

(No) Privacy Please!: What Determines Chinese Attitudes Toward Online Government Monitoring

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This study investigates what are the determinants of public opinion toward government monitoring in China. Existing literature on acceptance of government monitoring has several open questions, including to what extent demographic variables influence the relationship, how government trust is related to acceptance of government monitoring, and whether acceptance of public vs. private monitoring has the same determinants. Using a two-wave survey of before and after the Covid-19 lockdowns in China, this survey finds that: 1) demographic factors do not appear to be related to acceptance of government monitoring; 2) government trust does predict attitudes, but the Covid-19 experience significantly modified this relationship, and 3) private monitoring acceptance does appear to have different determinants. The study concludes with consideration of some implications of these findings.

1 Introduction

The dramatic events of the Covid-19 era brought to the foreground citizens' relationship toward government tracking technologies. Users were often required to install apps that monitored their location, stores they entered, and even whether or not they purchased cold medicines (McMorrow and Leng, 2022). Nowhere was this tracking more invasive than in China, a place in which the government mobilized technological tools to deeply peer into the daily lives of its citizens. The impact of these events on users' attitudes toward technological monitoring has still not been fully described. Using a unique dataset, this study resolves several open questions in the literature regarding how citizens view government monitoring.

Citizen attitudes toward government intrusions on their online privacy is an understudied area with a number of open questions in the literature (Gómez-Barroso, 2018), particularly as how citizens view this topic in authoritarian and non-Western contexts. One open question is the

extent to which demographic or privacy knowledge variables predict attitudes. Literature on generalized privacy have a number of suggestions as to which variables may be important in shaping attitudes, but little has been done to see if these findings apply to attitudes towards government monitoring. To the extent there is an agreement in the literature, it is that government trust should be strongly related government tracking attitudes, but this literature has not come to an agreement about how an event like Covid-19 lockdowns alter the relationship or provided direct causal tests of the relationship. Finally, the literature is not clear as to whether the variables that predict government tracking attitudes should also predict private tracking or not.

To resolve these gaps in the literature, this study utilizes two waves of a survey conducted before and after the 2022 Covid-19 lockdowns in China to develop models of respondent attitudes. The first model examines a set of demographic and technology knowledge variables as predictors for government tracking acceptance and finds the models to be poor fits and few variables obtain statistical or substantive significance. The second set of models adds government trust as a predictor variable and finds, as expected, that government trust is an important predictor of attitudes. Next, a mediation model is developed that separates the direct effect of Covid-19 on government tracking attitudes from the indirect effect of Covid-19 influencing government trust, which then flows through to impacting attitudes on government monitoring. The mediation model finds that the overall effect of Covid-19 is positive but complex, with the direct and indirect effects operating in different directions. Finally, a model that tests whether any of the predictor variables for public tracking can predict attitudes toward private tracking; the model results suggest that they cannot.

Taken together, these results suggest that government trust matters but what may be equally important is the public perception of the rationale for government tracking, and that these two factors have an independent impact on attitudes. The conclusion discusses these results with respect to the literature and draws out some important implications and areas for future research.

2 Literature review

2.1 Background

What predicts respondent attitudes toward government tracking of their online activity has generated significant scholarly interest in the last ten years, yet the findings have not reached any firm conclusions on a number of important questions (Reddick et al., 2015). Compounding this problem, to date, most of the research on the topic has been conducted primarily on U.S. or Western respondents, with comparatively fewer researchers reporting on developing or non-democratic countries. This research agenda has taken on new urgency during the Covid-19 pandemic, as governments around the globe engaged in highly intrusive monitoring and data collection activities.

From the pre-Covid privacy literature, two important findings stand out. The first is that demographic variables are important predictors of attitudes toward generalized online privacy. In an important early study of early Internet users, Sheehan has found that education and age are two important determinants of online privacy attitudes (Sheehan, 2002). Others have replicated this result and found that characteristics such as gender, social setting, and income also play a role in forming privacy expectations (Anwar et al., 2017; Büchi et al., 2021; Lee et al., 2019). The second finding is that respondent personal experience with privacy and technology is also an important factor in predicting privacy attitudes. Baskaran and Mathew find that users who have significant knowledge and interest in privacy have a greater fear of losing their privacy and this fear motivates them to change their online behavior (Baskaran and Mathew, 2024). Dupree et al. suggest that there are several possible types of online user typologies, with user experience being a variable that matters but can potentially shift respondents to an extreme view in either direction (Dupree et al., 2016). Kokolakis, as part of a meta-analysis of privacy, notes that young people may be more conscious of their online privacy context and therefore are more active in policing their privacy boundaries (Kokolakis, 2017), a result replicated by Blank et al. (Blank et al., n.d.). These findings all suggest that personal characteristics and background are important determinants of privacy attitudes, though it is not clear how these findings relate to government monitoring specifically.

The second key finding is that trust in the state is an important correlate to whether respondents feel anxious about government monitoring of their online behavior. Davis and Silver find that Americans who have lower levels of trust in the government were less willing to accept government surveillance programs after the 9/11 terrorist attacks (Davis and Silver, 2004). Pavone and Esposti found that users either trusted the government and therefore did not find proposed monitoring concerning, or did not trust the government and therefore believed any monitoring to be threatening (Pavone and Esposti, 2012). Trüdinger and Steckermeier find that acceptance of government surveillance in Germany depends on how much respondents trust the state (Trüdinger and Steckermeier, 2017). However, this literature has, so far, not been able to causally link the two concepts. It is possible that acceptance of government monitoring is downstream of government trust, but it could also be the case that government trust and monitoring are both the result of personality or demographic attributes. It is also unclear from these studies how rapidly or what types of events might change government trust and then whether that change in trust would then alter attitudes for acceptance of government tracking.

The literature on government monitoring of citizens increased dramatically after the onset of the Covid-19 pandemic, though most of the findings echo those of Pavone and Esposti and other earlier scholars. Because the Covid-19 pandemic resulted in a wide range of new tracking technologies, scholars have focused directly on how users and respondents felt regarding government monitoring (for a sampling of the vast literature, see (Abramova et al., 2022; Garrett et al., 2021; Ioannou and Tussyadiah, 2021; Ong and Loo, n.d.; Wnuk et al., 2020)). To highlight one example of this Covid-era research, Ioannou and Tussyadiah highlights the linkage between state trust, surveillance acceptance, and perceived necessity in explaining the variation in willingness to use contact tracing apps in the U.S. Generally this research finds

Covid-19 is an important factor in shaping views of tracking. However, most of this research tests acceptance of specific monitoring technologies (such as vaccine passports) or examine attitudes only in close temporal proximity to the technology use and therefore offer limited information about the durability of these attitudes.

How these findings translate to the Chinese context is not clear. While recent research has begun to develop a picture of Chinese attitudes toward government monitoring, there are still some important unanswered questions. Several studies have found that Chinese respondents are generally more willing to use or accept government surveillance technologies across several different technology types (Habich-Sobiegalla and Kostka, 2023; Kostka et al., 2021; Kostka and Habich-Sobiegalla, 2024). Liu and Kostka, in separate papers, both find that trust in the state is correlated with increased acceptance of the social credit system (Liu) and surveillance more broadly (Kostka) (Kostka, 2023; Liu, 2022). To date, there have not been any major studies that have conducted a before and after analysis of attitude change as a result of China’s Covid-19 experience.

Finally, there is also a line of research into whether there are differences in attitudes if the surveillance is government versus privately conducted. Steinfeld finds that there are differences in attitudes between the two, with acceptance of the justification for surveillance being key for government monitoring (accepting the War on Terror as essential) versus compensatory benefits being the strongest predictor of private monitoring acceptance (Steinfeld, 2017). Nam finds that it is primarily demographic features that predict generalized privacy concerns, while government privacy concerns are primarily predicted by government trust (Nam, 2019). Research in China by Steinhardt et al. find that users in China tend to trust the government with their data more than they do with private corporations but does not consider the specific determinants of this variation in trust (Steinhardt et al., 2022). The two existing studies that show differential attitudes have not been replicated in non-Western contexts and also focus on specific privacy topics rather than asking about privacy in a more generalized sense.

2.2 Contribution

This work aims to make three contributions to the literature on government surveillance. First, it seeks to help clarify which demographic and attitudinal factors are important in predicting privacy concerns. Previous findings of support for respondent attributes that predict acceptance of government surveillance do not find support here may suggest features of the Chinese context that lead to this variation in results. This variation may also apply to other non-democratic or non-Western countries.

Second, this study aims to establish whether there is a causal linkage between government trust and government privacy attitudes. There have been very few studies of privacy attitudes that are not purely cross-sectional. The survey used in this paper was conducted in two waves, before the strict Covid controls were enacted in China, and another wave conducted just after the controls were relaxed. During this time, as You et al. have found, the Chinese response to

the pandemic engendered significant criticism and resulted in a decline in trust of government (You et al., 2024). This study can help understand if these events, and the intense government monitoring that was used to control the pandemic, lead to any significant changes in the relationship between state trust and acceptance of government surveillance.

Finally, it aims to assess whether there are different determinants of tracking acceptance depending on if tracking is conducted by private rather than government organizations. If there are different determinants, it would suggest that users are aware of the political context of government monitoring and that this awareness shapes their attitudes. This clarification is important given that much of the existing research on privacy attitude formation focuses on private monitoring (Gómez-Barroso, 2018).

2.3 Hypotheses

The existing literature and the specific features of this survey generates a set of testable hypotheses, including:

H_1 : Demographic variables such as age, education, and income predict acceptance of government monitoring

A finding here that certain demographic factors are predictors of attitudes toward government monitoring can help clarify whether the demographic linkages found in research on generalized privacy attitudes or attitudes toward private monitoring are similar for attitudes toward government monitoring.

H_{2a} Technical know-how and privacy consciousness predicts acceptance of government monitoring

H_{2b} : Technical know-how and privacy consciousness does not predict acceptance of government monitoring

Existing literature finds that those with significant experience or knowledge of information and communication technologies (ICTs) are more careful with their online privacy. However, it is also the case that the Chinese online information environment is highly controlled, particularly with respect to any information critical of the government (Han, 2018) so such knowledge may have less of an impact on attitudes. Government propaganda extolling the benevolence of the state with regards to ICT policy (Gainous et al., 2023) may even counteract or reverse the fear effect of greater knowledge. Therefore, privacy knowledge and technical skill may also be uncorrelated or positively correlated with support for government monitoring.

H_3 : Trust in government should predict acceptance of government monitoring

Both existing studies of Chinese users and those outside of China have all found this relationship to be a relatively robust one. Research on China has also found that government trust is an important predictor of many other social and attitudinal variables (Chen, 2017; Qiu et al., 2012; Zhou and Jin, 2018).

H_4 : The pandemic should alter the acceptance of government monitoring

This hypothesis could be true in two different ways. The first way is via a direct effect - the experience of intrusive and long-lasting surveillance could lower support for government monitoring. The second way is via an indirect effect - the experience of the pandemic could decrease government trust and then this decrease in trust leads to lower support for government surveillance.

H_5 : Factors that drive concern regarding government tracking should differ from concerns regarding private tracking

Given that previous research has found significant differences in the level of acceptance of tracking between public and private sources in China, and, that trust in government is likely not a factor for accepting private tracking, there should be differences in the factors that predict these two variables.

3 Data and summary statistics

The data for this project was collected via a commercial market research firm in two waves, February of 2021 and March of 2023. The 2021 survey had an $n=1500$ and the second had an $n=2000$. Questions on the two surveys were identical other than a minor change to a question that referenced a specific date. The timing of the two surveys came at two very different points in time of China's Covid-19 experience. The first survey was conducted approximately seven months after the last round of restrictions were lifted on the city of Wuhan. China, at the time, was essentially closed to foreign travel but otherwise had little in the way of day to day public health restrictions. Nationwide, daily Covid cases hovered around the single digits (*BBC News*, 2021). China was at a very different point in its journey in March of 2023. The year of 2022 saw widespread, intrusive digital monitoring introduced. Many major cities, such as Shanghai, Xi'an, and Shenzhen, underwent long and painful city-wide lockdown procedures. At the end of 2022, under the weight of a spiraling number of cases and widespread protests (termed the White Paper Revolution), China finally abandoned its zero Covid policy (Mao, 2022). February 2021 is therefore at a point of Covid-19 awareness but of relatively mild restrictions on residents freedoms. March 2023 is far enough from the end of the zero Covid policies that any temporary effects of the lockdowns and monitoring should have faded but close enough to the end that differences in attitudes can plausibly be attributed to the Covid-19 experience. These two surveys therefore serve as excellent evidence to examine hypotheses 1-5.¹

The demographics of the 2021 and 2023 surveys are presented in Table 1.

¹All code and data to replicate these results available at the author's GitHub repository.

Table 1: Select key demographic variables

		Mean	Std. Dev.
Age		33.2	11.6
Location		N	Pct.
	Countryside/village	477	13.6
	Small city	1059	30.2
	Mid-sized city	840	24.0
	Big city	1131	32.2
Education	No formal education	22	0.6
	Primary	134	3.8
	Middle school	384	10.9
	High school	843	24.0
	University	1914	54.6
Gender	Advanced studies/Graduate school	210	6.0
	Female	1711	48.8
	Male	1796	51.2
Marriage status	Single	1101	31.4
	In a relationship	569	16.2
	Married	1744	49.7
	Divorced	93	2.7
Party member status	Yes	483	13.8
	No	3024	86.2
Communist Youth League status	Yes	1116	31.8
	No	2391	68.2
Income	0-2,999	275	7.8
	3,000-5,999	822	23.4
	6,000-9,999	899	25.6
	10,000-19,999	962	27.4
	20,000-49,999	385	11.0
	50,000-99,999	94	2.7
	More than 100,000	70	2.0
Year	2021	1500	42.8
	2023	2007	57.2

As is typical of online surveys in China, the sample respondents skew somewhat younger and more educated. Comparing the two waves, there are some modest demographic differences (notably education and marriage) between the two samples. As will be shown in Section 4, these minor differences do not appear to change any of the substantive results. Focusing on the 2023 survey, the modal respondent is someone from a small city, male, married, working in a white collar job at a small enterprise, who earns about 10,000 RMB a month and has an

Table 2: Questions asking about attitudes toward government monitoring

GM1	There are good reasons for the central government to monitor the activity of users online
GM2	There are good reasons for the local government to monitor the activity of users online
TRACK1	How comfortable are you with the central government knowing personal details about your activity online?
TRACK2	How comfortable are you with the local government knowing personal details about your activity online?

urban residence permit (*hukou*).

To simplify the analysis that follows, the variables are recoded such that income is divided into three categories (low, middle, and high) and education is divided into two categories, those with college education and those without. The regressions in the following sections were tested with alternate specifications of these categorical variables (code for these regressions available at the author’s website) and the key results were unaffected.

The key response variable for the following analysis is an index variable created by combining the results of the four questions in Table 2, rescaled to be between zero and one. It is true that previous research has found that Chinese respondents place lower levels of trust in local governments as compared to central governments (Chen, 2017; Zhong, 2014). However, the correlation between GM1 and GM2 is 0.84 and the correlation between TRACK1 and TRACK2 is 0.87. Additionally, as shown in the online appendices, each of the major regression results in Section 4 do not demonstrate major changes if the same variables are regressed on each of the survey question items individually. Indicating their close relationship, the variables taken together have a Cronbach’s α of 0.81. Intuitively, this high level of relatedness makes sense as while respondents have some background attitudes about the difference between central and local governments, they may not easily be able to identify at which level government tracking occurs.

Finally, there has been some debate as to the extent of preference falsification of political attitudes on online surveys in China (Carter et al., 2024; Jiang and Yang, 2016; Ratigan and Rabin, 2020). If the respondents are afraid of revealing their true attitudes toward the government, it may potentially bias the results. To test for preference falsification, the survey instrument also contained several list experiment questions in which respondents did not have to directly reveal their preferences but instead their attitudes can be inferred indirectly. List experiments have been used in a number of surveys to allow residents a confidential method to express their true attitudes about topics such as racial views, sexual assault experience, and political views (Moseson et al., 2017; Redlawsk et al., 2010). While Glynn (2013) points out that list experiments should not be seen as silver bullet to the problem of preference falsification, the results of the list experiments (available in the online appendices) roughly match the answers to the component questions that comprise the response variable index.

Additionally, the topic of the survey is less sensitive than other, directly political, research and should therefore be less likely to engender significant fear of punishment from respondents.

Overall, the survey data should provide a robust test to arbitrate between the hypotheses posed in Section 2.

4 Analysis

4.1 Predicting citizen attitudes about government monitoring

The first set of models considers the question of which demographic variables predict variation in attitudes toward being tracked by the government. Overall, the central finding is that the demographic variables are relatively weak predictors of acceptance of government monitoring. The key predictor variables included in Table 3 are the standard suite of demographic variables, the tech savvy index (TSI), and the knowledge index (KI). The items used to construct the two indices variables are listed in Section 8. The Cronbach's α for each of the two variables are 0.8 and 0.55 respectively, indicating that the questions are suitable for use in an index.

The coefficients generally indicate effects in the direction expected. Older respondents are more accepting of government tracking, while being male and not being a member of the party predict lower acceptance of tracking. Curiously, living in a big city has a positive relationship with tracking acceptance, as does the year 2023. Being tech savvy is positively related to acceptance of tracking, while having knowledge of privacy is negatively associated with the response variable.

However, with respect to the magnitude of the coefficients, the response variable is scaled between zero and one with a standard deviation of 0.2. Given this scaling, the coefficients of the categorical variables all have rather small effect sizes - being in year 2023 instead of year 2021 produces a shift in the response variable of about a third of a standard deviation. For the other categorical variables, while some reach significance, they have even smaller effect sizes. The tech savvy index has a standard deviation of 0.21. The coefficient of TSI indicates the impact of a one unit change in the index (going from its minimum to its maximum) on the response variable. However, a more typical shift in TSI produces an effect only one fifth as large, or about a fifth to a tenth of a standard deviation change in the response variable. Similarly, for KI, a typical shift in the predictor variable leads to a nearly negligible change in the response variable.

As can be inferred from the results in this table, the model fit is relatively poor. The poor model fit can also be seen in the very low R^2 values and in the extremely poor model residuals (available in the online appendices). Taken together, these results indicate that the available demographic factors do a poor job explaining variation in attitudes towards government tracking, suggesting that the Chinese context may have other factors that are more important and relevant to predicting support for government tracking.

Table 3: Demographic predictors of attitude toward government privacy

	(1)	(2)	(3)	(4)	(5)	(6)
(Intercept)	0.573*** (0.019)	0.548*** (0.019)	0.488*** (0.021)	0.506*** (0.023)	0.504*** (0.022)	0.576*** (0.022)
Age	0.001*** (0.000)	0.001** (0.000)	0.002*** (0.000)	0.001*** (0.000)	0.002*** (0.000)	0.001*** (0.000)
College education	0.010 (0.008)	0.014+ (0.008)	0.006 (0.008)	-0.026 (0.017)	0.006 (0.008)	0.014+ (0.008)
Middle income	0.000 (0.008)	0.002 (0.008)	-0.003 (0.008)	-0.004 (0.008)	-0.003 (0.008)	0.001 (0.008)
High income	-0.015 (0.017)	-0.012 (0.017)	-0.024 (0.017)	-0.025 (0.017)	-0.024 (0.017)	-0.014 (0.017)
Male	-0.004 (0.007)	-0.003 (0.007)	-0.009 (0.007)	-0.010 (0.007)	-0.040* (0.016)	-0.004 (0.007)
Not a party member	-0.033** (0.010)	-0.034*** (0.010)	-0.030** (0.010)	-0.029** (0.010)	-0.030** (0.010)	-0.032** (0.010)
Location: small city	0.000 (0.011)	0.002 (0.011)	-0.003 (0.011)	-0.001 (0.011)	-0.003 (0.011)	0.002 (0.011)
Location: mid city	0.007 (0.012)	0.009 (0.012)	0.000 (0.012)	0.001 (0.012)	0.000 (0.012)	0.008 (0.012)
Location: big city	0.013 (0.012)	0.014 (0.012)	0.001 (0.012)	0.002 (0.012)	0.001 (0.012)	0.013 (0.012)
Year 2023		0.037*** (0.007)	0.039*** (0.007)	0.038*** (0.007)	0.038*** (0.007)	0.036*** (0.007)
TSI			0.118*** (0.017)	0.010 (0.055)	0.017 (0.052)	
TSI x education				0.069* (0.034)		
TSI x sex					0.065* (0.032)	
KI						-0.058** (0.022)
Num.Obs.	3507	3507	3507	3507	3507	3507
R2	0.008	0.016	0.029	0.030	0.030	0.018

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Reference values: no college education, low income, female, party member, countryside

Standard deviation of the response variable: 0.2

4.2 Does government trust affect attitudes?

Another plausible relationship is that generalized trust in government is a strong predictor of attitudes toward government monitoring. Similar to the key variables in the preceding section, the measure of both local government and central government performance are combined into an index (GPI). As noted in Section 3, while there has been an observed gap in measurement of the two concepts in previous literature (and in these surveys), the responses to the two questions are nevertheless highly correlated ($\rho = 0.73$). To the extent that they measure disjoint opinions, models 1b and 1c take central government performance alone and local government performance alone, as the response variables.

The coefficients on in Table 4 indicate that government performance is a much stronger predictor of attitudes towards government tracking than the index demographic variables. In model 1, a one standard deviation increase in the government performance index (0.2) predicts about a one third of a standard deviation change in attitudes towards government tracking, a relatively significant effect for an attitudinal survey. Additionally, the two interaction terms are also both significant. The effect of these interaction terms can be viewed in Figure 1. Education lessens the impact of government performance on acceptance of government tracking while year 2023 increases the impact. Finally, the model fit diagnostics have improved, indicating a better model fit.

As expected, government performance, controlling for demographic factors, is a relatively strong predictor of acceptance of government performance. According to the model, a positive view of government performance is associated with an increased acceptance of government monitoring. However, the relationship is likely more complex than a simple direct causation model, particularly given the tumultuous events of the 2022 Covid-19 lockdowns in China. To further explore how these factors interact with each other, the next section develops a mediation model to better understand how this relationship may have changed due to the events of 2022.

4.3 Changing attitudes since the pandemic

The following directed acyclic graph (DAG) indicates the hypothesized causal process that generates the observed outcome variable, tracking acceptance. In Figure 2, TA represents tracking acceptance, GP represents government performance approval, DEMO represents demographic characteristics, and COVID represents respondents' Covid-19 experience.

To operationalize this model, the first step is to create a latent demographics construct with the demographic variables previously used in regressions in the earlier sections loading onto this construct. COVID is operationalized by the **year** variable. Admittedly, this is not a precise operationalization of the Covid experience - the **year** variable actually measures all changes between survey waves not accounted for by other variables. With respect to government tracking acceptance attitudes, however, this assumption can be justified by the fact that the

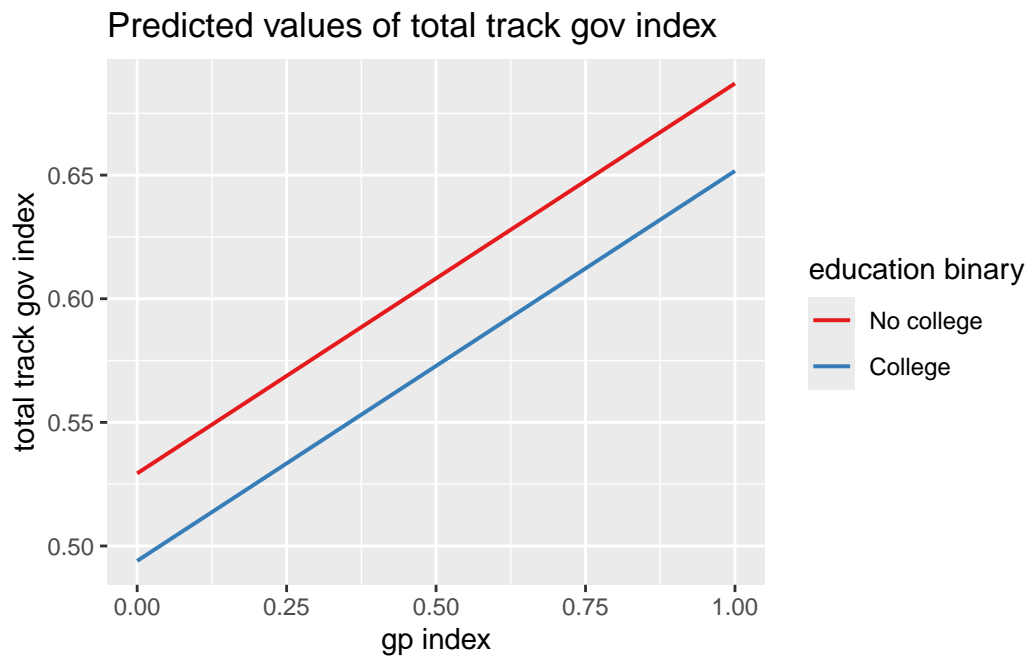
Table 4

	(1)	(1a)	(1b)	(2)	(3)	(4)
(Intercept)	0.214*** (0.021)	0.212*** (0.021)	0.299*** (0.020)	0.236*** (0.024)	0.266*** (0.027)	0.297*** (0.031)
Age	0.001** (0.000)	0.001** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001** (0.000)	0.001*** (0.000)
College education	0.012+ (0.007)	0.012+ (0.007)	0.013+ (0.007)	-0.026 (0.024)	0.012+ (0.007)	-0.035 (0.024)
Middle income	-0.003 (0.007)	-0.001 (0.007)	-0.003 (0.007)	-0.003 (0.007)	-0.003 (0.007)	-0.003 (0.007)
High income	-0.013 (0.015)	-0.010 (0.015)	-0.015 (0.015)	-0.013 (0.015)	-0.013 (0.015)	-0.013 (0.015)
Male	-0.005 (0.006)	-0.006 (0.006)	-0.003 (0.006)	-0.005 (0.006)	-0.005 (0.006)	-0.005 (0.006)
Not a party member	-0.028** (0.009)	-0.026** (0.009)	-0.031*** (0.009)	-0.028** (0.009)	-0.029** (0.009)	-0.029** (0.009)
Location: small city	-0.006 (0.010)	-0.003 (0.010)	-0.007 (0.010)	-0.006 (0.010)	-0.006 (0.010)	-0.006 (0.010)
Location: mid city	-0.001 (0.011)	0.008 (0.011)	-0.006 (0.011)	-0.001 (0.011)	-0.001 (0.011)	-0.001 (0.011)
Location: big city	0.011 (0.010)	0.022* (0.010)	0.002 (0.011)	0.010 (0.010)	0.010 (0.010)	0.010 (0.010)
Year 2023	0.052*** (0.006)	0.053*** (0.006)	0.047*** (0.006)	0.052*** (0.006)	-0.024 (0.025)	-0.030 (0.025)
GPI	0.431*** (0.015)			0.352*** (0.050)	0.269*** (0.054)	0.158* (0.077)
CG performance		0.406*** (0.014)				
LG performance			0.344*** (0.014)			
GPI x education				0.050+ (0.030)		0.062* (0.030)
GPI x year					0.098** (0.031)	0.105*** (0.032)
Num.Obs.	3507	3507	3507	3507	3507	3507
R2	0.207	0.200	0.165	0.207	0.209	0.210

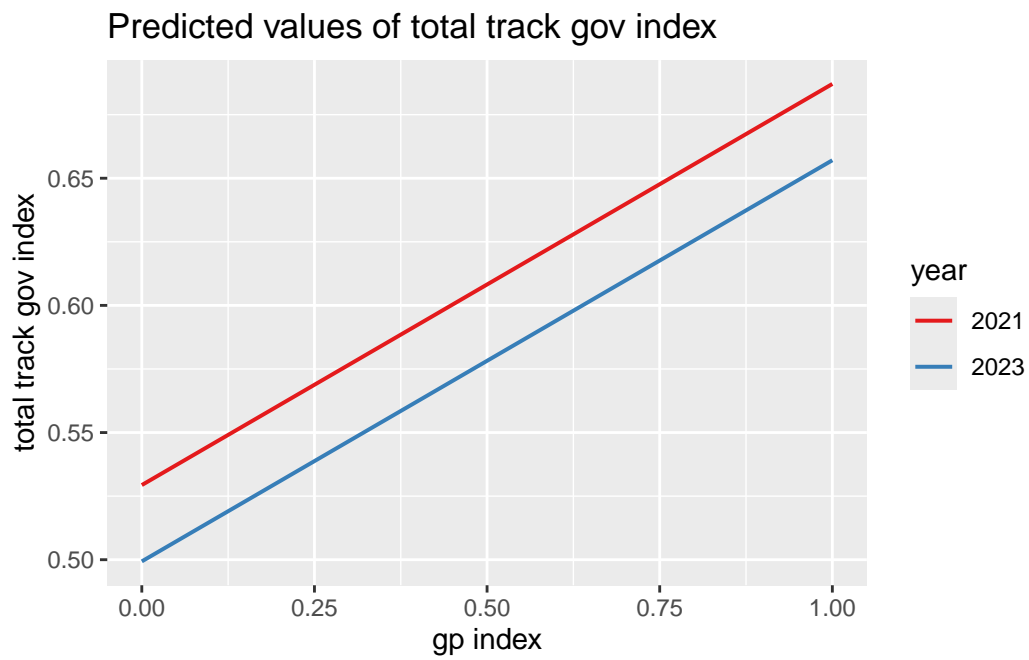
+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Reference values: no college education, low income, female, party member, countryside

Standard deviation of the response variable: 0.2



(a) GPI x education



(b) GPI x year

Figure 1: Marginal effect plots of interaction terms

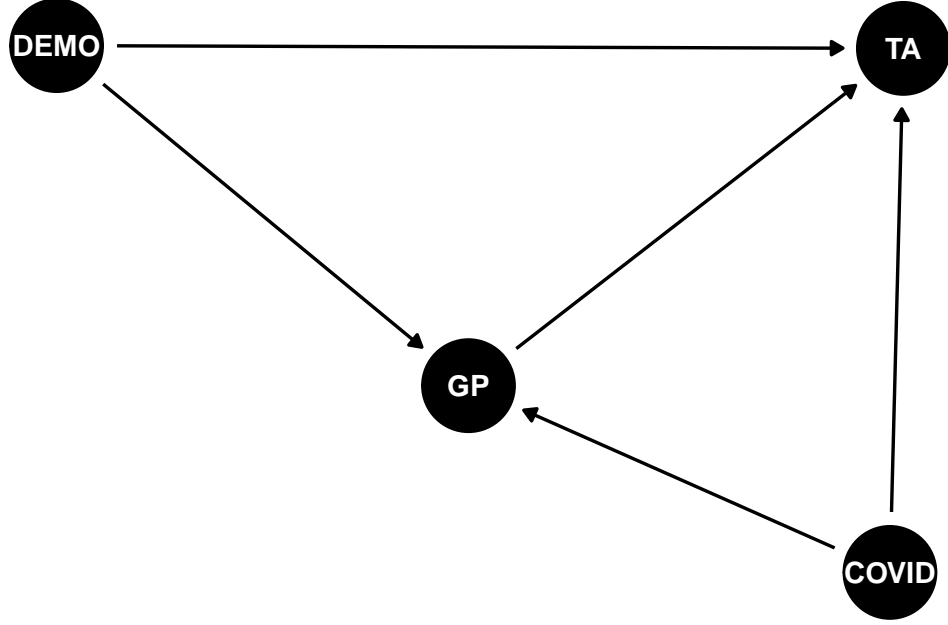


Figure 2: Causal process

Covid-19 experience was both a daily and often traumatic one for the Chinese public; it was a time period that involved constant and invasive technological monitoring. If the model does indicate that the **year** variable predicts significant change in the response variable over the two year difference between survey waves, it would be hard to imagine any other plausible cause as no other large shifts in technological control existed in the roughly two years between survey waves. Nevertheless, it is important to keep in mind that it is only a proxy measurement. These variables (**year** for COVID, GP, TA, and DEMO) are entered into a structural equation model with paths constrained to that described by the DAG in Figure 2 and then the parameters are estimated using the `lavaan` library in R.

The results from this analysis in Table 5 confirm some of the previous findings and also reveal some interesting new features of the data. As before, government performance plays an important role in determining tracking acceptance. Similarly, demographic questions do help predict tracking acceptance, but only by a little bit. Demographics do not help predict views on government performance, and therefore, it is not surprising that demographics does not have an indirect effect on tracking acceptance through government performance either. However, the Covid-19 experience, as operationalized by the year variable, does 1) positively increase tracking acceptance (direct path) 2) negatively decreases government performance evaluations (direct path) and 3) negatively decreases tracking acceptance through government performance evaluations (indirect path). The size of the coefficients indicates that the sum of the effects is still positive on tracking acceptance. These results indicate that the Covid-

Table 5: Mediation model results

	(1)
DEMO to GP	−0.008 (0.005)
GP to TA	0.430*** (0.015)
DEMO to TA	−0.010* (0.005)
COVID to TA	0.053*** (0.006)
COVID to GP	−0.037*** (0.007)
DEMO to GP to TA	−0.003 (0.002)
COVID to GP to TA	−0.002*** (0.000)
Num.Obs.	3507
AIC	52 129.6
BIC	52 246.7

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Demographic factor variable loadings omitted

19 experience in China did have the effect identified by You et al. (2024), which did result in the hypothesized decrease in acceptance of government tracking. However, this decrease in support was cancelled out by the direct effect of Covid-19 on acceptance of tracking. A plausible interpretation of this is that, as Kostka and Habich-Sobiegalla (2024) has found, respondents agree that the tracking during Covid-19 lockdowns was necessary, but, because of the government incompetence in responding to the spread of the virus, they were less likely to positively agree than they might otherwise have been.

4.4 Comparing attitudes to private monitoring

Finally, it is interesting to compare the determinants of government tracking attitudes with those that determine attitudes toward private tracking of personal information. To compare these two sets of attitudes, Table 6 includes models that use the previous acceptance of government tracking index (**Public TA**) as the variable alongside a similarly constructed index variable that measures acceptance of private monitoring (**Private TA**).

The results here suggest that the determinants of attitudes towards private company tracking are somewhat different than those that determine attitudes towards public tracking. The **year** variable is not significant for the private tracking models, while the tech savvy coefficient has roughly doubled. Unsurprisingly, government performance is also not related to private tracking acceptance. Finally, the intercept is generally lower for private tracking acceptance, indicating that respondents are less willing to accept private tracking, all things being equal.

These results lend support to the hypothesis that acceptance of public tracking has different determinants than those for private tracking and also supports previous research that finds a significant difference between acceptance of these two types of monitoring. The **year** variable being insignificant for the private tracking indicates that the pandemic-era tracking was not perceived as being fundamentally related to commercial monitoring.

5 Conclusion

China’s experience with Covid-19 significantly altered attitudes towards government tracking - even though trust in the state decreased, overall support for tracking increased. Demographic variables and informational variables do not serve as strong predictor variables for attitudes towards government tracking. Factors that predict government tracking acceptance do not show a meaningful relationship with private tracking acceptance.

These results have important implications for the current literature. Contrary to the literature on demographic characteristics and privacy, this study found very little predictive power in demographic variables, either with personal variables or measures of knowledge of technology. This finding suggests that generalized privacy attitudes have different determinants

Table 6: Comparison of public vs. private tracking acceptance

	Public TA			Private TA		
	(1a)	(1b)	(1c)	(2a)	(2b)	(2c)
(Intercept)	0.488*** (0.021)	0.576*** (0.022)	0.214*** (0.021)	0.270*** (0.025)	0.432*** (0.026)	0.344*** (0.027)
Age	0.002*** (0.000)	0.001*** (0.000)	0.001** (0.000)	0.000 (0.000)	−0.001** (0.000)	−0.001** (0.000)
College education	0.006 (0.008)	0.014+ (0.008)	0.012+ (0.007)	−0.027** (0.009)	−0.010 (0.009)	−0.010 (0.009)
Middle income	−0.003 (0.008)	0.001 (0.008)	−0.003 (0.007)	−0.059*** (0.009)	−0.049*** (0.009)	−0.049*** (0.009)
High income	−0.024 (0.017)	−0.014 (0.017)	−0.013 (0.015)	−0.027 (0.019)	−0.004 (0.020)	−0.002 (0.020)
Male	−0.009 (0.007)	−0.004 (0.007)	−0.005 (0.006)	−0.006 (0.008)	0.006 (0.008)	0.007 (0.008)
Not a party member	−0.030** (0.010)	−0.032** (0.010)	−0.028** (0.009)	−0.010 (0.012)	−0.016 (0.012)	−0.017 (0.012)
Location: small city	−0.003 (0.011)	0.002 (0.011)	−0.006 (0.010)	−0.043** (0.013)	−0.032* (0.013)	−0.033* (0.013)
Location: mid city	0.000 (0.012)	0.008 (0.012)	−0.001 (0.011)	−0.056*** (0.014)	−0.038** (0.014)	−0.039** (0.014)
Location: big city	0.001 (0.012)	0.013 (0.012)	0.011 (0.010)	−0.051*** (0.014)	−0.024+ (0.014)	−0.024+ (0.014)
Year 2023	0.039*** (0.007)	0.036*** (0.007)	0.052*** (0.006)	0.006 (0.008)	0.001 (0.008)	0.005 (0.008)
TSI	0.118*** (0.017)			0.252*** (0.021)		
KI		−0.058** (0.022)			−0.069** (0.027)	
GPI			0.431*** (0.015)			0.071*** (0.020)
Num.Obs.	3507	3507	3507	3507	3507	3507
R2	0.029	0.018	0.207	0.057	0.018	0.020

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Reference values: no college education, low income, female, party member, countryside

Standard deviation of Public TA is: 0.2

Standard deviation of Private TA is: 0.24

than attitudes toward government monitoring in China, a finding that is in line with the research of Nam and Steinfeld on American attitudes towards privacy (Nam, 2019; Steinfeld, 2017). Additionally, while a finding that government trust is a strong predictor of attitudes is in accordance with much of the existing literature, a finding that public events may play a significant role in changing attitudes is a novel finding. (Davis and Silver, 2004) suggested 9/11 may have created an important context that shaped whether respondents judged the surveillance necessary and acceptable, a finding compatible with the results here. Finally, while the determinants of acceptance of private tracking in China need further exploration than what is presented here, they do seem to differ substantially from that of government tracking, suggesting .

One caveat to this research is that it only asked about generalized acceptance of tracking. Kostka et al. (2021) is one of the few studies to focus on specific technological applications (facial recognition technology). More research on what specific technological modes and aspects of privacy elicit variation in acceptance would be welcome. Additionally, this research only focused on a crisis in which trust in government fell but the public nevertheless accepted the general social need for the technology. Other permutations of increased / decreased trust in government and variation in public acceptance of the role of technological monitoring could strengthen the findings presented here.

This study suggests that context and acceptance of the rationale for tracking independently affect attitudes toward online privacy, a finding governments would do well to internalize as AI and big data continue to increase the interactions between citizens and their governments.

6 Biography

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Table 7: Index variable component questions

Q1	How would you rate your general ability to use a computer?
Q2	How would you rate your skill at fixing a computer?
Q3	How would you rate your ability to program a computer?
Q1	I am very concerned about my privacy online
Q2	I spend a lot of time reading about technology related privacy issues
Q3	In the last year, I have had discussions with my friends about online privacy issues
Q4	I feel like I know exactly how much privacy I have online
Q5	Have you heard of the social credit system (official terminology)?
Q1	Overall, I'm happy with the performance of the central government
Q2	Overall, I'm happy with the performance of my local government

8 Appendix

8.1 Index variable definitions