

CONSUMER PRIVACY AWARENESS AND ONLINE SERVICE COMPANIES PRIVACY-PRESERVING FEATURES IN MAINLAND CHINA

The Study of Correlation between Consumer's Privacy Concerns and the Consumer's Perception of the Privacy-Preserving Features in Guangzhou and Shenzhen

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Abstract

This study looks at in what degree the consumers in Guangzhou and Shenzhen are aware of the privacy protection aspects of online services, their privacy concerns, and their privacy practices. To that purpose, a test model was created that included information privacy concerns, level of knowledge of online services' privacy-preserving features in mainland China, perceived sensitivity to privacy threats, perceived response expediency, and private information actions, among other things. An online questionnaire was used to collect responses from 71 consumers of internet services in Guangzhou and Shenzhen. Users are concerned about the privacy of their data, according to the survey. They are still unaware of the need of privacy-protective activities in order to maintain their online privacy. The research also found that mainland China consumers are unaware of social networking sites' privacy protection measures. The results of utilizing structural equation modeling to test hypotheses revealed that information privacy concerns influenced privacy-preserving behavior in online services in a beneficial way. Information privacy concerns were favorably influenced by perceived ability to perceive privacy hazards.

Keywords: Privacy, consumer perceptions, consumer behavior, information privacy concern, perceived vulnerability, privacy-preserving features

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Introduction & Literature Review

Online Services Privacy

Privacy has become a contentious issue for both individuals and legislators due to the development of technologies that make it easier to acquire, distribute, store, and manipulate personal consumer information. Numerous studies in diverse fields have improved our understanding of privacy. The term privacy is defined as the combined needs for personal space and visual, physical, or psychological separation and control over one's individual property and data (Miltgen, 2009). Several researchers and theorists further confine the term privacy has been described as multidimensional, elastic, depending upon the context, and dynamic because it varies with life experience (Laufer & Wolfe, 1977). In today's society, online privacy has become a significant concern. There are many threats to people's privacy (Solove, 2006).

Numerous studies have revealed Internet users' privacy concerns to be a significant antecedent of their readiness to divulge personal information to online service providers. Many incidents and cases are related to personal information leakage in the online services market. According to Business Insider, the phone numbers and personal information of around 533 million Facebook users have been published online. Phone numbers, Facebook IDs, full names, addresses, birthdates, bios, and, in some cases, email addresses are all included (Holmes, 2021). Also, as Naresh Malhotra, Sung S. Kim, and James Agarwal point out in their research, the general concerns reflect the individuals' inherent worries about the possible loss of information privacy (Malhotra et al., 2004).

Shift the focus to consumer market, Turow and King found that 66% of Americans reject the idea of online advertising with personal information collection (Turow et al., 2009). Also, a study published in the Journal of Retailing corroborates the previously presented information

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about the privacy concerns: according to a US Department of Commerce study on e-commerce and privacy, 81 percent of consumers who buy goods and services through the Internet are concerned about online privacy threats (Caudill & Murphy, 2000). The cause of this concern is that consumers have a mindset that they have the right to decide which data about themselves might be collected and stored and how data is supposed to be processed. Other researchers support this conclusion by stating that personal privacy refers to an individual's, group's, or institution's right to control when, how, and to what degree personal information about them is shared with others (Trojer et al., n.d., p. 1). This suggests there is a significant correlation between consumer trust in business practices consumers have limited trust in online service providers and are very concerned that these companies will use their private information. Hence, a survey of consumer attitudes toward privacy is significant. Therefore, the researcher decided to develop an online privacy survey.

On the other hand, individuals have realized that in order to engage in e-commerce, they must give up a tiny amount of their privacy. (Gandy, 2011; Wang & Petrisson, 1993). These findings reflect that people are not sufficiently aware of protecting their personal information privacy due to their perception of privacy. This is significant since it confirms that consumers in mainland China are not sufficiently aware of the need to protect their private information. Consumers cannot overlook the fact that they lack a fundamental grasp of the privacy protection measures offered by the firms that deliver the services they use (Milne 1997). Nevertheless, on the other hand, consumers are only concerned about the leakage of their data, not the purpose for which the company collects it.

Consumer Privacy Awareness

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Individuals may have different perceptions of the likelihood of negative outcomes and the severity of personal data breaches. The primary assumption of this concept is that consumers who are very concerned about the privacy of their information will attempt to defend their privacy by reacting negatively to organization's information practices if they believe that their privacy rights have been violated (Norberg et al., 2007). Consistent with Norberg and Horne, Smith point out that privacy loss is associated with disclosing personal information (Smith et al., 1996). This is also a significant issue in the existing consumer market, as almost all online service companies collect personal data for various purposes.

Specifically, Milne et al. (2009) suggest that consumers may experience a sense of emotional respectability toward information collection. That said, some consumers are positive of collecting personal information from online service providers since it improves the quality of services. Still, there is a lack of empirical testing of this proposition or its impact on consumer behavior. Milne and Gordon found that consumers have different beliefs and perceptions about direct marketing, particularly catalogs and advertising mailings (Milne et al., 2009). These perceptions, in turn, influence on what extent consumers is concerned about privacy issues. This demonstrates that how a company collects information about its users and how it will use it is directly related to consumers' perceptions of privacy.

Existing Privacy-Preserving Features

With the rise in privacy intrusions and data breaches, more people are seeking online privacy protection. To satisfy this need, according to Lee's study, numerous firms have introduced various privacy-preserving measures to keep consumers' online privacy worries to a minimum (Lee et al., 2011). Nevertheless, since privacy-preserving features require the company

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to invest in adequate human, material, and financial resources, a more straightforward method for the businesses to do is privacy policy. The term “privacy policy” is referred to the information provided by the operator of an eCommerce website to explain its practices concerning the personal data that it gathers about consumers (Clarke, n.d., p. 3).

On the other hand, Huang & Bashir (2020), showcases that users still do not adopt these features and technologies, who claim that the interface design of web browsers' private browsing mode evokes both pleasant and negative emotions among users, such as overly trusting, uncomprehending, or resistance to these features. This exemplifies some of the shortcomings of today's privacy protection features, namely that they are not user-friendly. Furthermore, users will not want to use these features in this way, causing privacy leaks. In other words, the different settings of the privacy protection function can significantly affect the user's perception.

In short, the existing privacy protection features are still not designed to ensure that users' privacy is not violated. This is one of the purposes of this study, to determine the privacy concerns of existing consumers about online services and to determine for service providers and legislators what characteristics an appropriate privacy protection feature should have.

Existing Gap, Purposes, and Hypotheses

Research related to the relationship between consumer privacy perceptions and privacy protection functions and systems is limited. Additionally, the previous studies are not focusing on people in mainland China, which leaves a gap.

People who live in Guangzhou and Shenzhen were explicitly chosen because there is a complete lack of research in this area. In past studies, researchers have investigated this issue in Europe and the United States. However, never in China, which has the most significant number

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of Internet users globally (Nemec Zlatolas et al., 2019; Phelps et al., 2000). Also, WeChat, as the mainstream social media software in mainland China, had 1.2 billion monthly users in 2020 will have more experimental samples to choose from (Thomala, 2022).

Therefore, guided by the inquiry question, “*What's the correlation between consumer's privacy concerns and consumer's perception towards the privacy-reserving features?*”, my study aims to find out the correlation between people’s privacy concerns and people’s attitude to privacy-preserving features.

Based on the development of the “online privacy construct” by Malhotra et al (2004), model of consumers perceptions by Schwaig et al. (2015) and the structural equation modelling implementation by Sami & E. (2016), the following six hypotheses are constructed. The related research model will be explained in the Methodology section.

Table 1. Research Hypotheses	
Hypothesis 1	Privacy concerns in internet services have a positive effect on privacy protection practices.
Hypothesis 2	Increased knowledge of online services' Privacy-Preserving Features has a positive impact on mainland China online services' privacy protection practices.
Hypothesis 3	Privacy-protecting practices are positively influenced by perceived vulnerability to privacy concerns.
Hypothesis 4	The perception of privacy risks raises the level of knowledge of privacy-preserving features in mainland China online services.
Hypothesis 5	Information privacy concerns are positively influenced by perceived sensitivity to privacy issues.
Hypothesis 6	Information privacy concerns are positively influenced by perceived response efficacy.

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Methodology

Methodological Design

This study utilizes correlational research, which is helpful in understanding and assessing the statistical relationship between two variables with no influence from any extraneous variable (Curtis et al., 2016). Therefore, it is perfectly fit for my research since the researcher can determine the correlational relationship between two significant variables, people's perceptions of the effectiveness of the privacy-preserving and people's privacy concerns. Participants need to finish a survey on online security and privacy awareness. This research design has been widely used in past research. Chignell et al., 2003, asked the participants to complete a privacy survey. On a five-point scale, people were asked how much they agreed with privacy issues.

Similarly, Phelps et al., 2000, utilized the survey design, to ask participants how concerned consumers companies were about how use their personal information. Participants demonstrated their perceptions of data security and privacy-preserving features through questionnaires. Both studies used similar methodological design that allowed researchers to develop a causal relationship between privacy breaches, participants' concerns, and privacy features. For this reason, in the current study, the researchers referenced this methodological design.

The researcher currently includes an interview to collect selected participants' thoughts to gather some deeper or cannot be shown in the questionnaire since the questionnaire was designed to include only multiple-choice and scoring questions, it did not have any short answer questions. Therefore, it is not comprehensive to judge a person's opinion about a thing simply by the numerical value. Moreover, short-answer questions can record a person's thoughts in their entirety.

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The study was primarily quantitative and used a 5-point Likert scale for most of the questions, which is easier for the researcher to draw the conclusion and make inferences from the data since the data can be quantified easily (Joshiet al., 2015). There are also open-ended questions in the subsequent interviews that asked the participants' opinions on the effectiveness and usage of privacy-preserving features. Thus, the data generated by these questions are qualitative, which determines the mixed nature of this study.

Inspired by Schwaig et al. (2013) research about the relationship between an individual's concern for information privacy and their attitude toward an information practice in Saudi Arabia, the researcher also includes structural equation modeling in the research. Comparably, Chin (1998) and Gruzd & Hernandez-garcía (2018) utilize the Partial Least Squares in Structural Equation Modeling to study the ongoing debate on the 'privacy paradox' under the current social media context. Since these researchers have successfully implemented these methods to explore people's privacy perceptions, the researchers intend to refer to this method in this study.

Research Model and Constructs

Five constructs, as shown in the chart, has been developed and slightly modified based on Schwaig et al. (2013) study and online services in mainland China context, with multi-item measures to explore the model of privacy concerns.

Table 2. Constructs Variables	
Name of the Construct	Definition
Information Privacy Concern	It refers to the "degree to which a person is sensitive about organizational practices linked to the gathering and use of his or her personal data."

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Table 2. Constructs Variables

Awareness level of privacy-preserving features on mainland China online services (MCOSs)	This concept aims to determine the extent to which increased awareness of privacy-preserving features on mainland China online services (MCOSs) influences MCOSs privacy-protecting behavior. It refers to MCOSs users' awareness and comprehension of privacy-preserving mechanisms in the operating system.
Privacy protection behavior in MCOSs	The development of protective behaviors in order to protect one's privacy.
Perceived vulnerability to privacy risks in MCOSs	The likelihood that a user of MCOSs will be subjected to privacy threats.
Perceived response efficacy in MCOSs	The conviction that taking a prescribed protective measure will protect oneself and others from a threat.

The model is based on earlier research models that are based on a variety of hypotheses. Different hypotheses, agency theory and social contract theory, both indicate that information privacy concerns arise in online transactions due to imprecise information about client information online behavior (Li, 2012; Feng & Xie, 2014). In this work, the researcher focuses on MCOS users' information privacy concerns in order to truly comprehend the impact on privacy protection behavior. Neither the agency theory nor the social contract theory, on the other hand, provided a valuable foundation for exploratory research.

The impact of learning and analyzing the content of MCOS privacy-preserving features on raising the adoption of privacy-protecting behaviors was self-developed to study the impact of reading and understanding the content of MCOS privacy-preserving features on raising the adoption of privacy-protecting behaviors (Li, 2012).

People's behavior has been included into numerous information systems theories, including Social Cognitive Theory, Theory of Reasoned Action, Theory of Planned Behavior,

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and Protection Motivation (Li, 2012; Mohamed & Ahmad, 2012). Each theory's behavior was viewed from a different point of view. By examining the relation respectively perceived vulnerability to privacy risk, information privacy concern, awareness level of privacy-preserving features in MCOSs, and privacy protection behavior, the researcher hoped to better analyze the factors that affect the actions and practices MCOSs users take to protect their information privacy.

The objective here is to explore the link between this model and information privacy concern, knowledge level of MCOSs privacy-preserving features, and privacy protection behaviors, which was developed from the protection motivation theory (Mohamed & Ahmad, 2012).

Perceived response efficacy was developed from the protection motive theory, and it was included to help explain its impact on data privacy concerns (Li, 2012; Mohamed & Ahmad, 2012).

The researcher first initializes the five variables using a questionnaire and an interview, then uses Python and WarpPLS to construct the model to answer the study question by looking at the relationships between the minor variables.

Respondent Sample and Questionnaire Administration

The study was conducted on a representative sample of people in Guangzhou and Shenzhen, with 71 participants from 7 age groups, (15-19; 20-29; 30-39; 40-49; 50-59; 60-69; and 70+). The recruitment is completely volunteer-based. Among the 71 participants, there were 35 males and 36 females. Male and female participants might have different perceptions of the effectiveness of privacy-preserving features and privacy concerns. Thus, this gender distribution

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is preferable since both genders have approximately equal participants. Ideally, an equal number of participants in each age group is favored because people's perceptions of privacy typically vary on their age and personal experience. Therefore, the age group distribution in this study poses a potential limitation. To address this limitation, the match-pair statistical method is implemented in the process of data analysis. This inferential tool avoids direct comparisons of privacy perceptions between people of different ages, thus mitigating the potential influence of people's age and experience.

Participants could only see one question at a time when filling out the questionnaire. To avoid participants being overwhelmed by multiple questions appearing at the same time, they must click a "next" button to move on to the next question ("Questionnaire Design", 2005).

Instrumentation

A questionnaire to measure people's privacy concerns and privacy perceptions about online services will be designed for this study. The questionnaire was inspired by the "Online Privacy and Security Questionnaire" (Georgia Institute of Technology, 1993)

For the interview after the questionnaire, the purpose of all the questions in the interview was to learn more about the interviewees' understanding of their perceptions of privacy or how their perceptions of privacy were affected by an incident they had experienced with the security of their privacy. All respondents who participated in this interview indicated in the questionnaire that they were willing to participate in the subsequent interview. The researcher also selected respondents for further investigation based on quantifying the answers to three questions in the questionnaire.

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Because the majority of the participants are Chinese, the survey questions are written in Chinese with English translation. The interview format will be tailored to the respondent's preferences. Respondents have the option of being interviewed online via teleconference software (e.g., Microsoft Teams, Zoom) or in person.

Procedure

The researcher recruited participants through publicity in an online questionnaire-filling platform developed by Weibo. They were free to choose whether or not to participate, and they had the freedom to discontinue their participation at any moment without consequence. Interested participants will be provided with a copy of the "Information for Study Participation". Participants under 18 will also be provided with a parental consent form to obtain their parents' permission to participate in the study.

Then, participants received a questionnaire from the researcher via email. Since all respondents were from mainland China, the context of the questionnaire included online services in mainland China, such as WeChat, Weibo, TikTok, Meituan, Baidu, Taobao, JD.com, and other online service providers. All participants were given one week to complete the questionnaire after it was sent to them by the researcher. Participants were asked to use their laptops, tablets, or phones to complete the questionnaire. Prior to completing the questionnaire, participants were asked to send their "Consent Form to Participate in a Research Study" to the researcher via email and they were required to read and sign the consent form carefully before completing the questionnaire. The expected completion time for the questionnaire is 12 minutes.

The questionnaire included a brief introduction to the study, which participants needed to read to access the section of questions. The design of the questions in the questionnaire is similar

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to what many researchers have done in the past (Buchanan et al., 2006). By adopting a widely used design, the researcher ensured that the study's validity was similar.

Participants need to submit the questionnaire after completing all questions. In principle, participants must answer all questions without interruption to ensure that their thinking is not disturbed by other factors influencing participant responses.

After all, participants have completed this questionnaire, the researcher then selects those who need to participate in the following interview phase based on the participants' responses. Participants were required to explicitly indicate in the survey that they used the privacy features offered by the online service provider in their daily lives to be selected for the interview session. Participants who were not invited to participate in the next phase of the interview will receive a certificate of study participants from the researcher via email within one week of completing the questionnaire. The researcher will notify screened participants of when and how they will be interviewed.

In the interview, they will answer the following three questions:

1. What concerns do you have about privacy breaches in the online services you are currently using?
2. Have you ever experienced a privacy breach? If so, please describe in detail what happened.
3. What precautions are you taking on an ongoing basis to prevent online privacy breaches?

It should be noted that to avoid interference, all interviewees will not know the questions for these interviews until they are interviewed. Also, the researcher may choose one or two questions rather than asking all of them. The order of the questions will be disrupted. After they are interviewed, they will receive a certificate of study participants from the researcher within a week of the interview.

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Results

Response Rate and Respondent Profile

The total number of completed and useable surveys received was 71, resulting in a response rate of 79.6%. The first mailing resulted in the completion of 60 surveys. A second mailing, sent just to individuals who had not answered, resulted in the completion of 11 more questionnaires. A comparison of the first and second waves of responders revealed no statistically significant differences between them. Table 1 shows the demographic profile of responders (see Table 3).

Table 3. Respondent Profile

Demographics	
Age	%
Less than 20	32.40%
From 21 to 30	35.20%
From 31 to 40	11.30%
From 41 to 50	9.90%
More than 50	11.30%
Sex	%
Male	49.30%
Female	47.90%
Prefer not to say	2.80%
Education	%
Pre High School	0.00%
High School	22.50%
College	18.30%
Postgraduate	59.20%
Socio-professional category	%
Farmers	3.00%
Artisans, shopkeepers, CEOs	14.00%
Executives and intellectual professionals	17.00%
Intermediate professions	4.00%
Employees	30.00%
Workers	6.00%
Retired	7.00%
Unemployed	0.00%

As original plan, ten participants agreed to participate in the interview (See Appendix C).

Reliability for the Measurements

The research involved a total of 71 participants. The researcher employed partial least squares as a second-generation causal modeling statistical approach in this investigation since it was an exploratory study in the early phases of theoretical development. LISREL is often used for theory confirmation, although partial least squares is well known as a method for initial hypothesis testing (Fornell & Bookstein, 1982; Ma & Agarwal, 2007). PLS is also a good fit for more complicated predictive models (Chin, 1998). Partial least squares have been best suited for assessing complicated interactions by eliminating inadmissible solutions and factor indeterminacy in previous studies (Kim & Benbasat, 2006). As a result, Partial least squares are well suited to accommodate a high number of constructs and interactions in existing research.

In this study, the questionnaire was used as the primary assessment tool, and WarpPLS 8.0 was used to examine its reliability and validity. The measurement model was investigated by looking at the study instrument's convergent and discriminant validity, as described by Gefen, Straub, and Boudreau (2000) and Straub, Boudreau, and Gefen (2004). Convergent validity refers to the degree to which various attempts to measure the same construct agree (Cook & Campbell, 1979).

Aside from the moderators, the survey questionnaire measuring instrument contained 16 questions that formed five latent variables, similar to Noora's study. Cronbach's Alpha was also utilized to measure construct reliability and estimate indicator inter-correlations. Cronbach's Alpha requires a score of 0.7 or above to be considered acceptable. To evaluate the constructs'

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reliability, composite reliability was utilized, which, unlike CA, take into account the varying loadings of the indicators. A composite reliability score of 0.7 or above is considered satisfactory.

Table 3 demonstrates that all of the constructions have CA values larger than the permissible threshold of 0.7, and all of the CV values are greater than the acceptable threshold of 0.7.

Table 4. Measurement Reliability Testing Results			
Construct	Number of Items	Cronbach's Alpha	Cronbach's Reliability
Information privacy concern	2	0.791	0.905
Perceived vulnerability to privacy risks	5	0.832	0.882
Awareness level of privacy policies	3	0.851	0.910
Perceived response efficacy	4	0.868	0.911
Privacy protecting behaviors in Online Services	2	0.761	0.893

Factor Loadings

The factor loadings of the measured variables must be at least 0.5, else the variable will be evaluated for removal. The factor loadings for the measured variables were calculated using confirmatory factor analysis, as shown in Table 4. All variables must have a loading value greater than 0.5 to be included in the model.

Table 5. Factors Loading for Measured Constructs							
	IPC	PVPR	APPS	PRE	PPBS	SE	P-value
IPC1	(0.909)					(0.075)	<0.001
IPC2	(0.909)					(0.076)	<0.001

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PVPR1		(0.684)				(0.079)	<0.001
PVPR2		(0.857)				(0.078)	<0.001
PVPR3		(0.747)				(0.076)	<0.001
PVPR4		(0.767)				(0.079)	<0.001
PVPR5		(0.784)				(0.077)	<0.001
APPS1			(0.858)			(0.078)	<0.001
APPS2			(0.836)			(0.079)	<0.001
APPS3			(0.889)			(0.079)	<0.001
PRE1				(0.854)		(0.077)	<0.001
PRE2				(0.867)		(0.079)	<0.001
PRE3				(0.898)		(0.078)	<0.001
PRE4				(0.839)		(0.076)	<0.001
PPBS1					(0.865)	(0.078)	<0.001

The Validity Assessment

Convergent validity was evaluated for each latent construct by calculating composite reliability and the Average Variance Extracted. Based on convergent validity, "the extent to which a measure is related to other measures that have been designed to assess the same construct" (Schwaig et al, 2013). The average variance extracted as a convergence indicator is used to determine the mean-variance extracted for the construct elements. The composite reliability coefficients for all builds are more than the critical threshold of 0.7. In addition, all of the structures had an AVE value better than 0.5, as shown in Table 5.

Table 6. Convergent Validity Statistics for the Constructs

Construct	Composite Reliability	Average Variance Extracted
Information Privacy Concern	0.886	0.824
Perceived Vulnerability to Privacy Risks	0.856	0.591
Awareness Level of Privacy-Preserving Features	0.917	0.783

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Perceived Response Efficacy	0.921	0.737
Privacy Protecting Behaviors in Online Services	0.879	0.825

The degree to which a construct is actually distinct from one or more other constructs is referred to as discriminant validity. The square root of the Average Variance Extracted for each latent construct was computed, and the findings were then compared to the correlations of the other latent constructs to determine discriminant validity. For all of the structures, the AVE score was more than 0.5. In addition, as demonstrated in Table 6, the square root of AVE for each construct is larger than all other construct correlations, implying measuring discriminant validity.

Table 7. Discriminant Validity					
	IPC	PVPR	APPS	PRE	PPBS
IPC	(0.911)				
PVPR	0.673	(0.748)			
APPS	0.139	0.186	(0.839)		
PRE	0.158	0.273	0.093	(0.827)	
PPBS	0.492	0.424	0.173	0.124	(0.896)

Coding: Interview Responses & Frequency of Words and Phrases

The three questions in the interview were analyzed quantitatively to see participants' user experience of privacy-preserving features, whether these features are effective in protecting users' privacy, and the privacy leakage they have experienced before.

To examine the language and phrases that express the primary notion of their reasoning, a coding scheme was utilized to determine the major variables and themes. The data table, which provided the reasons for picking each answer, was evaluated using coding, and useless answers

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such as "." and "I don't know" were eliminated from both surveys' responses. To limit text interpretation and promote research replicability in a quantitative method study, code words were assigned to number counted. This aids in the identification of various explanations for the replies, as well as the use of code words to swiftly locate themes and the variation of their existence via a manual read-off text.

Table 8. Themes Identified in the interview transcription data (Shown in Appendix B)

Table 9. Categories Identified in the interview transcription data (Shown in Appendix B)

Table 10. Codes Identified in the interview transcription data (Shown in Appendix B)

Goodness of Fit Measures

Table 7 shows the results of the confirmatory factor analysis similar to Gefen et al (2000) and Sami & E. (2016), which generated ten Goodness of Fit measures. The results indicate that the five latent constructs sample is well-fitted for a distribution from population in this research design.

Table 11. Goodness of Fit Measures	
Goodness of Fit of Research Model	Acceptable value
Average path coefficient (APC) = 0.250, P = 0.002	Good if $p \leq 0.05$
Average R-squared (ARS) = 0.237, P = 0.003	Good if $p \leq 0.05$
Average block VIF (AVIF)=1.374	Acceptable if ≤ 5 , ideally ≤ 3.3
Average full collinearity VIF (AFVIF)=1.389	Acceptable if ≤ 5 , ideally ≤ 3.3
Tenenhaus GoF (GoF)=0.420	Small ≥ 0.1 , medium ≥ 0.25 , large ≥ 0.36
Sympson's paradox ratio (SPR)=1.000	Acceptable if ≥ 0.7 , ideally = 1
R-squared contribution ratio (RSCR) = 1.000	Acceptable if ≥ 0.9 , ideally = 1

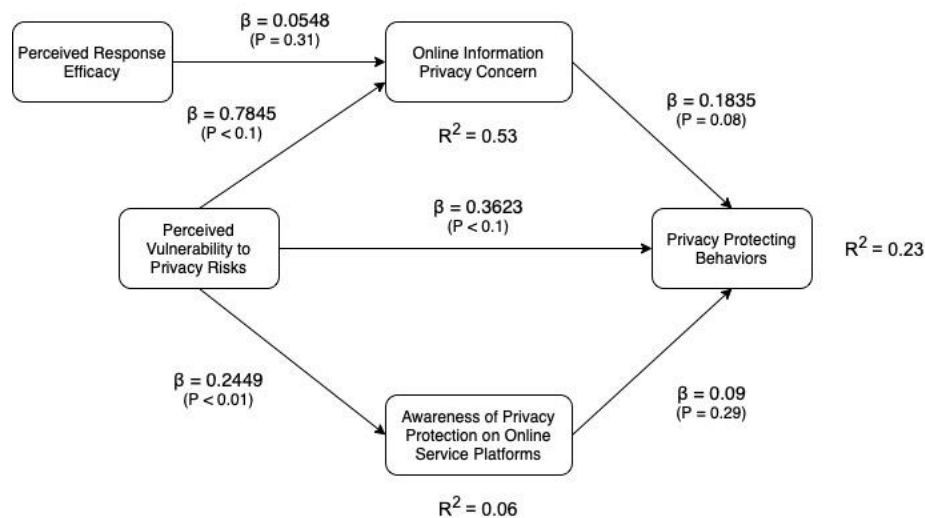
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Statistical suppression ratio (SSR) = 1.000	Acceptable if ≥ 0.7
Nonlinear bivariate causality direction ratio (NLBCDR) = 1.000	Acceptable if ≥ 0.7

Discussion

The purpose of this research was to develop and test a model for examining the link between people's privacy concern and their perceptions to privacy-preserving features. This focus arose from the realization that privacy management is more than just a question of individual actions; it is also an essential aspect of institutional structure, as evidenced by industry and organizational standards (Schwaig et al, 2013; Gruzd & Hernandez-garcia, 2018). In the context of mainland China online services, the researcher conducted an empirical test of the theoretical model similar to Schwaig et al (2013) (see Figure 5).

Figure 5 Structural Modeling Results



In this study, structural equation modeling (Figure 3) is used to characterize, estimate, and evaluate a network of interactions between five important variables. The significant threshold chosen for the testing hypothesis is 0.05 for the hypotheses testing findings. Table 8 shows the summary findings for structural equation modeling.

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Table 12. Structural Equation Modeling Results		
Hypothesis	Test result	Conclusion
Hypothesis 1: Privacy concerns in internet services have a positive effect on privacy protection practices.	(beta = 0.16, p = 0.05)	Supported
Hypothesis 2: Increased knowledge of online services' Privacy-Preserving Features has a positive impact on mainland China online services' privacy protection practices.	(beta = 0.27, p = 0.21)	Not supported
Hypothesis 3: Privacy-protecting practices are positively influenced by perceived vulnerability to privacy concerns.	(beta = 0.32, p < 0.01)	Supported
Hypothesis 4: The perception of privacy risks raises the level of knowledge of privacy-preserving features in mainland China online services.	(beta = 0.27, p < 0.01)	Supported
Hypothesis 5: Information privacy concerns are positively influenced by perceived sensitivity to privacy issues	(beta = 0.64, p < 0.01)	Supported
Hypothesis 6: Information privacy concerns are positively influenced by perceived response efficacy.	(beta = 0.05, p = 0.48)	Not supported

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According to Hypothesis 1, there is a link between information privacy concerns and privacy protection activity. This hypothesis was confirmed, with information privacy concerns influencing privacy-protecting behavior in a positive way ($\beta = 0.16$, $p = 0.05$). This outcome is unsurprising. However, based on the results of the interviews in the questionnaire and the results of question 3 in the questionnaire, about 75% of participants would choose the "ease of use of online services" over the assurance and protection of the user's "privacy". They claim that if they start using privacy-preserving features, the usability, and the actual function of online services (Meituan, TikTok, Baidu, and Taobao) will be limited. This statement is supported by Sami & E. (2016) research, in which they found that information privacy concerns can positively impact users' privacy-preserving behavior in the Saudi Arabia context.

Hypothesis 2 posits a link between online service users' knowledge of privacy-preserving features and their privacy-protecting behavior. Nevertheless, the amount of knowledge of privacy-preserving elements in Online Services has no effect on privacy-protecting actions ($\beta = 0.27$, $p = 0.21$), contradicting Hypothesis 2. Unexpectedly, the privacy-preserving features offered by the manufacturers did not help users start using these good privacy habits or improve their previous ones. 60% of the interviewees said that they "didn't know how to use the features," "some of the features were not very easy to use," and "were worried about whether they would work," and that "manufacturers may come to mobile phone users' data through this means." This contradicts Schwaig et al. (2013) that the privacy features offered by manufacturers will help to make significant progress "in protecting users' privacy". This suggests two mismatches between the consumer mentality of privacy protection and the understanding of privacy in the mainland China and the consumer mentality as understood by manufacturers.

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Hypothesis 3 proposes that a person's perception of privacy dangers has a beneficial impact on privacy-protecting behavior. The adaptation of privacy-protecting actions is strongly correlated with perceived sensitivity to privacy hazards ($\beta = 0.32, p < 0.01$), confirming Hypothesis 3. Interview evidence backs up assertions made in Miltgen's (2009) study and another study by Xu et al (2011). Interviews show that consumers themselves have a great willingness to go about improving the privacy protection of their online services after experiencing the privacy breaches. Respondents claimed that they were "afraid of privacy leakage on online services when they see people in the news who have experienced this," so they "try to learn skills on how to use privacy-preserving features". Consequently, it can be assured that consumers' privacy habits, at least for the research sample, will be greatly affected if they find themselves exposed to a potential "privacy breach."

Hypothesis 4 posits that increased awareness of privacy-preserving features in Online Services is a result of increased perceived susceptibility to privacy concerns. The amount of knowledge of privacy-preserving features in Online Services is strongly correlated with the perceived sensitivity to privacy issues. ($\beta = 0.27, p < 0.01$). As a result, Hypothesis 4 is confirmed. This may suggest that as consumers are exposed to more risks of privacy breaches, they will find that the only reliable solution to ensure that this privacy is not compromised is 'privacy protection features' this is now a controversial answer in the interviews. For instance, one interviewee commented that "since I saw that other people's transactions in internet banking had been compromised, I knew I should start using some of the privacy features that come with the manufacturer to protect myself."

Meanwhile, some respondents said, "I would not use these features myself, even though they might be useful for protecting my privacy." What can be seen is that consumers in mainland

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China have mixed views on the privacy protection features offered by manufacturers today. This may reflect an underlying mistrust of vendors.

Hypothesis 5 suggests that information privacy concerns are favorably influenced by perceived sensitivity to privacy dangers. The findings confirm Hypothesis 5 by showing that perceived sensitivity to privacy hazards positively leads to information privacy concerns ($\beta = 0.64, p < 0.01$). This shows a direct correlation between the participants' privacy concerns and their assessed risk of privacy leakage.

Hypothesis 6 proposes that perceived response efficacy influences information privacy concerns in a beneficial way. Hypothesis 6 was determined to be unsupported ($\beta = 0.05, p = 0.48$). This might indicate that customers haven't yet figured out the best approach to secure their personal information and, as a result, aren't sure how to cope with privacy concerns.

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Conclusion

The focus of the research was to look at the link between customers' knowledge of privacy-preserving Online Services and the factors that influence privacy-protecting actions in mainland China. This was accomplished through the development of a five-construct research model. The data was collected from 71 people who were surveyed for the study. WarpPLS 8.0 was used to evaluate the research model. This study adds to a growing body of work studying the impact of information practices and privacy by using a mixed-method approach of self-reported surveys and interviews. The study confirmed and expanded on previous research, providing a larger framework for comprehending the nomological network of components that explain privacy issues in mainland China's internet services.

The new findings show that in mainland China, perceived sensitivity to privacy threats has a beneficial impact on privacy-protecting activities. The study found no link between a higher degree of knowledge of Online Services' Privacy-Preserving Features and privacy-protecting actions in Online Services in China. When customers believe their privacy is in jeopardy, they frequently don't know how to handle the situation or are apprehensive that privacy protection measures may likewise jeopardize their private. As a result, there appears to be a discrepancy in the data trend, which might be due to confusing other factors such as internet service provider privacy protection features or policies, as well as government regulatory limits in mainland China. This study also confirms a number of conclusions from current volumes of literature. In mainland China, for example, information privacy concerns have a favorable impact on privacy protection practices in Online Services. Furthermore, mainland Chinese consumers' perceptions of privacy threats have a favorable impact on their privacy-protecting activities.

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These findings are supported by Georgia Institute of Technology (2015), Kim & Benbasat (2006), Phelps et al (2000), and Sami & E. (2016).

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Limitations and Suggestions for Further Research

Despite the fact that the study established and verified a credible model, it has significant flaws that must be addressed. The first and most important drawback is that the characteristics of information practice, as well as the individual variations studied, are representative rather than exhaustive. The second constraint is related to the sample type and simulation administration scenario. During the distribution of the questionnaires, the researcher questioned a small sample of Guangzhou residents. The setting in which the research was conducted limited the generalizability of the findings. In truth, this sort of data request is unique, and the same people would most certainly behave differently in other situations. Furthermore, convenience samples may not always provide the right environment for obtaining behavior patterns that are representative of the entire community. Furthermore, because this study includes a survey, the self-reporting findings might be made up or "chosen at random" by the participants, lowering the accuracy of the total research results.

As a result, further study is needed to demonstrate that the validity of the research's findings can be generalized by concentrating on a larger representative sample. Finally, work expanding the findings to company sectors other than general internet services industries, as well as a more in-depth mainland China market, would be extremely beneficial. Further longitudinal studies are also suggested to get a fuller picture of the phenomenon and to improve the data's credibility because the privacy construct and privacy-preserving features offered by companies are constantly updated and improved, and it "varies" from time to time, as several interviewees point out. Furthermore, the survey and case studies only provide subjective data on mainland Chinese customers' privacy concerns and opinions of privacy-preserving features. There was no objective assessment of these factors to ensure the scientific validity of the findings. Because of

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the researcher's personal prejudice and misunderstanding, the data might be erroneous. As a result, future researchers can use objective tools to assess participants' privacy beliefs in order to assure the accuracy of their findings.

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Implications

This study has implications for the field's knowledge base. First, this study revealed that when consumers think their privacy has been infringed, they respond poorly to internet service firms' information practices, and that these negative reactions have real-world consequences for businesses. As a result, firms that rely strategic aims on personal data must retain customer privacy viewpoints. Additionally, rules are used to highlight the significance of maintaining consumer personal information privacy to both the business and the workers.

Online services companies should make every effort to effectively educate customers about their information practices and utilize technical interfaces to collect personal data, as long as processes to ensure the data's integrity are in place. Because of the existing finding that people do not know enough about privacy protection features or do not trust the effectiveness of these features, companies can only help consumers better protect their privacy by continually ensuring that their security is trustworthy and by providing them with more effective or actually certified privacy protection features. Companies should also limit the transmission of personal data outside of the company without the approval of its consumers. Most importantly, companies should be aware of their consumers' "need-to-know" about how their personal data is used.

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Appendix A Online Services Privacy Awareness Survey

(Developed by Georgia Institute of Technology)

Purpose of the Study 研究目的

The purpose of the study is to explore the relationships between consumer perceptions towards the effectiveness of privacy-preserving features and to develop a general solution to cope with current privacy concerns. By analyzing and discussing the data, the study will highlight how the user's privacy concerns will be changed or diminished by the effectiveness of the privacy-preserving features. Building On the data, the study will also seek a combined solution to cope with the current privacy concerns in the consumer market of online services.

本研究的目的是探索消费者对隐私保护功能的有效性的看法之间的关系，并制定一个通用的解决方案来应对当前的隐私问题。通过分析和讨论数据，本研究将强调用户的隐私问题将如何被隐私保护功能的有效性所改变或削弱。在这些数据的基础上，本研究还将寻求一个综合解决方案，以应对当前在线服务消费市场上的隐私问题。

Research Project Website 研究项目网站

<https://craigcorp.notion.site/>

Under Age of 18 未满18周岁的研究参与者

Please click on any of the "Parental Consent Form" below, download it, fill it out, and submit it to the investigator before the experiment begins.

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请复制并在浏览器中打开以下链接，下载“参加研究家长同意书”，并在实验开始前提交给研究者。

<https://tinyurl.com/3kxkaj6a>

18 Years of Age or Older 18周岁以上的研究参与者

Please click on any of the "Parental Consent Form" below, download it, fill it out, and submit it to the investigator before the experiment begins.

请复制并在浏览器中打开以下链接，下载“参加研究同意书”，并在实验开始前提交给研究者。

<https://tinyurl.com/3kxkaj6a> [段落说明]

===分页===

I. Perceptions About The Internet 互联网感知[段落说明]

In general, how concerned are you about security on the Internet? (e.g. people reading your email, finding out what websites you visit, etc.)

一般来说，你对互联网的安全问题有多关注？（例如，人们阅读你的电子邮件，发现你访问的网站，等等。）[单选题](Keep in mind that "security" can

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mean privacy, confidentiality, and/or proof of identity for you or for someone else.

请记住, "安全 "可以意味着隐私、保密性和/或你或其他人的身份证明。)

Not at all concerned

A little concerned

Somewhat concerned

Very concerned

I know I should be concerned, but I'm not

How concerned are you about security in relation to making purchases or banking over the Internet?

你对在互联网上购物或办理银行业务的安全问题有多关注? [单选题](Keep in mind that "security" can mean privacy, confidentiality, and/or proof of identity for you or for someone else.

请记住, "安全 "可以意味着隐私、保密性和/或你或其他人的身份证明。)

Not at all concerned

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A little concerned

Somewhat concerned

Very concerned

I know I should be concerned, but I'm not

In general, which is more important to you: CONVENIENCE or PRIVACY?

一般来说, 哪个对你更重要? 便利性还是隐私性? [单选题]

Convenience 便利性

Privacy 隐私性

Rate your level of concern over the following Internet issues?

给你对以下互联网问题的关注程度打分? [矩阵量表题]

1~7

It's too hard to use 使用起来有一定的困难

It's too hard to find what I want 要找到我想要的东西太难了

Someone could be monitoring what I do online 有人可能在监视我在网上的行为

It's too cluttered 互联网的环境太杂乱了

It's too slow 网速不理想

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My personal information will be stolen 我的个人信息可能会被窃取

Someone will misuse the personal information I give them

有人会滥用我提供给他们个人信息

Information I share or post on online service platforms will be censored

我在在线服务平台上分享或者发布的信息会被审查

===分页===

II. Providing Personal Information Over the Internet 在互联网上提供个人信息

[段落说明]

Have you been asked to provide personal information at websites you visit?

你在访问的网站上是否被要求提供个人信息? [单选题]

Yes 是

No 否

I don't remember if this is the case 我不记得是否有这个情况

Given the above descriptions of disclosure and assurance, please indicate the condition under which you would disclose the following

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information to a website operated by A COMPANY YOU'RE FAMILIAR WITH?

鉴于上述关于披露和保证的描述，请指出在什么情况下你会向一个由你熟悉的公司运营的网站披露以下信息？[矩阵量表题](e.g. Tencent Services (WeChat, QQ), Bytedance Services (Douyin, Toutiao), Baidu, Meituan, JD.com, Alipay, Bilibili, AutoNavi

例如，腾讯服务（微信、QQ）、字节跳动服务（抖音、今日头条）、百度、美团、京东、支付宝、哔哩哔哩、高德等。

Reference for Scales 评级参考:

1 - No Privacy Practice Disclosure or Independent Assurance 没有隐私保护披露或独立保证

2 - Disclosure WITHOUT Assurance 无保证的披露

3 - Disclosure WITH Assurance 有保证的披露

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4 - Disclosure That Information Will Not Be Shared With Others 披露信息不会与他人共享

5 - Would NEVER Provide This Information Online 永远不会在网上提供这些信息)

1~5

Name 姓名

Home mailing address 家庭住址

Business mailing address 工作地址

Email address 电子邮箱地址

Date of birth 生日

Family information 家庭信息

Credit card/banking/stock portfolio information 信用卡/银行/股票投资信息

Medical information 医疗信息

Salary/resume information 薪资/简历信息

Given the above descriptions of disclosure and assurance, please indicate the condition under which you would disclose the following information to a website operated by A COMPANY YOU'VE NEVER HEARD OF BEFORE?

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鉴于上述关于披露和保证的描述，请指出在什么情况下你会向一个你从未听说过的公司经营的网站披露以下信息？[矩阵量表题](Reference for Scales 评级参考：

1 - No Privacy Practice Disclosure or Independent Assurance 没有隐私保护披露或独立保证

2 - Disclosure WITHOUT Assurance 无保证的披露

3 - Disclosure WITH Assurance 有保证的披露

4 - Disclosure That Information Will Not Be Shared With Others 披露信息不会与他人共享

5 - Would NEVER Provide This Information Online 永远不会在网上提供这些信息)

1~5

Name 姓名

Home mailing address 家庭住址

Business mailing address 工作地址

Email address 电子邮箱地址

Date of birth 生日

Family information 家庭信息

Credit card/banking/stock portfolio information 信用卡/银行/股票投资信息

Medical information 医疗信息

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Salary/resume information 薪资/简历信息

Have you ever had your personal information be leaked (either online or offline)?

您是否有过个人信息被泄露的经历（无论是线上还是线下）？[单选题]

Yes 是

No 否

I don't know if this situation happened before 我不知道这种情况以前是否发生过

===分页===

III. Perceptions About Internet Privacy 互联网隐私感知 Privacy is how businesses use the information they collect from you (e.g. for their own purposes or make it available to third parties). 隐私是指企业如何使用他们从你那里收集的信息（例如，为自己的目的或将其提供给第三方）。 Personal information is any information that is attributed to you individually (name, address, email address, names of family members, social security or credit card number, financial information, medical history, etc.) 个人信息是指任何归属于你个人的信息（姓名、地址、电子邮件地址、家庭成员的姓名、社会保险或信用卡号码、财务信息、病史等）。[段落说明]

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Would privacy-preserving features be a factor at all in your choice whether or not to do business with an Internet-based company?

在你选择是否与一家在线服务提供商的服务时，隐私保护功能是否是一个因素？

[量表题]

1~7

Do you think metrics to measure "how secure" a specific site is rated be of any help or value to you?

你认为衡量一个特定网站 "有多安全 "的指标对你有任何帮助或价值吗？ [单选题]

Yes 是

No 否

In your opinion, what information ought to be collected for each online service providers you request?

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在你看来，对于你要求的每个在线服务提供商，应该收集哪些信息？[多选题](Please check all that apply.

请勾选所有适用的选项。)

Your WeChat ID 你的微信ID

Your phone number 你的手机号码

Your email address 你的电子邮箱地址

Time of the request 网络请求时间

Your machine address 你所使用设备的硬件地址

The requested page 你所请求网页

An identifier that persists across visits to that site 一个在访问该网站时持续存在的标识符

The type of browser you are using 你所使用的浏览器类型

Your machine's operating system 你的机器的操作系统

Your geographical location 你的地理位置

Your machine's screen size 你所使用的设备的屏幕尺寸

None of these 以上都不是

I don't know 我不了解

Please complete the following statement.

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请完成以下陈述。

I would give demographic information to a Web site ...

我愿意向一个网站提供人口统计信息.....[多选题](Please check all that apply.

请勾选所有适用的选项。)

if a statement was provided regarding what information was being
collected

是否提供了关于正在收集的信息的声明

if a statement was provided regarding how the information was going to
be used

是否提供了关于如何使用信息的声明

in exchange for access to the pages on the Website

以换取对网站网页的访问权

in exchange for a small discount at the Website's store or on their products

以换取该网站的商店或其产品的折扣

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in exchange for some value-added service

以换取一些增值服务

if the data would only be used in aggregate form (i.e., not on an individual basis)

如果这些数据只以综合形式使用（即不以个人为基础）

I would not give the site any demographic information

我不会向该网站提供任何人口统计信息

Under other terms and conditions

根据其他的条款和条件

Please indicate your agreement/disagreement with each of the following statements.

请指出你对以下每项陈述的同意/不同意。[矩阵量表题](Reference of Scales:

1 - Strongly Agree 非常同意

2 - Somewhat Agree 比较同意

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3 - Neither Agree nor Disagree 既不同意也不反对

4 - Somewhat Disagree 比较不同意

5 - Strongly Disagree 非常不同意)

1~5

There should be new laws to protect privacy on the Internet.

应该有新的法律来保护互联网上的隐私。

Web sites need information about their users to market their sites to advertisers.

网站需要有关其用户的信息来向广告商推销其网站。

Content providers have the right to resell information about their users to other companies.

内容提供商有权将其用户的信息转卖给其他公司。

A user ought to have complete control over which sites get what demographic information.

用户应该能够完全控制哪些网站获得哪些人口统计信息。

Online service providers to which I subscribe have the right to sell my name and address to companies they feel will interest me.

我订阅的在线服务提供商有权将我的姓名和地址出售给他们认为我感兴趣的公司。

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I value being able to visit sites on the Internet in an anonymous manner.

我很重视能够以匿名的方式访问互联网上的网站。

I ought to be able to communicate over the Internet without people being able to read the content.

我应该能够在互联网上进行交流，而人们无法阅读内容。

I would prefer Internet payment systems that are anonymous to those that are user-identified.

我更喜欢匿名的互联网支付系统，而不是那些可以识别用户身份的系统。

Third-party advertising agencies should be able to compile my usage behavior across different websites for direct marketing purposes.

第三方广告公司应该能够在不同的网站上汇编我的使用行为，以达到直接营销的目的。

There ought to be stricter laws to protect children's privacy than adults' privacy on the internet.

在互联网上，应该有比成年人的隐私更严格的法律来保护儿童的隐私。

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IV: Awareness level of Privacy Policies, Perceived Response Efficacy, and Vulnerability to Privacy Risks 对隐私政策的认识水平, 感知的反应效率, 以及对隐私风险的脆弱性[段落说明]

Please indicate your agreement/disagreement with each of the following statements.

请指出你对以下每项陈述的同意/不同意。[矩阵量表题](Reference of Scales:

1 - Strongly Agree 非常同意

2 - Somewhat Agree 比较同意

3 - Neither Agree nor Disagree 既不同意也不反对

4 - Somewhat Disagree 比较不同意

5 - Strongly Disagree 非常不同意)

1~5

I am concerned about submitting my personal information on social networking sites because of what others might do with it

我担心在社交网站上提交我的个人信息, 因为其他人可能会用它来做什么。

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I am concerned about submitting my personal information on social networking sites because it could be used in a way I did not foresee

我对在社交网站上提交我的个人信息感到担忧，因为它可能被用于我没有预见到的方式。

If I used privacy protection measures in social networking sites, I could probably protect myself from losing my information privacy

如果我在社交网站上使用隐私保护措施，我可能可以保护自己的信息隐私不被丢失
I can protect my information privacy better if I use privacy protection measures on social networking sites

如果我在社交网站上使用隐私保护措施，我可以更好地保护我的信息隐私
Utilizing privacy protection measures in social networking sites works to ensure my information privacy

利用社交网站的隐私保护措施，可确保我的信息隐私
If I utilize privacy protection measures in social networking sites, I am less likely to lose my information privacy

如果我利用社交网站的隐私保护措施，我就不太可能失去我的信息隐私
I ought to be able to communicate over the Internet without people being able to read the content

我应该能够在互联网上进行交流，而人们无法阅读内容

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I read the privacy policies of Online Service Providers before using them.

我在使用在线服务提供者之前，阅读了他们的隐私政策

I understand carefully what is mentioned in the Privacy policies of Online Service Providers

我仔细了解在线服务提供商的隐私政策中提到的内容

I read the updated versions of Online Services Providers' Privacy policies

我会去阅读在线服务提供商的隐私政策的最新版本

===分页===

V. Privacy Perceptions in the Context of Mainland China 中国大陆背景下的隐私感知[段落说明]

Do you have privacy concerns about the online services in mainland China you are currently using?

你对你现在所使用的在线服务是否存在隐私担忧？[单选题](e.g. Tencent Services (WeChat, QQ), Bytedance Services (Douyin, Toutiao), Baidu, Meituan, JD.com, Alipay, Bilibili, AutoNavi

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例如，腾讯服务（微信、QQ）、字节跳动服务（抖音、今日头条）、百度、美团、京东、支付宝、哔哩哔哩、高德等）

Not at all concerned 一点也不关心

A little concerned 不是特别担心

Somewhat concerned 有点担心

Very concerned 十分担心

I know I should be concerned, but I'm not 我知道我应该担心，但我没有

If you have used a service provider that has had a privacy breach, will you stop using that service provider and move to another one that can replace it?

如果你使用过的服务提供商曾经出现了隐私泄漏的事故，你是否会停止使用此服务商的服务，并转向另一个可以替代其服务的服务商。[单选题]

Yes 是

No 否

I don't know how I would react to that 我不知道我对此的反应

Many online service providers in mainland China have become aware of the importance of protecting user privacy in recent years, and

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consequently offer a variety of privacy protection features to their users.

许多在中国大陆的在线服务提供商在最近的几年里开始注意起了保护用户隐私的重要性，并随之为用户提供了多样化的隐私保护功能，你会使用这些隐私保护功能吗？[单选题]

Yes 是

No 否

I don't know how I would react to that 我不知道我对此的反应

What is your opinion of the effectiveness of the privacy protection features offered by online service providers in mainland China?

你对中国大陆的在线服务提供商所提供的隐私保护功能的有效性的看法是？[单选题]

Completely ineffective 完全无效

Partially ineffective 部分无效

Partially effective 部分有效

Completely effective 完全有效

I am not sure about the effectiveness of the privacy protection feature I am using 我不确定我所使用的隐私保护功能的有效性

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Have you ever experienced a privacy breach while using the services of an online service provider in mainland China?

你在使用中国大陆的在线服务提供商的服务是，是否遭遇过隐私泄漏的情况？[单选题]

Yes 是

No 否

I don't remember if I've ever had a similar experience 我不记得我是否有过了类似的遭遇

I'm not sure if what I'm experiencing can be defined as a "privacy breach" 我不清楚我所遭遇的是否可以被定义成“隐私泄漏”

Do you think that the policies proposed by the government authorities in mainland China are effective in protecting the online data privacy of users in mainland China?

你认为中国大陆政府的管理部门所提出的政策是否能够有效地保护中国大陆用户的在线数据隐私？[单选题]

Yes 是

No 否

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I don't have knowledge of the current data security policy of the mainland Chinese government 我不了解现在中国大陆政府的数据安全政策

Are you concerned that online service providers in mainland China are collecting your personal data and sharing it with third-party agencies, organizations, or the government?

你是否担心中国大陆在线服务提供商收集你的个人数据，并将其分享给第三方机构、组织，或者政府部门？[单选题]

Not at all concerned 一点也不关心

A little concerned 不是特别担心

Somewhat concerned 有点担心

Very concerned 十分担心

I know I should be concerned, but I'm not 我知道我应该担心，但我没有

I don't know if it ever happened 我不知道是否发生过

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VI. Demographic Information 个人基本信息[段落说明]

What is your age range?

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你的年龄范围是?[下拉题]

Less than 20 低于20岁

From 21 to 30 从21岁到30岁

From 31 to 40 从31岁到40岁

From 41 to 50 从41岁到50岁

More than 50 大于50岁

你的性别是? [单选题]

Male 男

Female 女

Prefer not to say 倾向于不说出来

What is your level of education?

你的教育水平是? [单选题]

Pre High School 中学预科 (初中)

High School 高中

College 大学本科

Post Graduate 硕士研究生

What is your socio-professional category?

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你的社会职业类别是? [下拉题](Optional 选填)

Farmers 农户

Artisans, shopkeepers, CEOs 工匠、店主、首席执行官

Executives and intellectual professionals 行政人员和知识分子

Intermediate professions 中级职业

Employees 雇员

Workers 工人

Retired 已退休

Unemployed 失业人员

Students 学生

What is your most commonly used operating system?

您最常用的操作系统是? [单选题]

Apple iOS & iPadOS

Apple macOS

安卓 (中国大陆) Android for Mainland China

安卓 (中国大陆外) Android Original

华为鸿蒙 (Huawei HarmonyOS)

微软 Windows Phone/Windows Mobile

What is your email address?

你的电子邮箱地址是? [单行文本题](Optional 选填)

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Appendix B Interview Coding

Table 8. Themes Identified in the interview transcription data

A. Privacy breach
B. Privacy-preserving features
C. Personal information
D. Distrust

Table 9. Categories Identified in the interview transcription data

<ol style="list-style-type: none"> Disclosed without authority Risk to individuals' safety 	<ol style="list-style-type: none"> Security Protocol Technology Emotions
<ol style="list-style-type: none"> Information type Data Usage 	<ol style="list-style-type: none"> Government and company censorship Ineffectiveness

Table 10. Codes Identified in the interview transcription data

<ol style="list-style-type: none"> Stealing the privacy of its users Experience Danger Familiar Concerned Shock Surprised Worried “Data explosion” Challenging Overshadowed Cyber security risks 	<ol style="list-style-type: none"> Psychological comfort Usage of Artificial Intelligence and Machine Learning “Exposure Notification” feature Counterintuitive Inconvenient Straightforward Fronts Terms and conditions Informative Failed to enter Chinese market Privacy notices Practical Technical feasibility Developers’ considerations “Still need more time”
<ol style="list-style-type: none"> Personal ID WeChat Info Phone Number Informed consent 	<ol style="list-style-type: none"> Potential usage of collected user data Legal system Consumer Privacy Bill of Rights

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5. Role of government and vendor 6. Fake information 7. Misinformation 8. Social media platform 9. Consumer financial protection 10. Payments system	4. The Cambridge Analytica 5. Privacy legislation 6. Current law is falling behind 7. Third-party 8. Regulate the behaviour of companies 9. Foreign companies 10. Manipulation of public opinion
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Appendix C Interview Transcripts

Subject 1:

1. 你所遇到过的具体的隐私泄漏事件有哪些？可以分享你印象最深或者是造成很大的损失的一个事件哦？

What are some of the specific privacy breaches you have experienced? Can you share an incident that you remember most or that caused a lot of damage?

我不确定是否这算是一个隐私泄漏事件。但是我觉得字节跳动的算法来给我推送的内容，比如在我使用抖音的时候，就是我平时喜欢的一些内容。所以我觉得这是一个隐私的泄漏，尽管我不确定这些信息是通过哪种方式泄漏的。

I'm not sure if this is considered a privacy breach. But I think the algorithm that ByteDance uses to push content to me, for example, when I'm using Tiktok (China), is some of the content that I usually like. So I think it's a privacy breach, although I'm not sure in which way that information was leaked.

2. 你对于现在中国大陆在线服务提供商所提供的隐私保护功能的使用体验如何？

How is your experience with the privacy features offered by online service providers in mainland China today?

我有使用过最新退出的微信的自查隐私的功能，比如说一些“朋友权限”，“个人资讯与权限”，“个人资讯收集清单”，以及“第三方资讯共用清单”。这些功能都是提供给我们用户的自查。

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I have used the newly retired WeChat's self-checking privacy features, such as some "friend permissions", "personal information and permissions", "personal information collection list", and "Third party information sharing list". All of these features are available to our users for self-checking.

3. 经过你的使用，你觉得这些隐私保护功能是否有用呢？可以分享一下具体的理由哦？

Do you find these privacy features useful after your use? Can you share your specific reasons?

应该还是有一些用处的，但是由于这个功能是最新退出的，实际的效果应该至少要很久才能体现的出来。

It should still be of some use, but as this feature is the latest to be withdrawn, it should be at least a long time before the actual effect is felt.

Subject 2:

1. 你所遇到过的具体的隐私泄漏事件有哪些？可以分享你印象最深或者是造成很大的损失的一个事件哦？

What are some of the specific privacy breaches you have experienced? Can you share an incident that you remember most or that caused a lot of damage?

我个人经历过一次银行卡的盗刷事件，那次事件让我损失了将近一万多元，后来我发现是因为我保存在云相册中的银行卡信息被盗用了。从此，我就没有再使用过那个公司的业务了，因为这真的让人很不放心。

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I personally experienced a bank card theft incident that cost me almost \$10,000 or so, and I later found out that it was because my bank card information saved in my cloud album had been stolen. Since then, I have not used that company's business as it was really unsettling.

2. 你对于现在中国大陆在线服务提供商所提供的隐私保护功能的使用体验如何？

How is your experience with the privacy features offered by online service providers in mainland China today?

对于那些公司的隐私措施，说实话我自己是没有手动开启过的，可能像微信或者淘宝这些公司，有默认帮我们开启吧。但是其他的公司我就知道了。

For those companies that have privacy measures, I honestly don't have them turned on manually myself. But I don't know about other companies.

3. 经过你的使用，你觉得这些隐私保护功能是否有用呢？可以分享一下具体的理由哦？

Do you find these privacy features useful after your use? Can you share your specific reasons?

应该还是有用的吧，至少给用户一些心理的安慰。

It should still be useful, or at least give the user some psychological comfort.

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Subject 3:

1. 你所遇到过的具体的隐私泄漏事件有哪些？可以分享你印象最深或者是造成很大的损失的一个事件哦？

What are some of the specific privacy breaches you have experienced? Can you share an incident that you remember most or that caused a lot of damage?

我的照片在未经授权的情况下，被平台自动备份了。不过可能我觉得是因为我没有注意到平台是默认开启了“相册自动备份”这个功能，但是这还是让我很担忧以后会不会继续发生这些事件，因为我们现在是依赖在这些平台所提供的服务上的。

My photos were automatically backed up by the platform without my authorization. However, I think it was because I didn't notice that the "automatic album backup" feature was turned on by default, but it still makes me worry if these incidents will continue to happen in the future, as we are now dependent on the services provided by these platforms.

1. 你对于现在中国大陆在线服务提供商所提供的隐私保护功能的使用体验如何？

How is your experience with the privacy features offered by online service providers in mainland China today?

我认为隐私保护功能的指引不够直观，比如说我需要很多的步骤才能够进入到管理隐私的页面，而且里面的文字通常来说都比较不直接，我并不明白那些功能在保护我的哪些方面。

I found the guidance on the privacy features not intuitive, for example I had to go through a lot of steps to get to the privacy management page and the text was generally not straightforward enough for me to understand what the features were protecting me from.

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一些公司的目的可能是让用户不使用这些功能吧。

2. 经过你的使用，你觉得这些隐私保护功能是否有用呢？可以分享一下具体的理由哦？

Do you find these privacy features useful after your use? Can you share your specific reasons?

至少对于我来说，我觉得是没有用的。平台既是服务的提供者，又是隐私保护功能的提供者，这让我感到一些担忧，因为分享用户的数据隐私，或者是将这些数据运用于自己的服务中，使公司的利益最大化，我想这是一个产品经理的想法。所以隐私保护功能只是一个幌子，实际上发生的事情还是公司在盗取用户的隐私，只是通过另外一种方式。

For me at least, I don't think it works. The fact that the platform is both the provider of the service and the privacy protection feature gives me some concern, because sharing the privacy of users' data, or using that data in their own service to maximize the company's profit, I think is the idea of a product manager. So the privacy protection feature is just a front and what is actually happening is still the company stealing the privacy of its users, just through a different way.

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Subject 4:

1. 你所遇到过的具体的隐私泄漏事件有哪些？可以分享你印象最深或者是造成很大的损失的一个事件哦？

What are some of the specific privacy breaches you have experienced? Can you share an incident that you remember most or that caused a lot of damage?

我并不记得某一次具体的情况了，但是我认为我自己身边的朋友其实都经历过隐私泄漏这些情况。比如说自己的照片出现在了网上，房产中介知道你是否想要去租房或者卖房，一通来历不明的电话可以直接叫出你的名字，这些都是一些隐私泄漏的例子吧。

I don't remember a specific case, but I think I've been around friends who have experienced privacy breaches. For example, if your photo appears on the internet, if a real estate agent knows if you want to rent or sell a house, if a phone call from an unknown source calls you by name, these are all examples of privacy breaches.

我个人也都经历过以上的这些事件。但是要说到具体的损失，我并没有太多的感受。

I have personally experienced all of these events. But when it comes to specific losses, I don't have much to feel.

2. 你对于现在中国大陆在线服务提供商所提供的隐私保护功能的使用体验如何？

How is your experience with the privacy features offered by online service providers in mainland China today?

使用的体验算是中等吧。自己平时对这些还是比较关注的，毕竟现在是一个互联网的时代，我们的信息都遭受到不同程度的收集。比如说在我使用的一些服务中，我会刻意地去留意这些服务是否有提供给用户我们一些必要的隐私功能，或者是隐私的条款，声明出我在用这个服务的过程中，会被收集哪些个人信息。

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The experience of using it is moderate, I guess. I am usually quite concerned about these things, after all, this is the age of the internet and our information is collected to varying degrees. For example, in some of the services I use, I deliberately pay attention to whether they provide users with some necessary privacy features or privacy terms and conditions, stating what personal information will be collected in the process of using the service.

3. 经过你的使用，你觉得这些隐私保护功能是否有用呢？可以分享一下具体的理由哦？

Do you find these privacy features useful after your use? Can you share your specific reasons?

部分公司提供的隐私保护功能，或者我觉得可以说是隐私保护体系吧，对于我个人而言是很有参考的价值的。

Some of the companies offer privacy features, or I guess you could say privacy systems, that are very informative for me personally.

我认为苹果在这一方面做的是很好的，比如在他们的 App Store 的每一个应用程序的详情页面，我下拉就会出现一个对于这个应用程序收集个人信息的种类的描述。我认为这是很好的，因为我可以通过这个来判断是否要下载这个应用程序。

I think Apple does a good job of this, for example, on the details page of each app in their App Store, I scroll down and there is a description of the type of personal information that the app collects. I think this is good because I can use this to determine whether I want to download the app or not.

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但是我觉得国内的一些公司在这方面是有待完善的，一些功能的有效性还有待实践的证明。另外，对于保护用户隐私这一块来说，我觉得光靠公司一方面来保护只会有略微的作用，政府部门也需要制定一些法规条例来监管公司的行为。

However, I think some companies in China have yet to improve this aspect, and the effectiveness of some features has yet to be proven in practice. In addition, for the protection of user privacy, I think it is only marginally useful to rely on companies alone to protect it, and the government needs to enact some regulations to regulate the behavior of companies.

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Subject 5:

1. 你所遇到过的具体的隐私泄漏事件有哪些？可以分享你印象最深或者是造成很大的损失的一个事件哦？

What are some of the specific privacy breaches you have experienced? Can you share an incident that you remember most or that caused a lot of damage?

我不确定我是否经历过类似的事件。但我看到新闻上有许多类似的数据丢失事件，比如说 LinkedIn 在 2021 年的时候的用户数据泄漏事件，我认为这会对许多使用他们服务的用户造成很大的影响。还有雅虎公司在 2017 年的数据泄漏事件。

I'm not sure I've ever experienced a similar incident. But I have seen many similar data loss incidents in the news, such as LinkedIn's user data breach back in 2021, which I think will have a big impact on many users of their services. There was also the Yahoo Inc. data breach in 2017.

2. 你对于现在中国大陆在线服务提供商所提供的隐私保护功能的使用体验如何？

How is your experience with the privacy features offered by online service providers in mainland China today?

我觉得总体上是很好的，现在由于政府的监管，许多的厂商都在今年底新增了隐私保护功能以及收集信息列表这样的完整体系。但是由于一些政府的限制，许多国外厂商研发的隐私保护软件无法进入中国市场，希望以后在这个方面可以进行一些改善。

I think it is generally good that many vendors are now adding privacy protection features and a complete system of collecting information lists at the end of this year due to government regulation. However, due to some government restrictions, many privacy protection software developed by foreign vendors cannot enter the Chinese market, so I hope that some improvements can be made in this area in the future.

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3. 经过你的使用，你觉得这些隐私保护功能是否有用呢？可以分享一下具体的理由哦？

Do you find these privacy features useful after your use? Can you share your specific reasons?

在使用“信息收集清单”的时候，我可以清楚的看到在我使用这个软件的时候，我有哪些信息会被收集。还有我不知道这是否包括在隐私保护功能中，淘宝对于消费者的隐私保护是否算哈。我记得淘宝在用户对于商品的评价处，有一个“是否公开用户信息”的选项，这对我有很大的帮助。

When I use the "information collection sheet", I can clearly see what information is being collected when I use the app. I also wonder if this is included in the privacy protection feature and if Taobao's privacy protection for consumers counts. I remember that Taobao has an option for "whether to disclose user information" in the user reviews of products, which is very helpful to me.

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Subject 6:

1. 你所遇到过的具体的隐私泄漏事件有哪些？可以分享你印象最深或者是造成很大的损失的一个事件哦？

What are some of the specific privacy breaches you have experienced? Can you share an incident that you remember most or that caused a lot of damage?

我没有经过一些我有印象的隐私泄漏事件，但可能我经历过只是我不知道罢了。

I haven't gone through some privacy breaches that I can remember, but maybe I have experienced them and I just don't know it.

2. 你对于现在中国大陆在线服务提供商所提供的隐私保护功能的使用体验如何？

How is your experience with the privacy features offered by online service providers in mainland China today?

总体来说，我对于美团和微信的隐私保护功能是非常的不错的。而且我觉得这里我要重点的说一下国外的社交媒体的一些隐私保护功能，比如 Facebook 和 Twitter 的隐私保护功能。

Overall, I am very pleased with the privacy protection features of Meituan and WeChat. And I think here I would like to highlight some of the privacy protection features of foreign social media, such as those of Facebook and Twitter.

3. 经过你的使用，你觉得这些隐私保护功能是否有用呢？可以分享一下具体的理由哦？

Do you find these privacy features useful after your use? Can you share your specific reasons?

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应该还是有些用处的，至少在我看来，但是说实话，这个东西有没有用我是看不出来的，作为用户，几乎所有的事情可能都是被这些在线服务的提供商所掩盖的。

There should still be some use, at least in my opinion, but to be honest, I can't tell if this stuff is useful or not, and as a user, almost everything is probably overshadowed by the providers of these online services.

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Subject 7:

1. 你所遇到过的具体的隐私泄漏事件有哪些？可以分享你印象最深或者是造成很大的损失的一个事件哦？

What are some of the specific privacy breaches you have experienced? Can you share an incident that you remember most or that caused a lot of damage?

我想的是，我的用户数据理论上哈，是已经泄漏了很多次了，比如说像众所周知的滴滴公司，滴滴事件就是一个典型例子。滴滴被罚的真正原因其实我觉得大家都已经知道了，是因为它企图在美国上市——虽然可以增加其市值，但也可能会泄露中国用户的私人数据——让美国劫持中国民众的隐私信息，这很危险。在美国，推特、脸书平台是各种假消息泛滥的重灾区。2020 年大选的时候，民主党和共和党均试图制造针对对方的假消息。特朗普不断扬言将会创造自己的社交媒体平台，尽管尚未成功。随着美国政治斗争和政党极化的加剧，未来美国的互联网企业和社交媒体平台很可能也会分裂成为两大阵营。互联网不仅无法消除分歧达成共识，相反可能会加剧美国社会的撕裂，破坏美国的民主共识。

What I'm thinking is that my user data has theoretically, been leaked many times, for example by companies like the well-known DiDi, of which the Didi incident is a prime example. The real reason why DiDi was fined is actually, I think we all already know, because it attempted to go public in the US - which would have increased its market capitalization but could also have leaked private data of Chinese users - allowing the US to hijack the private information of the Chinese public, which is very dangerous. In the US, the Twitter and Facebook platforms are the worst hit by the proliferation of fake news of all kinds, and in the 2020 election, both Democrats and Republicans are trying to create fake news against each other. Trump has constantly threatened to create his own social media platform, although he has not yet succeeded. As the

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political struggle and party polarization in the US intensifies, it is likely that the future of US internet businesses and social media platforms will also split into two camps. Instead of bridging differences to reach consensus, the internet may instead exacerbate the tear in American society and undermine the democratic consensus in the US.

2. 你对于现在中国大陆在线服务提供商所提供的隐私保护功能的使用体验如何？

How is your experience with the privacy features offered by online service providers in mainland China today?

还是不错的，至少在政府的监管下，国内的绝大多数的科技公司的都是在最近的一段时间里，对用户的隐私保护做了很多的重视的。

It's not bad, at least under government regulation, and the vast majority of tech companies in China have been paying a lot of attention to user privacy protection in recent times.

我觉得这个还是要回到一个中美两国的大型科技公司的发展之间的关系，中美两国的互联网巨头，都掌控着大量的用户数据，这可能导致舆论被操控或造成重大网络安全风险。

I think this goes back to the relationship between the development of large technology companies in China and the US, where both internet giants control a large amount of user data, which could lead to manipulation of public opinion or create significant cyber security risks.

3. 经过你的使用，你觉得这些隐私保护功能是否有用呢？可以分享一下具体的理由哦？

Do you find these privacy features useful after your use? Can you share your specific reasons?

我觉得在目前的这个阶段，还不能说这些功能是否是有效的，因为毕竟相对于美国的科技产业来说，中国的科技产业的发展其实还是相对落后，而隐私保护这个功能的设计是在相

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对于比较成熟的体系中的应用程序或者体系中才会被开发者考虑到的，同时也需要考虑到一些技术的可行性，所以，中国的隐私保护功能，还需要一段的时间才能揭晓。

I don't think it's possible to say whether these features are effective at this stage because, after all, the development of China's technology industry is actually still relatively backward compared to that of the US, and the privacy protection feature is designed to be considered by developers only in applications or systems that are relatively mature and also need to take into account some technical feasibility, so it will take some time before the privacy protection feature in China is revealed.

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Subject 8:

1. 你所遇到过的具体的隐私泄漏事件有哪些？可以分享你印象最深或者是造成很大的损失的一个事件哦？

What are some of the specific privacy breaches you have experienced? Can you share an incident that you remember most or that caused a lot of damage?

Facebook 的隐私泄漏事件吧，我认为我的一些账户信息应该也是被泄露出去了。其他的话应该还有一些我所使用的国内的服务公司吧，因为其实说实话，我对于这些公司的信任程度是比较低哈。

With the Facebook privacy breach, I think some of my account information was also leaked out. Other than that, I think there are also some domestic service companies that I use, because to be honest, I have less trust in those companies.

2. 你对于现在中国大陆在线服务提供商所提供的隐私保护功能的使用体验如何？

How is your experience with the privacy features offered by online service providers in mainland China today?

由云上贵州所提供的 iCloud Private Relay 是十分不错的，可以帮助我在我注册账户的时候使用 iCloud 自动生成的邮箱，并将邮件转发到我的私人邮箱，同时在我接收邮件的时候，禁止一些非法元素的出现，从而保护我的隐私。

The iCloud Private Relay provided by Cloud on Guizhou is very good, it helps me to use the email address automatically generated by iCloud when I sign up for an account, and forwards emails to my private email address, and also protects my privacy by disabling some illegal elements when I receive emails.

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3. 经过你的使用，你觉得这些隐私保护功能是否有用呢？可以分享一下具体的理由哦？

Do you find these privacy features useful after your use? Can you share your specific reasons?

是有用的哈，但这是我的想法而已啦。

It's useful, but that's just my opinion.

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Subject 9:

1. 你所遇到过的具体的隐私泄漏事件有哪些？可以分享你印象最深或者是造成很大的损失的一个事件哦？

What are some of the specific privacy breaches you have experienced? Can you share an incident that you remember most or that caused a lot of damage?

没有具体的事件了，但是我有看到过类似的新闻，我自己也在使用他们的服务。

No specific incidents anymore, but I have seen similar news, and I use their services myself.

谷歌错误地让消费者相信，改变他们的账户和设备设置，就可以保护自己的隐私，对谷歌可以访问的个人数据进行控制。但事实上，与谷歌的说法相反，谷歌继续系统性地监视用户，并从用户数据中获利。谷歌大胆的失实陈述行为，显然侵犯了消费者的隐私。谷歌部署了“黑暗模式”（dark pattern），即设计一些“技巧”，能以对谷歌有利的方式、潜移默化地影响用户决策。诉讼称，谷歌设计其产品是为了反复推动或施压人们提供越来越多的位置数据，这违反了各州和华盛顿的消费者保护法。谷歌使用各种手段不断追踪用户的位置，而这起诉讼就是，对公然侵犯隐私权和我们州法律的人早就应该采取的执法行动。

Google has wrongly led consumers to believe that by changing their account and device settings, they can protect their privacy and have control over the personal data that Google can access.

But in fact, contrary to Google's claims, Google continues to systematically spy on users and profit from their data. Google's bold misrepresentation is a clear violation of consumer privacy.

Google has deployed a "dark pattern" of "tricks" designed to subliminally influence users' decisions in ways that benefit Google. The lawsuit alleges that Google designed its products to repeatedly push or pressure people to provide more and more location data, in violation of state and Washington consumer protection laws. Google uses a variety of means to constantly track

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users' locations, and this lawsuit is, among other things, a long overdue enforcement action against blatant violators of privacy rights and our state laws.

2. 你对于现在中国大陆在线服务提供商所提供的隐私保护功能的使用体验如何？

How is your experience with the privacy features offered by online service providers in mainland China today?

不是一个很好的体验。

Not a good experience.

3. 经过你的使用，你觉得这些隐私保护功能是否有用呢？可以分享一下具体的理由哦？

Do you find these privacy features useful after your use? Can you share your specific reasons?

是没有用的。我对这些隐私功能的有效性是不是很相信的，因为介于政府的因素，他们这些公司实际上不是在保护用户的隐私，或者从某种角度来说，他们在持续的监视用户。所以其实我也不会去使用这些功能的。

It's useless. I'm not convinced of the effectiveness of these privacy features because they are not actually protecting the privacy of the users or in some ways they are constantly spying on them due to the government factor. So I wouldn't actually use these features.

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Subject 10:

1. 你所遇到过的具体的隐私泄漏事件有哪些？可以分享你印象最深或者是造成很大的损失的一个事件哦？

What are some of the specific privacy breaches you have experienced? Can you share an incident that you remember most or that caused a lot of damage?

我记得微信曾经泄漏过用户的隐私吧，这是我从一些新闻上听到的，具体的我自己也没有遇到过，或许也经历过吧，但是我只是不知道而已，或者是公司和媒体的一些行为来使用户们没有意识到隐私的泄漏，来保护公司的声誉和利润的收入。

I remember that WeChat has leaked the privacy of its users, I think I heard it on the news, I have not encountered it myself, maybe I have experienced it, but I just didn't know it, or it was some actions of the company and the media to make the users unaware of the privacy leak, to protect the company's reputation and profit income.

2. 你对于现在中国大陆在线服务提供商所提供的隐私保护功能的使用体验如何？

How is your experience with the privacy features offered by online service providers in mainland China today?

我会给出 60 分，这些功能可以说是华而不实。

I would give it 60 points for features that could be described as flashy.

3. 经过你的使用，你觉得这些隐私保护功能是否有用呢？可以分享一下具体的理由哦？

Do you find these privacy features useful after your use? Can you share your specific reasons?

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基本是无效的，这也是为什么我在之前会说是“华而不实”，用户在真正地使用这些功能的时候，会发现他们很难去使用，或者是很难找的这些功能的设置，从而不去使用这些隐私保护功能。从某种程度上来说，这可能也是这些公司的目的之一哈，从而实现他们的利益最大化。

This is why I said earlier that it was "flashy" and that when users actually use these features, they find it difficult to use them or to find the settings for them, so they don't use the privacy features. In a way, this is probably one of the aims of these companies, to maximize their profits.

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Appendix D Survey General Consent Form (en-us)

Title of Study: The Correlation between Consumer's Privacy Concerns and the Consumer's Perception towards the Effectiveness of Privacy-Preserving Features

Investigators

Name: Xiang (Craig) Fu **Dept:** NCPA Social Studies

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Contact: +86 13686893092

Introduction

- You will be asked to be in a research study of the correlation between the consumer's privacy concerns and the consumer's perception of the effectiveness of current privacy-preserving features.
- S/he was selected as a possible participant because the study focuses on the consumer groups in Guangzhou, PRC
- We ask that you read this form and ask any questions that you may have before allowing your child to participate in this study.

Purpose of Study

- The purpose of the study is to explore the relationships between consumer perceptions towards the effectiveness of privacy-preserving features and to develop a general solution to cope with current privacy concerns. By analyzing and discussing the data, the study will highlight how the user's privacy concerns will be changed or diminished by the effectiveness of the privacy-preserving features. Building on the data, the study will also seek a combined solution to cope with the current privacy concerns in the consumer market of online services.
- Ultimately, this research may be submitted online as a part of the investigator's performance task for AP Research through the AP Digital Portfolio and graded by the College Board.

Description of the Study Procedures

- If you decide to participate in this study, you will be asked to do the following things:
 - Fill out a survey regarding online privacy and security. Specifically, they will need to share their information related to perceptions about the Internet, providing personal information over the Internet, perceptions about Internet privacy, and privacy practice disclosure and assurance
 - After the survey is collected, random participants might be asked to do a follow-up interview conducted through a phone call, online zoom meeting, or in person. They will provide their opinions on current privacy issues, concerns, and any personal experience using the privacy-preserving features in the online services. The length of the interview will be about 20-30 min.

Risks/Discomforts of Being in this Study

- There are no reasonable, foreseeable, and expected risks. There may be unknown risks.

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Benefits of Being in the Study

- There are no expected benefits for participation in this study.

Confidentiality

- The study's records will be handled in complete confidence. All electronic material will be coded and secured using an encryption key file, and research records will be retained in a protected online storage. In any report we publish, we will not include any information that could be used to identify your child.

Payment & Reimbursement

- You will not receive any payment or reimbursement for participation in this study.

Right to Refuse or Withdraw

- The decision to participate in this study is entirely up to you. You are welcome to observe the interview if you wish. You may refuse to participate in the study at any time without affecting your relationship with the investigators of this study or Nansha College Preparatory Academy or losing benefits to which you are otherwise entitled. You have the right not to answer any single question, as well as to withdraw entirely from the interview at any point during the process; additionally, you have the right to request that the interviewer not use any of the interview material.

Right to Ask Questions and Report Concerns

- You have the right to ask questions about this research study and to have those questions answered by me before, during, or after the research. If you have any further questions about the study, at any time, feel free to contact me, Xiang Fu at 2220027@ncpachina.org, or by telephone at +86 13686893092. If you like, a summary of the results of the study will be sent to you. Suppose you have any other concerns about your rights as a research participant that the investigators have not answered. In that case, you may contact Ms. Mayra Palacios, NCPA Social Studies Department (mpalacios@ncpachina.org).
- If you have any problems or concerns that occur as a result of your participation, you can report them to Ms. Palacios at the number above.

Consent

- Your signature below indicates that you have decided to participate as a research subject for this study and that you have read and understood the information provided above. You will be given a signed and dated copy of this form to keep, along with any other printed materials deemed necessary by the study investigators.

Participant's
Name:

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Participant's _____
Signature: _____

Date: _____

Investigator's _____
Signature: _____

Craig Fu

Date: _____ Jan.
12, 2022

CONSUMER PRIVACY AWARENESS AND ONLINE SERVICE COMPANIES PRIVACY-PRESERVING FEATURES IN MAINLAND CHINA

Appendix E Survey General Consent Form (zh-tw)

研究题目: 消费者对隐私的关注与消费者对隐私保护功能有效性的看法之间的相关性

研究者

姓名: 傅翔 (Craig Fu) 部门: NCPA 社会科学部门

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研究简介

- 本次研究将探索消费者对隐私的关注和消费者对当前隐私保护功能的有效性的看法之间的相关性。您被选为可能的参与者，因为研究的重点是中国广州的消费者群体。我们要求您在参加这项研究之前，阅读本表格并提出任何问题。

研究目的

- 本研究的目的是探索消费者对隐私保护功能的有效性的看法之间的关系，并制定一个通用的解决方案来应对当前的隐私问题。通过分析和讨论数据，本研究将强调用户的隐私问题将如何被隐私保护功能的有效性所改变或削弱。在数据的基础上，本研究还将寻求一个综合的解决方案，以应对当前在线服务消费市场上的隐私问题。
- 最终，这项研究的全部内容将会通过 AP Digital Portfolio 的形式在线提交给 College Board。作为调查者在 AP 研究中的表现任务的一部分，并由 College Board 进行评分。

研究程序的描述

- 如果您决定参加这项研究，你将被要求做以下事情。
 - 填写一份有关在线隐私和安全的调查。具体而言，您将需要分享与对互联网的看法、通过互联网提供个人信息、对互联网隐私的看法以及隐私实践的披露和保证有关的信息。

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- 在调查收集完毕后，随机参与者可能会被要求做一个后续访谈，通过电话、在线会议或当面进行。他们将提供他们对当前隐私问题的意见，关注点，以及使用在线服务中的隐私保护功能的任何个人经验。访谈的长度大约为 20-30 分钟。

参加本研究的风险/不愉快之处

- 参加本研究项目不存在合理的、可预见的、预期的风险，但可能存在未知的风险。

参加研究的好处

- 参加本研究项目没有可预期的好处。

私隐条例

- 此研究项目的所有记录将被完全保密处理。所有电子材料都将使用加密密钥文件进行编码和保护，研究记录将保留在受保护的在线存储器中。在我们发表的任何报告中，我们将不包括任何可用于识别您孩子的信息。

报酬与补偿

- 您将不会因为参与这项研究而得到任何报酬或补偿。

拒绝或撤销的权利

- 参加这项研究的决定完全由您决定。如果您愿意，欢迎您观察访谈。您可以在任何附候拒绝参与本研究，而不会影响您与本研究调查员或南沙大学预科学院的关系，也不会失去您本应得到的利益。您有权不回答任何问题，也有权在访谈过程中的任何时候完全退出；此外，您有权要求访谈者不使用任何访谈材料。

提出问题和表达关切的权利

- 您有权提出有关这项研究的问题，并在研究之前、期间或之后要求我回答这些问题。如果您在任何时候对该研究有任何进一步的问题，请随时与我（傅翔）取得联系，可通过邮箱（2220027@ncpachina.org），亦或是电话（+86 13686893092）。如果您愿意，我们会将研究结果的摘要与您进行分享。同时，假设您对自己作为研究参与者的权利有任何其他的顾虑，而研究者没有回答。在这种

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情况下，你可以联系 NCPA 社会科学部门的 Ms. Mayra Palacios

(mpalacios@ncpachina.org)。

- 如果您有任何因参与而发生的问题或担忧，你可以通过上述号码向 Ms. Mayra Palacios 传达你的想法。

许可

- 您在下面的签名表明您已经决定您将作为研究对象参与本研究，并且您已经阅读并理解了上面提供的信息。您将得到一份已签署并注明日期的本表副本，以及研究研究者认为必要的任何其他印刷材料。

研究参加者姓

名

研究参加者签

名

期

日

研究者姓名

傅翔

日

期

2022.01.12

Appendix F Survey Parental Consent Form (en-us)

Title of Study: The Correlation between Consumer's Privacy Concerns and the Consumer's Perception towards the Effectiveness of Privacy-Preserving Features

Investigators

Name: Xiang (Craig) Fu

Dept: NCPA Social Studies

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2220027@ncpachina.org
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Contact: +86 13686893092

Parent/Guardian Name:

Introduction

- Your child is being asked to be in a research study of the correlation between the consumer's privacy concerns and the consumer's perception of the effectiveness of current privacy-preserving features.
- S/he was selected as a possible participant because the study focuses on the consumer groups in Guangzhou, China
- We ask that you read this form and ask any questions that you may have before allowing your child to participate in this study.

Purpose of Study

- The purpose of the study is to explore the relationships between consumer perceptions towards the effectiveness of privacy-preserving features and to develop a general solution to cope with current privacy concerns. By analyzing and discussing the data, the study will highlight how the user's privacy concerns will be changed or diminished by the effectiveness of the privacy-preserving features. Building on the data, the study will also seek a combined solution to cope with the current privacy concerns in the consumer market of online services.
- Ultimately, this research may be submitted online as a part of the investigator's performance task for AP Research through the AP Digital Portfolio and graded by the College Board.

Description of the Study Procedures

- If you decide to allow your child to participate in this study, s/he will be asked to do the following things:
 - Fill out a survey regarding online privacy and security. Specifically, they will need to share their information related to perceptions about the Internet, providing personal information over the Internet, perceptions about Internet privacy, and privacy practice disclosure and assurance
 - After the survey is collected, random participants might be asked to do a follow-up interview conducted through a phone call, online zoom meeting, or in person. They will provide their opinions on current privacy issues, concerns, and any personal experience using the privacy-preserving features in the online services. The length of the interview will be about 20-30 min.

Risks/Discomforts of Being in this Study

- There are no reasonable, foreseeable, and expected risks. There may be unknown risks.

Benefits of Being in the Study

- There are no expected benefits for participation in this study.

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Confidentiality

- The study's records will be handled in complete confidence. All electronic material will be coded and secured using an encryption key file, and research records will be retained in a protected online storage. In any report we publish, we will not include any information that could be used to identify your child.

Payments

- Your child will not receive any payment or reimbursement for participation in this study.

Right to Refuse or Withdraw

- The decision to participate in this study is entirely up to you and your child. You are welcome to observe the interview if you wish. Your child may refuse to participate in the study at any time without affecting your relationship with the investigators of this study or Nansha College Preparatory Academy or losing benefits to which you are otherwise entitled. Your child has the right not to answer any single question, as well as to withdraw entirely from the interview at any point during the process; additionally, you have the right to request that the interviewer not use any of the interview material.

Right to Ask Questions and Report Concerns

- You have the right to ask questions about this research study and to have those questions answered by me before, during, or after the research. If you have any further questions about the study, at any time, feel free to contact me, Xiang Fu at 2220027@ncpachina.org, or by telephone at +86 13686893092. If you like, a summary of the results of the study will be sent to you. Suppose you have any other concerns about your rights as a research participant that the investigators have not answered. In that case, you may contact Ms. Mayra Palacios, NCPA Social Studies Department (mpalacios@ncpachina.org).
- If you have any problems or concerns that occur as a result of your participation, you can report them to Ms. Palacios at the number above.

Consent

- Your signature below indicates that you have decided to allow your child to participate as a research subject for this study and that you have read and understood the information provided above. You will be given a signed and dated copy of this form to keep, along with any other printed materials deemed necessary by the study investigators.

Parent/Guardian

Name: _____

Parent/Guardian

Signature: _____

Date: _____

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Investigator's
Signature: _____

Craig Fu

Date: _____

Jan.

12, 2022

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Appendix G Survey Parental Consent Form (zh-tw)

研究题目: 消费者对隐私的关注与消费者对隐私保护功能有效性的看法之间的相关性

研究者

姓名: 傅翔 (Craig Fu) 部门: NCPA 社会科学部门

2220027@ncpachin

a.org

联系方式 +86 13686893092

父母/监护人姓名:

研究简介

- 你的孩子被要求参加一项研究，研究消费者对隐私的关注和消费者对当前隐私保护功能的有效性的看法之间的相关性。她/他被选为可能的参与者，因为研究的重点是中国广州的消费者群体。我们要求您在允许您的孩子参加这项研究之前，阅读本表格并提出任何问题。

研究目的

- 本研究的目的是探索消费者对隐私保护功能的有效性的看法之间的关系，并制定一个通用的解决方案来应对当前的隐私问题。通过分析和讨论数据，本研究将强调用户的隐私问题将如何被隐私保护功能的有效性所改变或削弱。在数据的基础上，本研究还将寻求一个综合的解决方案，以应对当前在线服务消费市场上的隐私问题。
- 最终，这项研究可以通过 AP 数字组合在线提交，作为调查者在 AP 研究中的表现任务的一部分，并由学院委员会评分。

研究程序的描述

- 如果你决定让你的孩子参加这项研究，他/她将被要求做以下事情。

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- 填写一份有关在线隐私和安全的调查。具体而言，他们将需要分享与对互联网的看法、通过互联网提供个人信息、对互联网隐私的看法以及隐私实践的披露和保证有关的信息。
- 在调查收集完毕后，随机参与者可能会被要求做一个后续访谈，通过电话、在线变焦会议或当面进行。他们将提供他们对当前隐私问题的意见，关注点，以及使用在线服务中的隐私保护功能的任何个人经验。访谈的长度大约为 20-30 分钟。

参加本研究的风险/不愉快之处

- 参加本研究项目不存在合理的、可预见的、预期的风险，但可能存在未知的风险。

参加研究的好处

- 参加本研究项目没有可预期的好处。

个人资料（私隐）条例

- 此研究项目的所有记录将被完全保密处理。所有电子材料都将使用加密密钥文件进行编码和保护，研究记录将保留在受保护的在线存储器中。在我们发表的任何报告中，我们将不包括任何可用于识别您孩子的信息。

付款

- 您的孩子不会因为参与这项研究而得到任何报酬或补偿。

拒绝或撤销的权利

- 参加这项研究的决定完全由你和你的孩子决定。如果你愿意，欢迎你观察访谈。您的孩子可以在任何附候拒绝参与本研究，而不会影响您与本研究调查员或英东美国学校的关系，也不会失去您本应得到的利益。您的孩子有权不回答任何一个问题，有权在访谈过程中的任何时候完全退出；此外，您有权要求访谈者不使用任何访谈材料。

提出问题和表达关切的权利

CONSUMER PRIVACY AWARENESS AND ONLINE SERVICE COMPANIES PRIVACY-PRESERVING FEATURES IN MAINLAND CHINA

- 您有权提出有关这项研究的问题，并在研究之前、期间或之后要求我回答这些问题。如果您在任何时候对该研究有任何进一步的问题，请随时与我（傅翔）取得联系，可通过邮箱（2220027@ncpachina.org），亦或是电话（+86 13686893092）。如果你愿意，我们会将研究结果的摘要分享给你。同时，假设你对自己作为研究参与者的权利有任何其他的顾虑，而研究者没有回答。在这种情况下，你可以联系 NCPA 社会科学部门的 Ms. Mayra Palacios（mpalacios@ncpachina.org）。
- 如果你有任何因参与而发生的问题或担忧，你可以通过上述联系方式向 Ms. Mayra Palacios 传达你的想法。

许可

- 您在下面的签名表明您已经决定让您的孩子作为研究对象参与本研究，并且您已经阅读并理解了上面提供的信息。您将得到一份已签署并注明日期的本表副本，以及研究人员认为必要的任何其他印刷材料。

父母/监护人姓

名

父母/监护人签

名

研究者姓名

傅翔

日

期

日

期

2022.01.12