses how nationalistic sentiment invokes people’s willingness to make sacrifices for the larger community (Anderson, 1986, Stern, 1995). Gries et al. (2011) show that Chinese national identity is a complex construct blending patriotism and nationalism, with significant implications for public opinion and behavior. Their framework sheds light on how nationalistic narratives in our treatments may enhance citizens’ willingness to align personal actions with perceived national interests. Additionally, Acquisti et al. (2012) emphasize the importance of framing effects in shaping privacy-related decision-making. Similarly, nationalistic narratives can act as contextual cues, reshaping norms and motivating individuals to prioritize collective goals, such as advancing China’s technological capabilities. This readiness to sacrifice personal interest is often exhibited in times of war, where individuals may even give their lives for the nation, but also in trade conflict where people avoid purchasing goods from “rival” countries. In the context of technology rivalry, this sentiment can translate into a perception that sharing personal data is not only a practical necessity but also a patriotic act to bolster the national agenda. Xu and Zhao (2023) found that the US-China trade dispute intensified nationalistic sentiments, leading to increased public support for hawkish foreign policies and greater trust in government-led initiatives. Similarly,

exposure to narratives about US sanctions on Chinese companies may lead individuals to view data sharing as a contribution to China's competitiveness in the global AI race, thus aligning personal actions with national goals. Similar to geopolitical wars and trade wars, technology wars may spur nationalistic sentiment and the willingness to contribute to China's greater national agenda of becoming a world leader in AI (Roberts et al., 2020). The nationalist narrative may eventually shape China's data regimes, and since data is a key input into the technological race may influence people's willingness to share their data in support for Chinese tech companies and government initiatives.

We conducted a randomized online survey experiment to study the effects of US-China technology decoupling on people's data privacy preferences. Specifically, in Treatment 1 we reminded Chinese internet users of the tech rivalry between the US-China, focusing on China's rapid growth in AI innovation, and the intensifying competition with the US. In Treatment 2 we reminded participants of the US sanctions against Chinese companies, such as, restricting access to key US technologies, delisting Chinese companies from the NY Stock Exchange, and the US government's request to divest TikTok. We then examined how being exposed to such information affected people's willingness to share various personal data with private companies, the central government, and the local government.

In addition to the two US-China tech decoupling-related vignettes, we also examined the effect of reminding people of the government's intrusive data collection practices (Treatment 3). This treatment was included to examine whether the effects of being reminded of domestic data privacy issues, which generally would not invoke nationalistic sentiment, differ from being reminded of the US-China technology rivalry/conflict.

The control and treatment scenarios were followed by questions asking respondents' willingness to share various personal data (biological data, online shopping records, web browsing history, location information, driving records, medical records, financial information) with private companies, the central government, and local governments, and respondents' support for several specific use cases of personal data by these entities. We asked for willingness to share data with the central government since national narratives related to AI supremacy and the US-China competition are centrally set by the government in Beijing. However, we also asked about local governments since some data gathering or surveillance practices are conducted at the local level.

Next, we examined respondents' level of trust in each organization to responsibly use their personal data, and whether respondents believe that their data is critical for Chinese companies' global competitiveness, and the government's ambition to make China a world leader in developing AI technologies.

A key heterogeneity that we explore is the differential treatment effects by respondent's sociodemographic features (gender and education level) and nationalistic sentiment. By doing so we examine whether people with stronger national identity or patriotism are more willing to share personal data with companies and the government when triggered by messages of US-China tech decoupling. We also examine whether the treatments directly affect people's perception related to tech nationalism. We describe our survey and experimental design in more detail in the Materials and Methods section. The SI Appendix presents the English version of the survey.

Results

We recruited internet users in China through the survey company Qualtrics. We focused on internet users since they are likely to be more aware of the data privacy issues related to websites, apps, technology products, and services. We launched the survey in

October 2021 and over a 7-week period were able to collect 2442 completed responses (those that passed our attention check questions and completed all questions). After dropping those who indicated that they did not devote full attention to answering the questions, and those who finished the survey in an unreasonably short time, i.e., the first percentile of response time, we ended up with 2430 responses. While our sample is not representative of all individuals in China, we aimed to get a representative sample of internet users in China, which is the more relevant population for the question we study. See SI Appendix Table S1 for the summary statistics of the variables in our survey. The average age of respondents is around 39, males and females are evenly split, about 22 percent grew up in a rural area, and seven percent classify themselves as minorities. The share of college-educated or above is relatively high due to the nature of internet users in China. About 13 percent are unemployed, and seven percent are students. 15% of the respondents are affiliated with the Chinese Communist Party. A key set of variables in this study relates to people's beliefs related to national identity, patriotism, political conservatism, and anti- or pro-market beliefs. We created standardized indexes that group responses to each category's four or five questions used in the literature (Pan and Xu, 2020, Xu and Zhao, 2023). The Materials and Methods section describes the construction of these variables in more detail.

Treatment and control group balance. Before turning to the regression results, we examined whether individual characteristics and beliefs are balanced across the control and treatment groups. Table S2 in the Supplementary Index presents the mean and standard errors of the variables across each group. Panel A shows variables related to personal background and Panel B shows variables related to personal beliefs. The sample sizes for the control group and each of the three treatment groups are 686, 606, 523, and 615, for a total of 2430. The resulting distribution after the sample restrictions reflects a relatively even distribution, though the control group is larger and the sanctions treatment group is slightly smaller. SI Appendix Table S2 also shows the variable balance across the different treatment groups. Overall, the variables are generally well balanced, though the national identity and patriotism are somewhat lower in sanctions treatment group. In the regression analysis, we include all the variables in Table S2.

Empirical model. The base regression model we examine in the empirical analysis is the following equation:

$$y_i = \alpha + \sum_{j=1,2,3} \beta_j T_{ji} + X_i \pi + \varepsilon_i \quad (1)$$

where y_i represents individual i 's willingness to share personal data or perceptions related to data privacy. $T1_i$ is a dummy variable indicating the US-China competition treatment group, $T2_i$ is a dummy variable indicating the sanctions by the US treatment group, and $T3_i$ is a dummy variable indicating the government data misuse treatment group. X_i is the vector of control variables, including individual demographic controls (gender, race, education, age, employment, urban-rural, etc.), personal beliefs (nationalism, conservatism, antimarket, patriotism, technology savviness, globalization, tech company perception, data privacy concern), and province fixed effects. The coefficient β_j 's captures the effect of each treatment on the outcome variables relative to the control group.

We examine treatment effect heterogeneity by interacting the treatment dummy variable(s) with key characteristics and beliefs

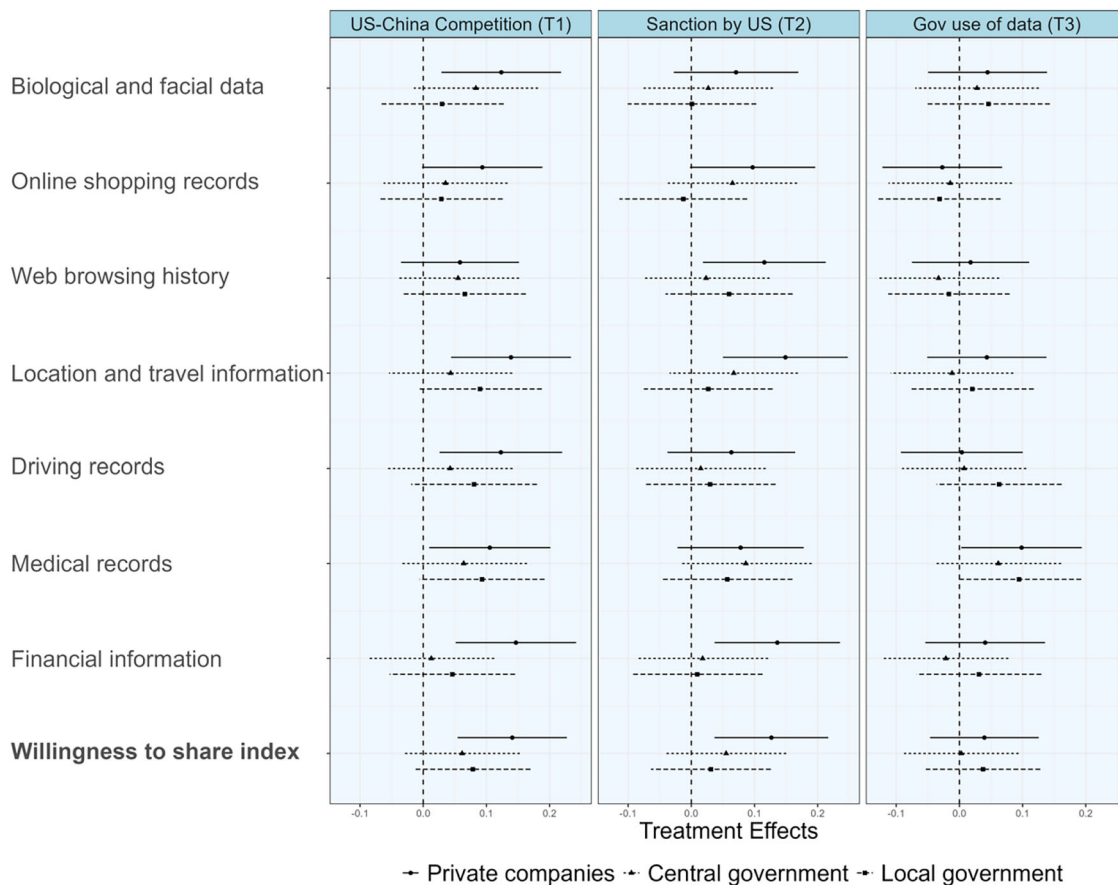


Fig. 1 Willingness to share personal data.

variables. That is, we examine the following variant of Eq. (1)

$$y_i = \sum_{i=A,B} \sum_{j=1,2,3} \beta_{j,k} T_j * K_i + X_i \pi + \varepsilon_i \tag{2}$$

where K_i , and $i = A$ or B represent the groups. The groups we examine are male/female, college-educated or above/below college, and the interaction of gender and education level. We also examine heterogeneous effects based on individual beliefs (national identity, patriotism, political conservatism, antimarket sentiment). The coefficient $\beta_{j,k}$ captures the heterogeneous treatment effect of treatment T_j for group K_i .

Willingness to share personal data. We first examine how being exposed to the treatment vignettes affect people’s willingness to share their data with private companies, the central government, and the local government (SI Appendix Tables S3–S5 present the regression results). Figure 1 (the solid line) summarizes the results from the three tables, where the dot represents the coefficient estimates and the bar represents the 95% confidence intervals. We examine each data type and take the average across all data types (the willingness to share index). We find that being reminded of the US–China technology competition (T1) or US sanctions against Chinese companies (T2) significantly increased respondent’s willingness to share their data with private companies. Respondents significantly increased their willingness to share personal data across most types of data that we survey (i.e., biological and facial data, online shopping records, location & travel information, driving records, medical records, financial information) when exposed to the US–China technology

competition vignette. This broad-based effect is also found among respondents who received the US sanctions treatment.

The results are less pronounced when it comes to the impact of the competition treatment or sanctions treatment on people’s willingness to share data with the central and local governments (the dashed lines in Fig. 1). For both treatments we do not find any significant effect across our treatments, despite consistently positive estimates for almost all data types, with magnitudes slightly larger for the local government. This finding aligns with prior research by Kostka et al. (2021), which observed that Chinese citizens tend to trust government institutions more than private companies when it comes to handling personal data. It also reflects global patterns identified by Bellman et al. (2004), showing that privacy attitudes vary across cultural and institutional contexts. In China, high baseline trust in government institutions and the normalization of state data collection may mitigate the effects of geopolitical narratives, contrasting with Western contexts where individual privacy concerns often dominate. However, as Fan and Wu (2024) note, this trust coexists with a degree of resignation toward government surveillance, as many citizens perceive state data collection as both inevitable and outside their control. These dynamics help explain our findings. While reminders of US-China tech decoupling may invoke nationalistic sentiment, the already high baseline trust in government and the perceived inevitability of state data collection may leave little room for additional change in willingness to share data with government entities. In contrast, the same treatments may significantly influence data sharing with private companies, as citizens could perceive their cooperation as more directly contributing to China’s technological competitiveness. Moreover, the relatively lower magnitude of willingness to

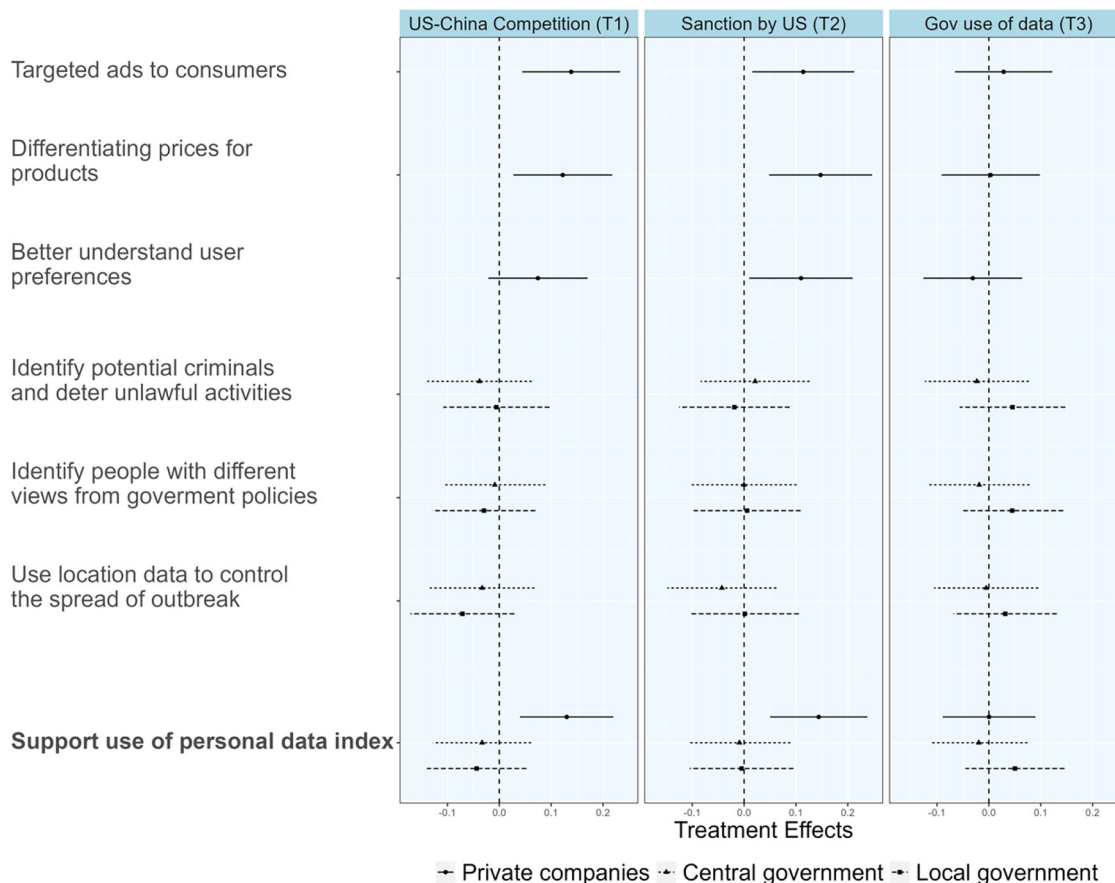


Fig. 2 Willingness to share personal data for specific purposes.

share data with the central government compared to local governments could reflect greater concern about centralized surveillance or misuse, as suggested by Kostka et al. (2021). Future research could explore whether these patterns differ in specific regions or policy contexts.

When exposed to T3, the central government’s intrusive data collection practices (monitoring and collection of citizen data), respondents do not significantly change their willingness to share personal data with all three institutions.

We then asked whether respondents were willing to share their data with private companies, the central government, and local government for specific purposes. Figure 2 summarizes the results. Consistent with the findings from Fig. 1, we find that both the competition (T1) and sanctions (T2) treatments significantly increase support for private company use of personal data for the purpose of targeted advertisements to consumers and differential pricing based on consumer preferences. When we examine whether the treatments change respondents’ willingness to share personal data with the central or local government to identify criminal/illegal activities, identify people who may have different views with the government policies, or control the spread of an outbreak, the estimates are not statistically significant, but tend to be negative for the US-China tech decoupling treatments. Also consistent with Fig. 1, the government use of data treatment (T3) shows no significant effects. Overall, we find that the US-China tech decoupling treatments (the competition and sanctions treatments) increase people’s willingness to share their data with private companies in China. These findings align with the cross-cultural perspectives discussed by Milberg et al. (2000), who emphasize the role of cultural and regulatory contexts in shaping privacy attitudes. In the Chinese context, where collectivist norms

and centralized governance prioritize national goals over individual privacy concerns, geopolitical narratives may act as amplifiers of existing cultural tendencies, further encouraging data sharing with entities perceived as contributing to national competitiveness. Our findings are also consistent with the insights of John et al. (2011), who highlight how contextual cues can significantly alter individuals’ willingness to divulge sensitive information. In our study, the nationalistic narratives invoked by the treatments likely acted as powerful contextual factors, reframing data sharing as a contribution to collective national goals and, thereby, increasing its acceptability. However, as noted by Acquisti et al. (2013), preferences may not always translate into meaningful behavioral changes. Transparency and framing, such as the nationalistic narratives used in this study, can reshape perceptions temporarily, but their long-term effects on actual data-sharing practices require further examination.

Heterogeneity in the willingness to share personal data.

Figure 3 summarizes how the treatment effects vary by gender and education level of the respondent. The regression equation is based on Eq. (2) and SI Appendix Tables S6, S7 present the regression results. We focus on the willingness to share index, which is the average across all data types. We first examine gender. The competition (T1) and sanctions (T2) treatment increase willingness to share personal data with private companies for both males and females. However, for the central government and local governments, T1 and T2 increase willingness to share for males only, with effects being statistically weaker for the T2 treatment group. There is no differential effect between males and females among those exposed to T3.

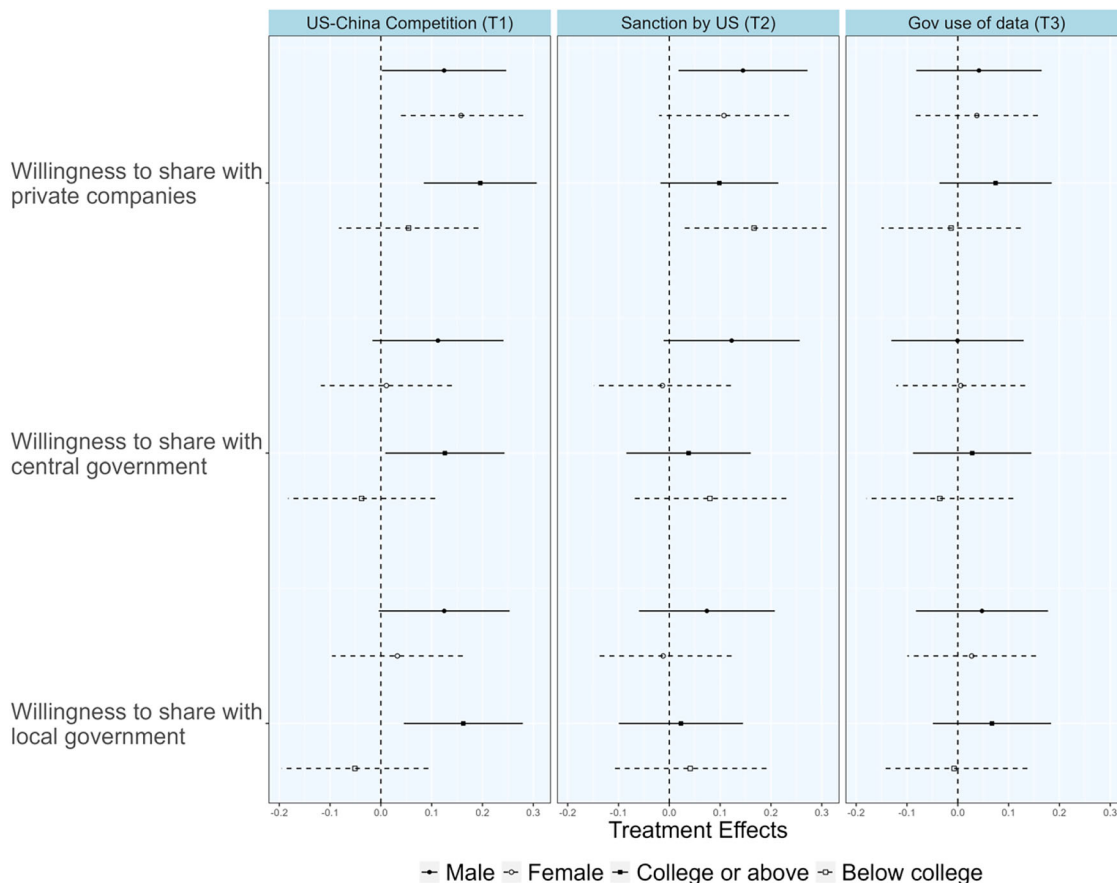


Fig. 3 Heterogeneous treatment effects by gender and education.

When we examine by education level, the US-China competition treatment (T1) significantly increases willingness to share personal data in the college-educated group only. And this finding holds for sharing personal data with all three entities: private companies, the central government, and local governments. However, we do not find significant impacts by education level under the sanctions treatment (T2). If any, the treatment effects for the college or above group are smaller in magnitude than the below college group.

We further investigate the heterogeneous treatment effects by gender*education. Figure 4 (SI Appendix Table S8) shows that college educated males increase willingness to share personal data with all three institutions when exposed to the US-China competition treatment (T1). College educated males are the only group that increases their willingness to share personal data with government entities. Also, consistent with the above findings based on education level, college educated males do not respond to the sanctions treatment (T2) as significantly to the competition treatment (T1). Interestingly, the estimates on the below-college male group are greater than the estimates for the college educated male group under the sanctions treatment.

These findings indicate that the US-China decoupling treatments (T1 and T2) increase willingness to share personal data, with generally stronger effects under the competition treatment (T1) compared to the sanctions treatment (T2). A sense of pride and rivalry invoked under T1 seems to create a stronger treatment effect than a sense of victimization under T2 for the college educated. On the other hand, for the below college group the treatment effects are generally not significant, though the victimization sentiments under T2 does seem to create a response for below college males.

Nationalism as the potential mechanism. To investigate whether the treatment effects we find above are related to nationalism, we examine how the treatment effects vary based on individual beliefs including national identity and patriotism (our two main proxies for nationalism), as well as political conservatism and anti-market sentiment (two related measures for Chinese nationalism). The national identity index captures beliefs about policies pertaining to Chinese identity and foreign affairs. The patriotism index reflects a respondent’s sense of national pride and feelings of attachment toward China. The anti-market sentiment captures the respondent’s aversion towards free markets, exchange, and trade, and support for the allocation of resources by the state and state-owned enterprises. The political conservatism index measures people’s aversion towards individual freedom and democratic institutions. The Methods and Materials section describes the construction of these indexes in more detail. A higher score on the respective index indicates a stronger attachment to nationalistic identity, patriotism, political conservatism, and anti-market sentiment. The index is standardized with a mean of 0 and a standard deviation of 1. Table 1 shows the correlation across the four indexes. The correlation coefficients are all positive and range from 0.168 to 0.482, with the correlation between the two nationalism measures (national identity and patriotism) being the highest.

We first examine how each belief varies by gender and education in a regression framework (Table 2). The college educated have significantly higher levels of both nationalism measures (national identity and patriotism). They also have higher levels of anti-market sentiment. In terms of gender, males have a higher level of national identity, political conservativeness, and anti-market sentiment. The strong heterogeneity results that

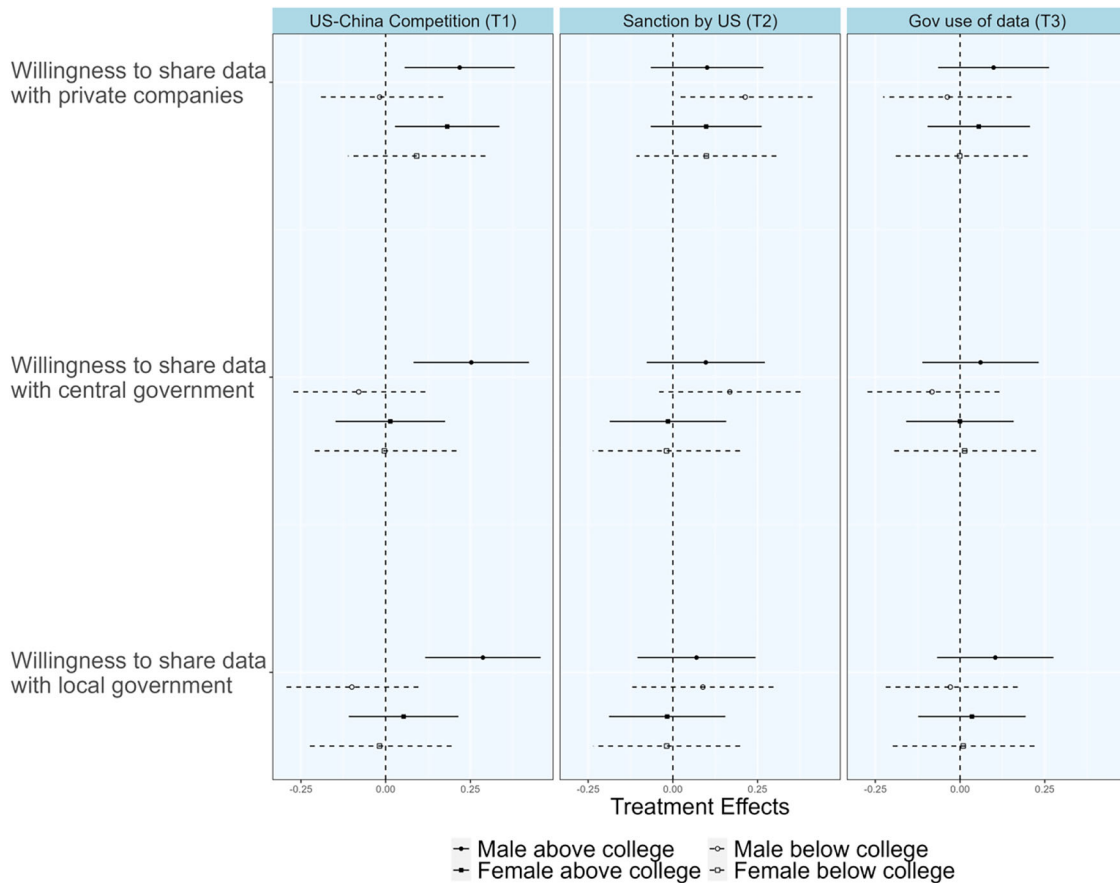


Fig. 4 Heterogeneous treatment effects by gender x education.

	National identity	Patriotism	PoliticalConservativeness	Anti-market sentiment
National identity	1			
Patriotism	0.482	1		
Political Conservativeness	0.182	0.241	1	
Anti-market sentiment	0.208	0.168	0.297	1

	National identity (1)	Patriotism (2)	Political Conservativeness (3)	Anti-market sentiment (4)
College or above	0.233*** (0.049)	0.311*** (0.048)	0.055 (0.049)	0.175*** (0.049)
Male	0.078* (0.041)	-0.002 (0.041)	0.104** (0.042)	0.129*** (0.042)
Observations	2430	2430	2430	2430
Adjusted R ²	0.068	0.086	0.048	0.049

Coefficient estimates are results when we regress each belief on a male dummy variable and college or above dummy variable. All regressions include fixed effects for age, income below 8,000 Yuan, minority status, grew up in rural area, employment status, work in public/private sector, CCP affiliation, and indexes for tech savviness, globalization, tech company perception, and data concern perception. *p < 0.1 **p < 0.05 ***p < 0.01.

we find among the college educated and males may well likely be driven by the higher levels of nationalism as well as support for state-driven political and economic policies (i.e., more political conservative and anti-market).

We next group respondents into two groups (equal or above the mean, below the mean) by each measure and estimate the heterogeneous treatment effects following Eq. (2). Figure 5 summarizes the treatment effects from SI Appendix Tables S9–S12.

People with higher national identity or patriotism increase willingness to share personal data with private companies when exposed to either the competition (T1) or sanctions (T2) treatment. For political conservativeness or anti-market sentiment the estimates for those above and below the mean are not as different, and both estimates tend to be significant. When we examine willingness to share with the central government or local government, people with stronger national identity show the largest response when exposed to the US-China competition

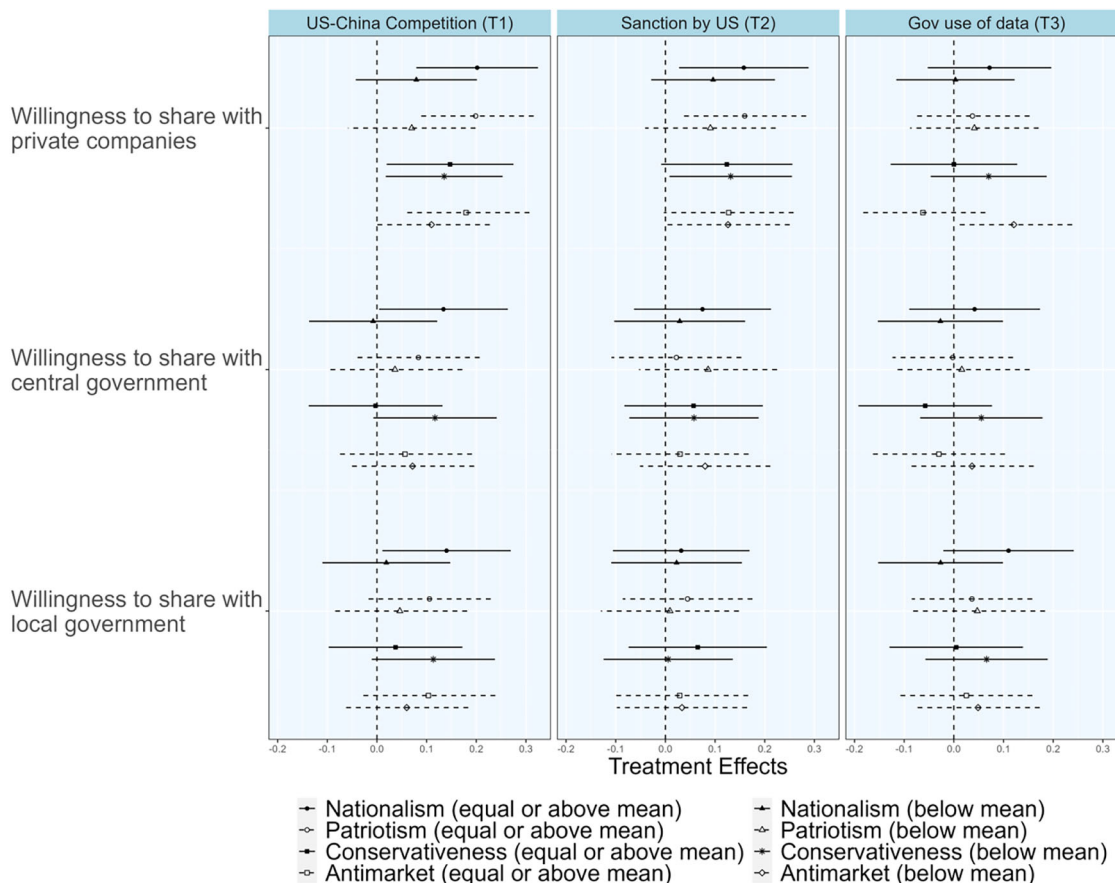


Fig. 5 Heterogeneous treatment effects by beliefs.

treatment (T1), and they are the only group with a statistically significant effect. The results based on patriotism also show similar results but with smaller magnitudes. The sanctions treatment (T2) does not invoke a differential effect on people’s willingness to share with the governments.

Overall, Table 2 and Fig. 5 taken together with the heterogeneous treatment effects in Figs. 3 and 4 illustrate that nationalistic sentiment can help explain why people are more willing to share their personal data when reminded of the US-China tech decoupling.

Finally, we examine whether the treatments affect people’s belief that personal data is important for (1) Chinese company competitiveness in AI development and (2) the central government’s goal to become a world leader in AI (Fig. 6). The sanctions treatment (T2) significantly increases respondents’ perception on whether personal data is critical for Chinese company competitiveness in AI development among those with higher national identity and patriotism. The patterns are similar but the estimates are not as significant under the competition treatment (T1).

Trust in companies or the government can also influence people’s willingness to share personal data. We examined whether the treatments affect people’s trust that companies or governments would handle their data responsibly. The competition (T1) and sanctions (T2) treatment increase respondents’ trust that private companies would responsibly use their data among those with higher levels of nationalism. We do not find any effects regarding the government. Also, the heterogeneous results in Fig. 6 are more evident for the two nationalism measures, national identity and patriotism, compared to political conservativeness or anti-market sentiment.

Overall, the findings in Fig. 6 further show that individuals with stronger national identity or patriotism increase their belief of data being an important factor for Chinese company competitiveness and put more trust in Chinese company handling of their data.

Discussion

In this paper, we use an online randomized control experiment and show that reminding Chinese internet users of the US-China technology competition or US sanctions against Chinese tech companies significantly increases their willingness to share personal data with private companies and the government. Exploring the heterogeneous treatment effects by gender and education level reveals that nationalism (nationalistic identity and patriotism) is likely the mediating factor that explains why some people are more likely to increase their willingness to share personal data when exposed to these treatments. Moreover, the US-China tech decoupling treatments directly increase the perception that data is a key input for Chinese company competitiveness in AI development among respondents with higher levels of nationalistic identity and patriotism. The magnitudes imply that being exposed to the US-China decoupling treatment significantly increases the willingness to share personal data index by 0.12 to 0.15, which is about 1/6th of the standard deviation. In short, our findings show that providing messages of tech rivalry and victimization does change people’s willingness to share personal data with private companies and the government in China, especially among people that display greater nationalistic inclinations. This aligns with John et al. (2011), who found that contextual cues, such as perceived anonymity or environment, can significantly shape individuals’ data-sharing behaviors. Similarly, the

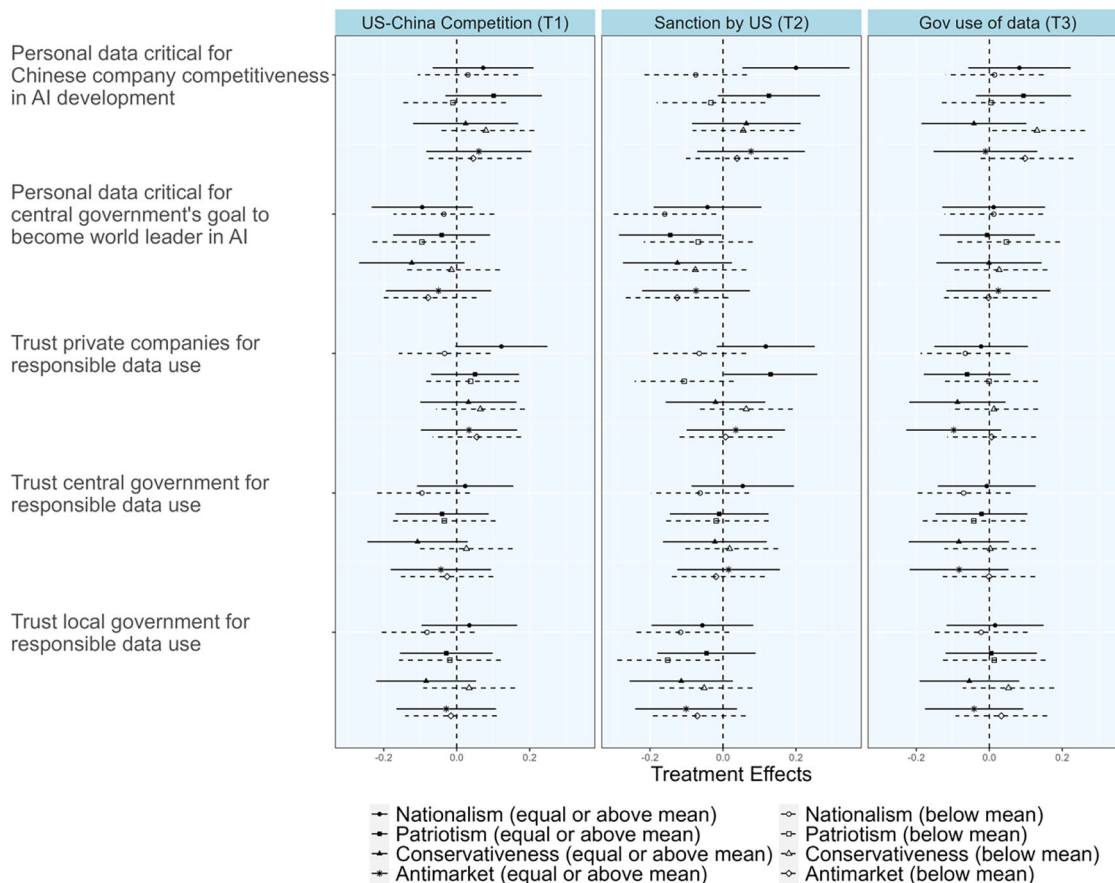


Fig. 6 Heterogeneous treatment effects on perceptions on tech nationalism and trust in entities.

geopolitical framings in our treatments served as context-dependent cues, leveraging respondents' sense of patriotism and collective identity to shape their attitudes. However, Acquisti et al. (2013) highlighted the limitations of transparency and control mechanisms in influencing privacy behavior. While our treatments effectively influenced respondents' self-reported willingness to share data, it remains uncertain whether these changes would persist in situations requiring actual data-sharing decisions. We also find evidence that the treatments directly affect people's belief that data is a key input for Chinese tech competitiveness. While the global race for AI technology dominance will likely continue, our findings indicate that invoking nationalistic sentiment can increase people's willingness to share data with private companies and the government.

Despite the important role consent and willingness to share personal data have in data collection, we still know relatively little about what affects people's attitudes towards privacy and willingness to provide sensitive data, especially to the government relative to private companies. Scholars have discussed how privacy concern, convenience, public safety, and health relate to people's willingness to share data (Kokolakis, 2017, Gerber et al., 2018, Kostka, 2019).

While our findings contribute to understanding the interplay between nationalism and privacy attitudes, it is important to position this study within the broader privacy behavior literature. Notably, the privacy paradox, where stated privacy concerns often diverge from actual behavior (Acquisti et al., 2015), raises questions about the real-world validity of self-reported data-sharing intentions. In our study, respondents reported greater willingness to share personal data after reminders of US-China tech decoupling, but it is crucial to acknowledge the limitations of survey-

based measures in reflecting actual behavior. Recent research by Acquisti et al. (2015, 2016) highlights the malleability of privacy preferences and the influence of situational and contextual factors on decision-making. Unlike behavioral studies that monitor real-world data-sharing decisions, our randomized experiment captures self-reported willingness to share data, which may not fully align with actual behavior. Our design focuses on the attitudinal shifts caused by geopolitical reminders rather than directly measuring behavioral responses. This complements prior studies by providing insights into how external narratives influence sentiment, which can later be validated through behavioral methods discussed above.

Prior studies, such as those by Acquisti et al. (2016), have demonstrated the malleability of privacy perceptions and the influence of contextual factors on decision-making. Our findings build on this literature by showing how geopolitical narratives, such as technological rivalry, can temporarily shift self-reported willingness to share data. However, as Acquisti et al. (2013) notes, transparency and control mechanisms often fail to capture the complexity of privacy decision-making, highlighting the need for more robust behavioral approaches. Future research could integrate methods such as tracking anonymized metadata, observing responses to simulated data-sharing scenarios, or conducting longitudinal studies to better understand how attitudes translate into real-world behavior. These approaches would not only validate our findings but also address the gap between stated preferences and actual actions. For instance, experimental designs that mimic real-world data-sharing decisions or studies exploring whether the effects of tech rivalry narratives persist over time would provide deeper insights into the durability and applicability of these shifts in data-sharing attitudes.

Despite these methodological constraints, researchers have also found that the act of stating one's intent to engage in a behavior is associated with an increased likelihood of subsequently engaging in the behavior (Levav and Fitzsimons, 2006). Though the current paper focuses on perceptions and intent our findings carry significant implications for policy and public discourse. Geopolitical narratives not only shape public attitudes but also highlight the broader tensions between trust and coercion in digitally mediated societies. By understanding how such narratives influence data-sharing preferences, policymakers and organizations can craft communication strategies that foster trust, address privacy concerns, and align public sentiment with broader governance goals. While the translation of self-reported attitudes into behavior requires further investigation, our study sheds light on critical trends that can inform the development of more resilient and transparent digital ecosystems.

In extension, the economics of data privacy literature has pointed out how imperfect or asymmetric information hinders online users to make informed decision about data privacy (Acquisti et al., 2016), or how malleable consumer privacy perceptions can be (Acquisti et al., 2015). In this paper, we examined an angle that, to the best of our knowledge, has not been examined in depth: how geopolitical narratives, such as tech competition and decoupling, influence individual data-sharing preferences. In this regard, our paper also contributes to the increasing number of papers that examine the economic impact of the US-China trade war (Khandelwal and Fajgelbaum, 2021, Amiti et al., 2020) and discusses the consequences of the US-China tech decoupling (Johnson and Gramer, 2020, Wyne, 2020, Hu et al., 2021) from the angle of data sharing and data privacy preferences.

Our findings have important implications in the context of emerging data privacy regimes globally and the ideological and value-based foundations on which data regimes are based. The link between technology and ideological values is becoming a defining issue in the global technology policy landscape. Varying positions on the use of data and technology oftentimes demarcate opposing socio-technological positions that have wide-reaching implications for citizens' sense of data privacy and protection. In terms of technological governance, a distinct model of digital authoritarianism is emerging from China (Khalil, 2020). Nationalist tendencies possibly affect and shift public sentiment towards ongoing data collection practices by companies and the government. Since China's central government controls public discourse, e.g., through media and censorship (Chen and Xu, 2017), continued public sector data centralization and surveillance initiatives could be legitimized by narratives that raise nationalistic sentiment.

Our study of ideology and data privacy preferences in China's context highlights the interplay between cultural norms, regulatory frameworks, and nationalistic narratives. Unlike Western societies, which often emphasize individual rights and privacy, China's collectivist cultural norms prioritize the collective good over individual preferences. In such a context, sharing personal data may be viewed less as a personal sacrifice and more as a contribution to societal progress, particularly when framed within a nationalistic narrative emphasizing China's technological advancement.

Furthermore, the limited enforcement of privacy laws in China, coupled with explicit government exemptions, significantly shapes public attitudes toward data-sharing. While legislation such as the Personal Information Protection Law (PIPL) exist, enforcement remains inconsistent, especially when government interests are at stake (Creemers, 2022). This creates an environment where citizens may perceive data-sharing as both an inevitable and a normalized aspect of daily life, a sentiment reinforced by cultural and political narratives that emphasize collective over individual priorities (Kostka, 2019). Research by

Kostka et al. (2021) and Fan and Wu (2024) suggests that this resignation toward government data collection stems from both trust in the state and a lack of agency to resist surveillance practices.

These cultural and regulatory dynamics explain why the treatments invoking US-China tech rivalry significantly increase willingness to share data with private companies but show less pronounced effects for government entities. High baseline trust in the government and the normalization of state surveillance may leave little room for further shifts in attitudes. By contrast, private companies may be perceived as more directly tied to the national agenda, and thus, sharing data with them aligns with nationalistic goals.

Understanding these cultural nuances is essential for interpreting the findings and their broader implications. Future studies could explore how attitudes differ across regions in China or how generational changes might affect the balance between collectivist and individualist perspectives on data privacy. While our findings suggest that geopolitical narratives can influence public support for data-sharing policies, whether such narratives translate into concrete actions remains uncertain. This relates to the well-documented privacy paradox, where individuals express concerns about privacy but still engage in data-sharing behaviors. We leave it to future research to study whether geopolitical framing significantly influences actual data-sharing practices beyond self-reported attitudes.

The notion of digital sovereignty is especially relevant in this regard and feeds into questions over how governments support or constrain digital innovation, as well as the data that feeds into such. How some of these issues are negotiated will have important and far-reaching consequences for data privacy in the years to come.

Methods

Experimental design. We conducted a randomized online survey experiment to study the effects of different treatments on Chinese citizens' data privacy preferences. Individuals were randomly assigned to 'treatment' and 'control' groups, and the differences in the survey responses between the groups were attributed to the treatments (Visser et al., 2000). We commissioned the survey firm Qualtrics to conduct the survey on a representative sample of the Chinese internet population. Figure 7 illustrates our experimental design. The randomized control trial was pre-registered and reviewed by the IRB and determined exempt review (Stanford Protocol ID: 58759).

Pre-registration and response authenticity. To ensure methodological transparency and rigor, the experimental design was pre-registered in the AEA RCT Registry (AEARCTR-0007526).

Given the potential influence of censorship in China, multiple measures were implemented to safeguard the authenticity and confidentiality of participant responses. All data collection was anonymized to protect respondents' identities. Participants were informed that no identifiable information would be stored or shared, and that their responses would remain confidential. The survey was administered through Qualtrics, a neutral third-party survey platform, which further ensured that responses were not linked to identifiable personal information. In China, Qualtrics works with local vendors, ensuring that the collected data comes from reliable sources. In the survey, questions were carefully worded to minimize sensitivity while maintaining the integrity of the experimental treatments. Vignettes emphasized factual content over political rhetoric to reduce potential respondent apprehension. At the outset of the survey, respondents were explicitly informed that the collected data was for academic purposes and was

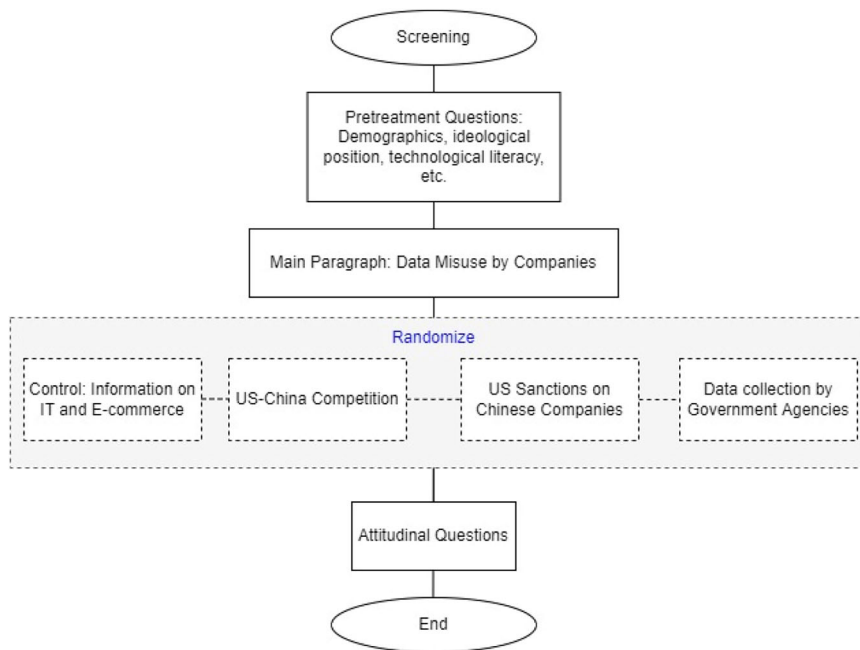


Fig. 7 Experimental design.

conducted independently of any government or corporate entity. Detailed consent forms highlighted their right to skip questions or withdraw at any time without penalty. By implementing these measures, we aimed to create an environment that encouraged honest and unbiased responses, mitigating concerns related to social desirability or self-censorship. The survey’s design and execution were also approved by the IRB to ensure adherence to ethical standards.

Survey questions. After respondents expressed consent and completed the screening test, we measured their prior beliefs using selected questions on ideology. Building on Pan and Xu (2020), we used three dimensions to measure ideology: (1) political liberalism, i.e., policies that pertain to political institutions and individual freedom; (2) market economy, i.e., policies about the economy and trade, and the role of the state in the allocation of resources; and (3) national identity, i.e., policies concerning national identity and foreign affairs. We asked five questions for each dimension and, for each question, respondents expressed the extent of their agreement with the statement on a four-point Likert scale. This indicates whether they identify more strongly with liberal or conservative, pro-market or antimarket, or non-nationalist or nationalist tendencies. Building on Xu and Zhao (2023), we added a patriotism index that builds on the work of Woods and Dickson (2017) and Gries et al. (2011). The questions refer to China’s interactions with foreign powers and captures the out-group bias against foreign countries. The patriotism index reflects a respondent’s sense of national pride and feelings of attachment toward China. Each index was populated on the basis of responses to five statements. Again, respondents were asked to express their agreement with the statements on a four-point Likert scale. The index is standardized with a mean of 0 and a standard deviation of 1. The complete list of questions can be found in the SI Appendix. The questions in each policy domain were grouped, but the order in which questions within a group were presented to each respondent was randomized. The order of the dimensions was randomized as well.

Next, we assessed respondents’ familiarity with technology, to gauge their level of technological literacy. We used this as a

measure of comprehension of data privacy and data protection-related issues. This was followed by questions to assess our respondents’ degree of overseas exposure. Then, we aimed to measure pre-treatment perceptions of technology companies by asking respondents about their perceptions of the role of large technology companies in the Chinese economy, and whether the government should do more to rein them in. We also assessed respondents’ views on their data pre-treatment by asking whether they think their data has economic value and whether they are willing to share it with companies and the central and local governments. Next, we asked a set of questions related to demographics before respondents proceeded to read a paragraph that describes data privacy violations by private sector companies in China. The main paragraph was followed by a randomly assigned vignette from one control and three treatment conditions. The vignettes are similar in length (about one paragraph) and mirror the structure of factual online articles, with illustrative pictures added to increase the salience of the vignettes. Following each vignette, we included manipulation checks to ensure that respondents had paid sufficient attention to the experiment. In each subsection below, we briefly describe the main paragraph and the control and treatment conditions.

The main paragraph of the survey was designed to convey information about companies’ improper use and collection of personal data. We also mentioned that the Cyber Administration of China has been cracking down on illegal and excessive data collection practices since November 2019. We provided the following examples of data misuse:

- A company collects location data and access a smartphone’s camera without the user’s knowledge or consent
- A company sells personal data for profit without the user’s consent
- An App repeatedly displays data-sharing reminders or that interrupts usage until a user agrees to provide additional personal information.

Treatment and control. Three treatments and one control group follow the main paragraph. Our control group (Information on

IT and e-commerce) was provided with neutral, general facts about Information Technology. Content included simple descriptions of IT and how it relates to computer hardware, software, electronic products, semiconductors, the Internet, telecommunications equipment, and e-commerce.

Treatment 1 (US-China tech competition) sought to invoke respondents with a sense of tech rivalry between China and the US. We reminded people of the US-China high-tech competition and how innovation in AI has intensified. We mentioned that China is developing rapidly in the area of AI and that in 2020, Chinese scholars surpassed the United States in terms of the number of citations in AI journals. We also stressed that China still lags behind the United States in terms of total investment in artificial intelligence and that to become a world leader in AI, China needs to invest more in AI. We also mentioned that the rapid development of AI in China has been buttressed by strong policy support, a solid educational system, as well as the ability of enterprises to collect consumer data. Finally, we mentioned that China's official policy goal is to become a world leader in AI development by 2030.

Treatment 2 (US sanctions on Chinese companies) mentioned that the trade war between China and the United States moved from corporate competition to national competition, emphasizing US policies that hinder Chinese national development. In the vignette, we stressed that since 2018, the United States has banned more than 300 Chinese companies from using American technology, which has resulted in Chinese companies losing access to critical parts for production. We described how this restricts the development of Chinese companies in science and technology and mentioned that Huawei has lost the right to use Google's Android operating system, which has caused its sales of smartphones to drop. We also mentioned how former US President Trump tried to force the Chinese company ByteDance to sell its successful TikTok business (the international version of Douyin) to a US company. Finally, we mentioned that the reason for a US ban on Chinese companies is to protect the US technology industry from Chinese exports.

Treatment 3 (Data collection by government agencies) moved away from US-China tech decoupling and, instead, reminded respondents how the government uses personal data. We observed that local governments have installed a series of technologies to monitor and collect citizens' personal data, stressing that citizens cannot opt out and that personal knowledge or consent is unnecessary for facial recognition cameras to monitor public spaces and collect personal biometric data. We also noted that public schools can be monitored through surveillance cameras, smart wristbands, and intelligent school uniforms that track students' activities. We mentioned that China's social credit system collects and uses artificial intelligence, face recognition, big data, and other technologies and systems to monitor and analyze the data of individuals and enterprises, and that all of this may happen without their knowledge or consent.

Outcome variables. The control and treatment scenarios were followed by questions associated with outcome variables that include respondents' willingness to share personal data with businesses and the central and local government. We also assessed whether respondents believe that businesses, the central government, and local governments will seriously protect their data. The following outcome variable assesses whether respondents believe that their data is critical for Chinese companies concerning global competition and the government's ambition to make China a world leader in developing AI technologies. At the end of the survey, we also asked respondents whether they would be willing to provide their facial biometric data to (A) a company or (B) the government,

respectively, in exchange for financial compensation. We sought to determine willingness to accept valuations (i.e., the monetary compensation needed to compensate for various goods) (Brynjolfsson et al. 2019), by asking respondents how much money (in Chinese Yuan), they would seek from a company or the government, respectively, in exchange for their biometric facial data.

Data availability

This study uses primary data collected through surveys. The data is anonymized and available for replication on GitHub at <https://github.com/yoloso/US-China-Tech-Decoupling>, <https://doi.org/10.5281/zenodo.7902796>.

Code availability

The code to replicate analysis and tables is publicly available on GitHub at <https://github.com/yoloso/US-China-Tech-Decoupling>.

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Author contributions

YSL designed the research, performed research, conducted the analysis, and wrote the paper. BCL designed the research, performed research, and wrote the paper. JW designed the research, performed research, and conducted pre-analysis.

Competing interests

The authors declare no competing interests.

Ethical approval

This study was approved by the Stanford University Institutional Review Board (Stanford Protocol ID: 58759).

Informed consent

All participants provided informed consent prior to participation in the survey.

Additional information

Supplementary information The online version contains supplementary material available at <https://doi.org/10.1057/s41599-025-04656-8>.

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