

“Share for Bargaining?”: A Willingness Model Based on Privacy Computing Theory

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ABSTRACT

The use of mobile coupons to share and haggle has become an important marketing method for merchants in the field of e-commerce. However, there are still some shortcomings in the existing research on consumers' willingness to share mobile coupons. First of all, the use and sharing of mobile coupons are analyzed separately. Secondly, most of theories and models in this domain derive from the field of knowledge. Lastly, the influence of different platforms on consumers' willingness to share are not considered. Therefore, this paper explores the influencing factors of consumers' willingness to share mobile coupons in different platform scenarios from the perspective of privacy computing, and proposes six hypotheses to construct a structural equation model. Further analysis of 270 valid questionnaires obtained under five scenarios shows that users' perceived economic benefits and perceived social benefits have a significant positive impact on users' willingness to share haggling, users' perceived privacy risks have no significant impact on users' willingness to share haggling, and users' perceived social risks have a significant negative impact on users' willingness to share, Low sharing bargaining links will weaken the negative impact of perceived social risk on sharing willingness.

Keywords: Mobile coupons, sharing willingness, structural equation, privacy computing.

INTRODUCTION

“Sharing bargaining” has now become an important means for many e-commerce platforms to promote and attract new products, solving the problems of inaccurate marketing and low coupon redemption rates that have been plaguing merchants (Liu et al., 2016). For example, Pinduoduo used “social e-commerce” as a gimmick in the early days, and carried out viral fission spread in WeChat’s social ecology through “bargaining” to achieve low-cost and rapid promotion and marketing purposes. At present, “sharing bargaining” is not only limited to shopping and other consumption scenarios, but also appears in new scenarios such as travel and entertainment. It has become an important means for businesses to reach new users, maintain old users and improve product sales. Therefore, it is of great practical significance and practical value to deeply explore the internal motivation and influencing factors of users’ sharing bargaining behavior, and provide targeted opinions and suggestions for merchants and service providers, so as to achieve efficient business expansion and development.

Mobile coupons are the main carrier of “sharing and bargaining” behavior. At present, scholars’ research direction of mobile coupons has gradually paid attention to users’ behaviors from the technical perspective, such as establishing a secure and stable coupon distribution system. In the latter research perspective, researchers tend to focus on the use intention of mobile coupons, such as continuous use intention, adoption intention, etc., and pay less attention to user recommended mobile behavior (that is, mobile coupon sharing behavior) (Liu, 2019). From the perspective of theoretical basis, there are already many mature theories

in the field of knowledge and information at present, and the research in the specific scenario of “mobile coupons” is mostly based on it, such as the use of social capital theory, motivation theory, etc., but there is no theoretical model specifically for the mobile coupon scenario. In terms of the influencing factors discussed, scholars mostly based on the existing models and discussed the influencing factors of mobile coupon sharing from the perspective of consumer behavior or psychological perception, or from the perspective of motivation and attitude. The analysis of the factors of the platform or use scenario is still limited, and the attributes and characteristics of the commodity itself are less concerned by scholars.

Therefore, this paper is based on the previous research, and considering that the use of mobile coupons for “sharing bargaining” involves the privacy of users, so from a new perspective - the perspective of privacy computing, a structural equation model is constructed to explore the motivation, psychology and other factors of users, as well as the impact of platform factors on users’ willingness to share mobile coupons for bargaining. Therefore, there are two main theoretical innovations in this paper: on the one hand, it discusses the impact of user privacy on users’ sharing willingness from the perspective of privacy computing, and on the other hand, it discusses the impact of platform factors on users’ sharing willingness.

LITERATURE REVIEW

Related Theory

The research on the willingness to share and adopt in the specific scenario of “mobile consumer coupons” is mostly based on the technology acceptance model or the integrated technology model (Wang et al., 2015), but in related fields, such as the field of knowledge and information sharing and adoption, there are relatively mature theoretical models, such as social capital theory, social cognition theory, motivation theory, etc. (Su et al., 2011). This part will introduce three commonly used theories or models in the field of user sharing behavior research—technology acceptance model, motivation theory, motivation adoption model, and social capital theory. Finally, this part introduces the privacy computing theory adopted in this paper.

The Technology Acceptance Model (TAM) is the most commonly used model in the field of mobile coupon user use and sharing behavior research, and existing research are mostly based on it or combined with other related theories (Wang et al., 2015). The technology acceptance model is a theoretical model proposed by Davis et al. in the late 1980s to apply rational behavior in social psychology to management information systems. It emphasizes the influence of internal variables such as behavioral intentions, subjective attitudes and internal beliefs, as well as other related external factors, and is mainly used to explain people’s acceptance of new information technology (Gao, 2010). In the technology acceptance model, there are two important factors: perceived ease of use and perceived usefulness. The former mainly refers to the degree of effort that users believe to use a new technology, while the latter refers to the degree to which users subjectively believe that the new technology can improve work and life efficiency. The technology acceptance model believes that the user’s perceived ease of use is a user’s process expectation. The higher the perceived ease of use, the corresponding outcome expectation, the greater the perceived usefulness. Both of them further jointly affect users’ attitudes towards use. However, some scholars pointed out that the use of TAM model as the basis to explore user adoption and sharing behaviors in mobile scenarios is flawed to a certain extent: in the mobile scenario, the user’s behavior is an autonomous consumption behavior, which is contrary to the compulsive behavior in TAM’s main work-study application scenarios (Kim et al., 2007). Therefore, existing scholars have also carried out research from new perspectives when studying behaviors such as “user sharing” and “user adoption” in mobile scenarios (Liu et al., 2016).

Motivation theory is widely used in the study of human behavior (Zhao et al., 2016). The main point of motivation theory is that motivation plays a decisive role in the starting point and continuous process of individual activities, and it is also an important driving force for individual activities toward a specific goal (Liu et al., 2016). Davis et al. combined perceived ease of use with motivation theory to construct a motivational adoption model (Davis et al., 1992). This model is mainly used in the field of users’ adoption of new technologies, and related research has also confirmed that the theory can effectively predict users’ behavior of using new information technology in a non-work environment (Lin et al., 2011), so it is also widely used in

the research of users' knowledge and information sharing. In the field of user sharing behaviors such as mobile coupons, the model needs to be revised to some extent. For example, Fang Liu and others believe that the operation of mobile coupons is relatively simple, and they do not pay too much attention to "perceived usefulness", but discuss personal characteristics from the perspective of consumer consumption, such as cognition, belief, etc. (Liu et al., 2016). Some scholars also believe that the sharing of mobile coupons is a pro-social behavior, in which altruistic motivation is added (Carlo et al., 2005). Tang et al. explored the influencing factors of users sharing mobile coupons from the perspective of motivation, such as perceived value, economic reward, reciprocity exchange, and social motivation (Tang et al., 2016). Zhao et al. combined motivation theory with social capital theory to study the impact of trust, perceived similarity and social relations on mobile coupon sharing (Zhao et al., 2016).

The theory of social capital is widely used in the research of users' sharing behavior, which refers to the sum of actual and potential resources contained in the relationship network owned by individuals or social units (Chiu et al., 2007). There are three main dimensions of social capital: structural capital, relational capital and cognitive capital (Nahapiet et al., 1998). Some scholars have pointed out that three different dimensions of social capital will affect members' information or knowledge sharing behavior (Chow et al., 2008), and the motivation of "user sharing" (here refers to knowledge sharing) can be explained by social connection (structural social capital), emotional trust (relational social capital) and the same goal (cognitive social capital). Chiu et al. built a model based on social capital theory and social cognition theory to explore the behavioral motivation behind people's sharing knowledge in virtual communities (Chiu et al., 2007); Zhao et al. collected data from well-known business communities in China and confirmed the three different dimensions of social capital will affect people's knowledge sharing behavior (Ling et al., 2012).

In addition, some scholars have explored the influencing factors of user sharing behavior from multiple perspectives based on theories such as self-determination, adjustment orientation theory and valence theory, immersion theory and selective attention theory, information behavior theory and consumer behavior theory. For example, Jeng et al. explored the influence of personal characteristics on individual behavior and motivation in the context of Internet and online travel (Amiel et al., 2004; Jeng et al., 2008), while Yuejiao Fan explored the influence of individualistic tendencies on sharing willingness in the field of coupon sharing (Fan et al., 2020). But in general, the existing theory has not yet made adequate and targeted adjustments to the field of "mobile coupons".

It can be seen that the above related theories have carried out research on user sharing behavior from the perspectives of users' perception of the platform, users' internal and external motivations, and the community environment where users live, but failed to take into account that users will also face the risk of personal privacy disclosure in the process of sharing. And this issue has been paid attention to in 2001, but few scholars have explored its impact on users' willingness to share from the perspective of user privacy. In 2001, Brown found that there is a phenomenon of "privacy paradox" in online shopping: people will worry about their privacy being violated, but as long as there is a corresponding return, people are willing to provide their detailed personal information to the merchants (Brown, 2001). Xue Ke and other scholars proposed that due to the culture of advocating collectivism, there is a more intuitive and obvious privacy paradox phenomenon in my country's social media (Xue et al., 2016).

Scholars have expounded from different perspectives. Some scholars have proposed that due to the bounded rationality of human beings, there is a risk of ignoring privacy disclosure. Some scholars have explained from the perspective of social exchange theory. When people are informed about the process of collecting privacy open and far, people will tend to believe and provide personal information. Around the phenomenon of "privacy paradox", scholars have gradually developed the theory of privacy computing based on the theory of maximum effect and social exchange. The theory of privacy computing believes that individuals will take corresponding actions only after rational calculation. In the process of choosing whether to disclose personal factors, users will weigh the perceived benefits and perceived risks. Only when the former is greater than the latter, the user will choose to make private disclosures (Lee, 2011). Therefore, the calculation of perceived benefits and

perceived risks is the core content of privacy computing.

Factors Influencing Willingness to Share

Regarding the research on the influencing factors of mobile coupon sharing, scholars have not reached a unified conclusion, and the factors discussed are not the same. Most of the existing scholars' research ideas are based on research models or theories in related fields to explore the impact of corresponding influencing factors on consumers' sharing behavior in the "mobile coupon" scenario. Fang Liu et al. analyzed the motivation and behavior of users to share mobile coupons from the theoretical framework of "experience perception-experience evaluation-behavioral intention" (Liu, 2019). Fang Liu believes that a good experience for consumers is conducive to positive word-of-mouth communication, and experience value is an important indicator to measure the gains and losses of consumers in the process of experiencing products, reflecting the overall perception of consumers, and customer satisfaction is always an important issues, which are the key to promoting repeat purchases, retaining and enhancing customer loyalty. It also further considers external factors, such as business and system factors. Among them, the experience value is composed of hedonic value and practical value, the hedonic value is reflected by the streaming experience, the practical value is reflected by the perceived coupon value. From the perspective of business, it is mainly measured by users' perceived equality, coupon factor mainly considers perceived economic benefits, and system factor mainly considers perceived system quality.

Yuejiao Fan et al. draw on the research of other scholars, and from the perspective of individualistic tendencies, they propose that individualistic tendencies can positively affect users' mobile coupons. Based on the assumption of willingness to share, and from the perspective of internal and external motivation, a new model is constructed with perceived social value and perceived economic value as mediating variables (Fan et al., 2020). In the model, Yuejiao Fan believes that perceived social value is interpreted as sharing mobile coupons to improve self-worth and image, while perceived economic value is material rewards such as red packets and points obtained directly or indirectly through sharing mobile coupons, both of which will positively affect the willingness to share mobile coupons. It also considers the user's perceived risk in the process of sharing mobile coupons, and uses it as a mediating variable to adjust the influence of individualism on the willingness to share mobile coupons.

Based on social capital and motivation theory, Zhao et al. discussed the influencing factors and mechanisms of mobile coupon sharing behavior, and constructed a new model. In the model, Zhao takes the three kinds of social capital mentioned in the social capital theory as antecedent variables, and constructs three constructs of "social tie", "trust" and "perceived similarity". Zhao believes that in the process of sharing mobile coupons, if the recipients of mobile coupons obtain a certain degree of economic benefits, the sharers will have a high sense of self-worth, and there will also be some risks in the process of sharing mobile coupons. It helps the sharer to consolidate and maintain the relationship in the community. Therefore, the author believes that both will positively affect the sharing willingness of mobile coupons, and form two constructs of "sense of self-worth" and "socializing" thought as a mediating variable to influence the final mobile coupon sharing willingness.

In addition, Zhao believes that mobile coupons are not only an information sharing, but also have certain economic value (Zhao et al., 2016), so they focus on the perceived value of customers in the process of sharing mobile coupons. Mingyuan Wang et al. focused on the influence of users' herd behavior on the willingness to share mobile coupons (Wang et al., 2015). Chiu et al. considered the influence of community attributes on sharing intention (Chiu et al., 2007), Fang Liu and Xuefeng Zhao considered the influence of perceived entertainment and other factors from the perspective of internal and external motivation (Liu et al., 2016). In general, although scholars focus on different perspectives, the perspectives are basically similar. This paper summarizes the influencing factors of mobile coupon sharing willingness and obtains Table 1.

Table 1: Influencing factors of mobile coupon sharing willingness

Research Perspective	Influencing Factors
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System Angle	Perceived ease of use, perceived usefulness, etc.
Individual User	Personal innovation, individualistic tendencies, personal characteristics, etc.
Perceived Value	Perceived economic value, perceived social value, perceived self-image, etc.
Perceived Cost	Perceived risk, perceived effort, etc.
Community	Social connection, trust, identity, common goals, etc.
other	Conformity, perceived entertainment, perceived equality, altruism, etc.

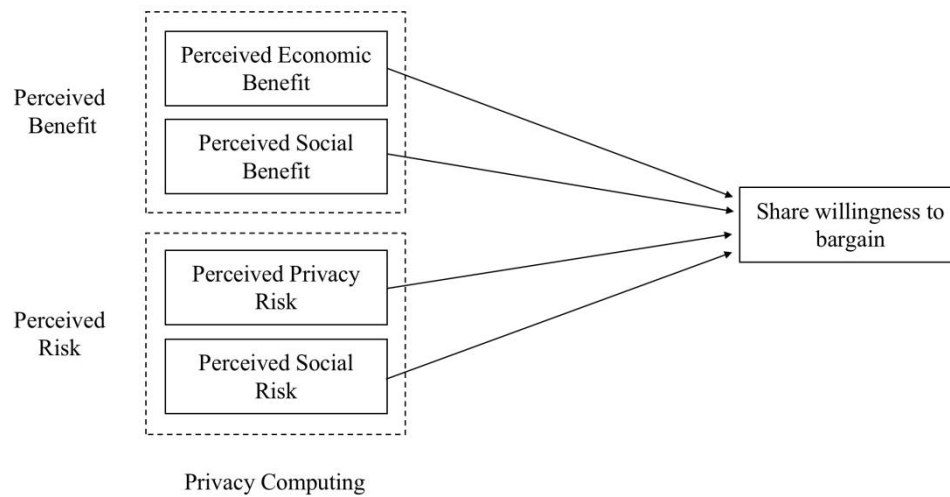
Source: This study.

MODELS AND ASSUMPTIONS

Based on the literature review section above, for the specific research question of “share bargaining”. We believe that “sharing bargaining” is a kind of sharing behavior, which can be further studied based on relevant research and theories on sharing behavior; similarly, different from traditional sharing behaviors, “sharing bargaining” will directly disclose the e-commerce platform used by the user is even the product to be purchased, so it is also a behavior of privacy disclosure; secondly, users who “share bargaining” sometimes not only get discounts for themselves, but also hope that the shared objects can get corresponding discounts, with certain social attributes.

This study selects the relevant theories of privacy computing as the basic theoretical framework. The phenomenon of “privacy paradox” has attracted the attention of many scholars. Users’ privacy behaviors are not always particularly rational. Under certain circumstances, users will ignore or reduce their privacy concerns and conduct privacy disclosure behaviors. Similarly, many scholars have conducted in-depth research on the process of users’ own privacy-related decisions, and found that users always make trade-offs between benefit acquisition and privacy disclosure. Before making decision-making behaviors, users often choose to maximize their own benefits (Culnan et al., 2003). In other words, when users feel that the gain is greater than the effort, they tend to choose to conduct privacy disclosure (Dinev et al., 2006).

After reading the previous literature, we finally selected four core variables of perceived economic benefit, perceived social benefit, perceived privacy risk, and perceived social risk as the pre-variables for sharing willingness to bargain. We believe that in this research question, under the framework of privacy computing, the variables are divided into two categories: perceived benefit and perceived risk. Perceived benefits are the results that are beneficial to users, such as economic benefits, social integration, and specific services of merchants, after users conduct privacy disclosure. Many empirical studies have proved that economic compensation (Hann et al., 2007), social participation and social identity (Yin et al., 2004) can all enhance users’ intention to conduct privacy disclosure. Perceived risk refers to the degree of loss that users think they will bring to themselves after disclosing their privacy (Malhotra et al., 2004). The above four variables perceived by users can comprehensively integrate relevant theories, covering key attributes such as sharing behaviors, privacy disclosure behaviors, and social attributes related to “share bargaining”. The main model proposed is as follows:



Source: This study.

Figure 1: Research model

Perceived Benefit and Willingness to Share Bargaining

In the model of this study, the perceived benefit part contains two variables, namely perceived economic benefit and perceived social benefit. Perceived economic benefits refer to the economic benefits and returns that users think the behavior may bring to themselves when they share bargaining. Perceived social benefits refer to the extent that users use the corresponding social media platform to share when sharing bargaining, and think that this behavior can bring them a sense of social belonging and better interpersonal relationships.

We believe that if sharing bargaining can bring certain benefits to users and help users purchase goods or services at a lower price, then users may be more willing to share bargaining; If users can get interaction and maintenance of their own interpersonal relationship through sharing bargaining behavior, or can bring corresponding benefits to others, such two-way interaction can improve the interpersonal relationship between users and the shared person or the shared group, so the user may be more willing to share bargaining. Based on this, we propose assumptions H1 and H2.

H1: Users' perceived economic benefits positively affect users' willingness to share bargaining

H2: Users' perceived social benefits positively affect users' willingness to share bargaining

Perceived Risk and Willingness to Share Bargaining

In the model of this study, the perceived risk part contains two variables, namely perceived privacy risk and perceived social risk. Perceived privacy risk refers to the loss that may be caused by such disclosure behavior when users share bargaining, including the fact that personal privacy information is known and abused by others, which is the expectation of users for the bad results that can be caused by this behavior. The perceived social risk refers to the fact that user' sharing bargaining behavior may have an impact on the person being shared. For example, sharing a bargaining link may disturb the other party, or cause others to be disgusted, change others' views of themselves, and thus affect the social relationship between sharers and sharers. Based on this, we propose assumptions H3 and H4.

H3: Users' perceived privacy risks positively affect users' willingness to share bargaining

H4: Users' perceived social risks positively affect users' willingness to share bargaining

In addition to the above assumptions, based on the above model, this study designs scenario experiments to study the impact of platform factors on the paths in the model. The platform factors involved in the scenario questionnaire include the type of platform commodity purchase, sharing, value and privacy disclosure.

According to the research and analysis of the current mainstream Internet e-commerce platforms in China, this study divides them into four categories:

Table 2: Classification of mainstream e-commerce platforms in China

Category	Representative Platform
Shopping Platform	Taobao, JD, Suning, Vipshop, Pinduoduo and e-commerce live broadcast platforms, etc.
Daily Travel Platform	Didi, Hello Bike, etc.
Machine wine tourism platform	Ctrip, Qunar, Tuniu Travel, etc.
Takeaway platform	Meituan, Ele.me, etc.

Source: This study.

According to the above table, five scenarios are set, under which e-commerce platforms share some attributes of bargaining:

Table 3: Factor attributes of e-commerce platform

Category	Purchase Type	Shareability	Value	Privacy Disclosure
Shopping Platform	Commodity	High	Low	Yes
Shopping Platform	Commodity	Low	High	Yes
Daily Travel Platform	Service	High	Low	No
Machine wine tourism platform	Service	Low	High	Yes
Takeaway Platform	Commodity	High	Low	No

Source: This study.

Sharing in the platform factor refers to the possibility that the shared users also buy or use the products that a user shares bargaining. Value refers to the price level of an item purchased under that category. Privacy disclosure or not means that when the shopping platform and the machine wine travel platform share bargaining, the platforms will directly display the specific details of the goods or services that the users will buy on the link where the user shares bargaining. It will be able to know the specific information of the goods and services that the sharer is about to purchase, such as the specific links of the goods purchased on Taobao, and the similar sharing links on Ctrip such as “I’m buying a ticket from Beijing to Shanghai”. The sharing links of the daily travel platform and the takeaway platform do not disclose the specific purchase details of the user, but only share the brand link of the platform.

Based on the specific research questions of this study, sharing and privacy disclosure are selected as the platform factors for the key research. The level of sharing and value are opposite, so only sharing is selected as the key research object. Based on the experimental scenario set up in this study, for the platform factor of sharing, when users share a bargain, when the shared link may be useful to the shared person, the shared person will also get a discount when using the e-commerce platform. For example, after the sharing bargain chain of Didi is clicked, the person being shared will get the corresponding coupon, and the next time they use the platform, they can get the corresponding discount. In this scenario, the sharing bargaining behavior is not only a sharing behavior for the benefit of individuals, but also for the benefit of the person being shared. The sharer may reduce the corresponding psychological burden and perceived social risk due to the benefit of the sharee. Regarding the platform factor of privacy disclosure or not, we believe that when more information is disclosed in the shared link, the risk of privacy leakage perceived by users will be higher. For example, the sharing link of Taobao will directly display the goods that the sharer is buying, which may have greater privacy concerns for the sharer. Based on this, we propose assumptions H5 and H6.

H5: The sharing bargaining link of low shareability will weaken the negative impact of perceived social risk on sharing willingness

H6: The sharing bargaining link of privacy disclosure will enhance the negative impact of perceived privacy risks on sharing

willingness

DATA COLLECTION AND STATISTICAL ANALYSIS

Questionnaire Design and Data Collection

According to the research hypothesis, this study sets 3-4 items for each of the 5 variables to be measured, and each scale adopts a 7-point Likert scale (1 means strongly disagree, 7 means strongly agree). In the independent variable part: First, the Chinese version of the scale revised by scholars such as Bock (Bock et al., 2005), Im and Ha (Im et al., 2015), and Choi S (Choi et al., 2008) et al. was used to measure perceived economic benefits, with a total of 3 items. Secondly, the Chinese version of the scale revised by Lee and Ma (Lee et al., 2012) is used for perceived social benefits, and the scale has 3 items in total; in addition, the perceived privacy risk adopts the Chinese version of the scale revised by Im and Ha (Im et al., 2015), Malhotra (Malhotra et al., 2004) et al. with a total of 4 items. Finally, the perceived social risk was measured using the Chinese version of the scale revised by Nikander (Nikander, 2011), Lee (Lee, 2011) et al. with a total of 4 items. In the dependent variable part, the willingness to share adopts the Chinese version of the scale revised by Bock (Bock et al., 2005), Lee and Ma (Lee et al., 2012), Chai (Chai et al., 2011) et al. with a total of 3 items on the scale. The measurement items of the scale are shown in the following figure:

Table 4: Measurement items of the scale

Variable	Measurement Item
Perceived Economic Benefit	1. In this scenario, I am willing to share if I can get a cash reward by sharing the bargain 2. In this scenario, I am willing to share if I can get me a coupon by sharing the bargain 3. In this scenario, sharing bargaining can save me money
Perceived Social Benefit	1. In this scenario, I can feel a sense of belonging to the social media by sharing bargaining on social media 2. In this scenario, I can interact with others by sharing bargaining on social media 3. In this scenario, I can keep in touch with others by sharing bargains on social media
Perceived Privacy Risks	1. In this scenario, I need to display my product or platform information when sharing bargaining, which may make me feel insecure 2. In this scenario, I need to display my product or platform information when sharing bargaining, which may bring some unexpected troubles 3. In this scenario, I need to display my product or platform information when sharing bargaining, which may bring risks to me 4. In this scenario, I need to display my product or platform information when sharing bargaining, which may cause me to suffer unnecessary loss
Perceived Social Risk	1. In this scenario, I am worried that the link generated by sharing bargaining may be regarded as an advertisement and disturb the others 2. In this scenario, I am worried that frequent sharing bargaining links will arouse disgust from others 3. In this scenario, I am worried that the bargaining links I share will change other people's perceptions of me because the price is too low. 4. In this scenario, I am worried that the bargaining link I share will reduce my image in front of others due to the characteristics of the content
willingness to share bargaining	1. In this scenario, I intend to share the bargain 2. In this scenario, I expect to receive a link to share the bargain contributed by other friends 3. In this scenario, I plan to share bargaining frequently if allowed

Source: This study.

In this study, the method of designing scenarios was used to conduct the questionnaire survey. The following five research scenarios were set up in each questionnaire. After the participants were asked to understand the scenarios, they were asked to

fill in the questionnaire. The scenario design is as follows:

Scenario 1

One day, you choose a favorite product (it can be a lipstick, a pair of sneakers, an iPhone 14, etc.) on e-commerce shopping platforms such as Taobao/JD/Suning/Vipshop/Pinduoduo. Such products are often overpriced, and when you decide to buy this product, you probably think that this product will give you a good experience. Before you are ready to pay, you notice that there is an icon of “Share Coupon” on the interface, and click it to get a prompt “Share with 3 friends, this product will get 5% off”. At this time, if you share this product link to social media platforms such as friends or Moments, after accumulative 3 clicks, both you and your friends can get the discount qualification of this product.

Scenario 2

One day, you choose to buy a daily product (it can be snacks, toothpaste, toothbrush, school supplies, etc.) on an e-commerce shopping platform such as Taobao/JD. Such products are often more practical and have a larger user base. Before you are ready to pay, you notice that there is an icon of “Share Coupon” on the interface, and click it to get a prompt “Share with 3 friends, this product will get 5% off”. At this time, if you share this product link to social media platforms such as friends or Moments, after accumulative 3 clicks, both you and your friends can get the discount qualification of this product.

Scenario 3

One day, when you complete an order in daily transportation apps such as Didi and Hello Bike. After paying, you notice that there is an icon of “Share Courtesy” on the interface, and click it to get a prompt “Share to 3 friends, get 5% off this order”. At this time, if you share the referral link generated by the platform to social media platforms such as friends or Moments, after accumulative 3 clicks, both you and your friends can get the discount qualification of the platform. For example, when you paid 100 yuan for a ride on Didi Express, and you choose to do this sharing behavior, you will get 5 yuan back to the payment channel after completing the request. And the friend who clicks will also get a 5% off coupon (which can be used in combination with other discounts)

Scenario 4

One day, when you decide to buy a travel/train ticket/hotel accommodation product on Qunar/Ctrip and other platforms. When you are ready to pay, you notice that there is an icon of “Share Courtesy” on the interface, and click it to get a prompt “Share with 3 friends and enjoy 5% off this order”. At this time, if you share the recommended link generated by the platform (which will display some travel information, such as travel to the city, etc.) to social media platforms such as friends or Moments, after accumulative 3 clicks, both you and your friends will obtain the preferential qualification of the platform.

Scenario 5

One day, when you complete an order on a food delivery platform such as Ele.me/Meituan. After paying, you notice that there is an icon of “Share Courtesy” on the interface, and click it to get a prompt “Share to 3 friends, get 5% off this order”. At this time, if you share the recommended link generated by the platform (which will display some itinerary information, such as going to the city, etc.) to social media platforms such as friends or Moments, after accumulating 3 clicks, the discount amount will be returned to the payment channel, and friends can obtain a 5% discount coupon qualification of the platform (can be used in combination with other discounts).

We adopt the method of convenience sampling and use the professional questionnaire website “Questionnaire Star” to set up the questionnaire questions and distribute the questionnaires. The link invites the subjects to answer through WeChat group, QQ group, private chat, etc. in the form of link and QR code. A total of 307 questionnaires were collected in this survey, and 270 valid questionnaires were obtained, with an effective rate of 87.95%, by excluding those with short response time (less than 60 seconds) or those with random test results (such as the same number of consecutive large films).

Descriptive Statistical Analysis

Table 5: Descriptive statistics

Descriptive Variable	Content	Number of Samples	Proportion
Gender	Male	90	33.3%
	Female	180	66.7%
Age	Below 18	2	0.7%
	18-24	250	92.6%
	25-30	16	5.9%
	Over 30	2	0.7%
Education	High school and below	3	1.1%
	Junior college/Undergraduate	121	44.8%
	Master and above	146	54.1%
Whether the platform is used in the scenario	Yes	218	80.7%
	No	52	19.3%
Times of sharing the bargain	0 times	76	28.1%
	1-5 times	140	51.9%
	5-10 times	30	11.1%
	More than 10 times	24	8.9%

Source: This study.

It can be seen from the table that among the 270 valid questionnaires, there were more female samples, accounting for 66.7%. The subjects were mainly college students, and most of the subjects had used the platforms mentioned in the scenario and had shared bargaining behaviors, which was in line with the degree of dissemination of the link to share bargaining.

DATA ANALYSIS

Reliability Analysis

Table 6: Reliability analysis table

Variable	Cronbach's α	CR
Perceived Economic Benefit	0.904	0.940
Perceived Social Benefit	0.904	0.940
Perceived Privacy Risks	0.897	0.922
Perceived Social Risk	0.880	0.925
Willingness to Share the bargain	0.932	0.871

Source: This study.

The results of reliability analysis of the five variables involved in this study are shown in the table above. It can be seen from the table that the Cronbach's α values are all far above 0.7, indicating that the selected scales have good internal consistency, and the combined reliability CR is far above 0.7, indicating that the factors have good reliability and good factor structure. In conclusion, the scale of this study has high reliability.

Validity Analysis

Convergent validity analysis

Table 7: Convergent validity analysis table

Variable	Factor Loadings	AVE
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Economic Benefit	0.893 0.917 0.882	0.805
Social Benefit	0.894 0.933 0.921	0.839
Privacy Risk	0.746 0.598 0.951 0.846	0.634
Social Risk	0.926 0.929 0.777 0.815	0.747
Willingness to Share	0.923 0.906 0.917	0.838

Source: This study.

Convergent validity was measured by factor loading values and mean extracted variance (AVE). According to the above table, the factor loading value of each item on the corresponding latent variable of the scale of this study is greater than 0.5, and the AVE of each variable is greater than 0.5, indicating that the model has good convergent validity.

Discriminant validity analysis

Table 8: Discriminant validity analysis table

Variable	Willingness to Share	Social Benefit	Social Risk	Economic Benefit	Privacy Risk
Willingness to Share	0.916				
Social Benefit	0.63	0.916			
Social Risk	-0.137	-0.064	0.864		
Economic Benefit	0.662	0.557	0.013	0.897	
Privacy Risk	0.109	0.131	0.438	0.083	0.796

Source: This study.

According to the results in the above table, the square root of the AVE of each variable is greater than the correlation coefficient, indicating that the model has good discriminant validity.

Hypothesis Test Results

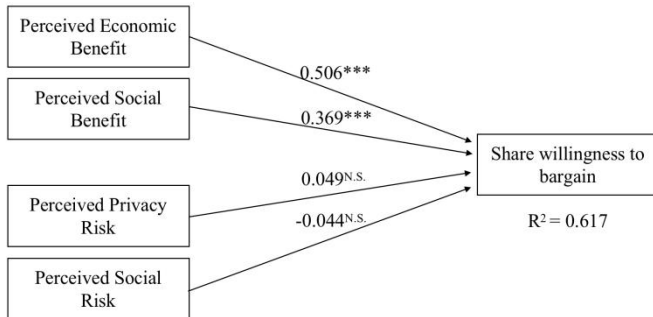
Table 9: Hypothesis test results table

Path	Normalized path coefficient	Value of T	Value of P	Test Result
Social Benefit -> Willingness to Share	0.35	5.606	***	Support
Social Risk -> Willingness to Share	-0.162	2.508	**	Support
Economic Benefit -> Willingness to Share	0.461	7.621	***	Support
Privacy Risk -> Willingness to Share	0.096	1.118	0.264	Not Support

Source: This study.

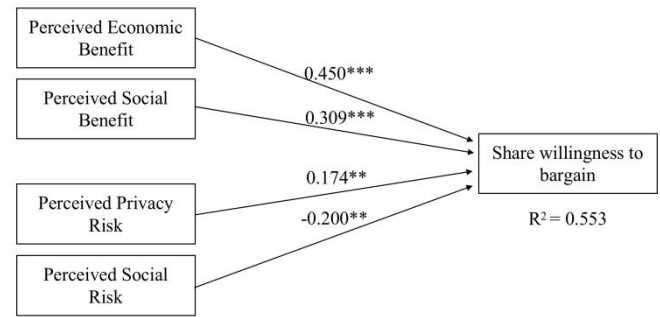
Note: *** mean $P < 0.001$

Assumptions H5 and H6 are tested with data sets under four scenarios: high sharing, low sharing, privacy disclosure and privacy non-disclosure. The model operation results are shown in the figure below.



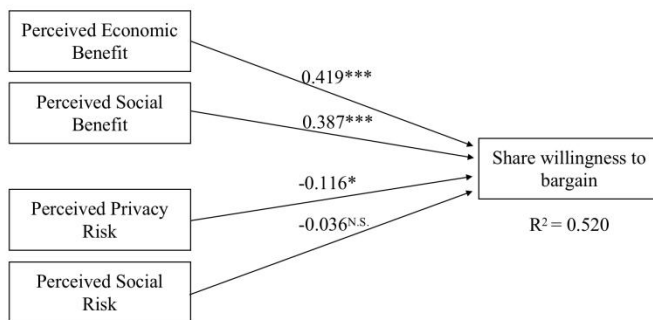
Source: This study.

Figure 2: Scenario Results (High Shareability)



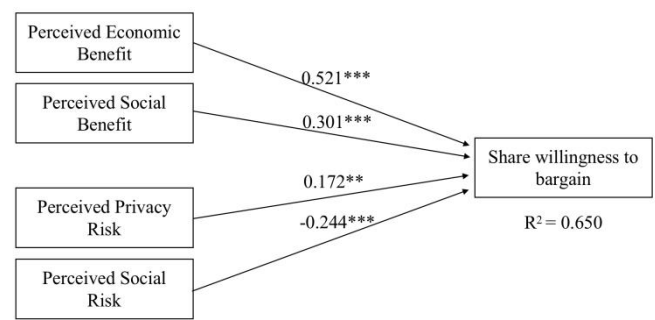
Source: This study.

Figure 3: Scenario Results (Low Shareability)



Source: This study.

Figure 4: Scenario Results (Privacy Disclosure)



Source: This study.

Figure 5: Scenario Results (Privacy non-disclosure)

Results Discussion

Based on the above research data, this study mainly draws the following conclusions:

First, in the process of sharing bargaining, users' perceived economic benefits and perceived social benefits both significantly and positively affect users' willingness to share bargaining. From the operating results, although both significantly affect users' willingness to share bargaining, perceived economic benefits have a stronger impact on users' willingness to share bargaining prices. This is consistent with our research background. The first purpose of most users' sharing bargaining is to obtain corresponding economic benefits.

Second, in the process of sharing bargaining, the impact of users' perceived privacy risk on the willingness to share bargaining is not significant. This may be because in the sharing bargaining, the privacy risk is essentially potential, and risks do not necessarily cause real loss of benefits for users, but the benefits obtained are immediately available. Once users choose to share bargaining, they default to a certain extent that they are willing to sacrifice part of their privacy in exchange for part of their

benefits, which may be the reason why this path is not significant.

Third, in the process of sharing bargaining, users' perceived social risks significantly negatively affect users' willingness to share, which is consistent with our expectations. Users have many social worries and concerns when sharing bargaining, which may be considered as advertisements to disturb the other, cause others' aversion, or reduce their image in front of others. In fact, this risk will occur immediately, when the sharer sees the link to share the bargain, this kind of social risk from the perspective of the sharer may occur instantly.

Fourth, in the process of sharing bargaining, the sharing bargaining links with low shareability will weaken the negative impact of perceived social risks on the willingness to share. Commodities with low shareability often correspond to commodities with higher prices. Users are sharing bargaining so that the commodity is displayed to the shared person. This commodity may be a commodity that can show their own taste or a higher standard of living, such as a fashionable mobile phone, a link to a trip abroad. At this point, sharing the bargaining link may become a way to show your life, and users are relatively less concerned about the views and evaluations of the people being shared. For Hypothesis H6, the negative impact of perceived privacy risk on sharing willingness is not confirmed because the path itself is not significant.

DISCUSSION AND ANALYSIS

Theoretical Inspiration

For the specific research problem of "share bargaining". We believe that "sharing bargaining" is a kind of sharing behavior, which can be further studied based on the relevant research and theories on sharing behavior; similarly, different from traditional sharing behaviors, "sharing bargaining" is also a privacy disclosure behavior because it will directly disclose the e-commerce platform users use or even the goods they will buy; secondly, users of "share bargaining" sometimes not only get discounts for themselves, but also hope that the shared objects can get corresponding discounts, with certain social attributes.

Sharing bargaining itself is a new type of thing, which has not yet received widespread attention from scholars. From the perspective of privacy computing, this study conducted a scenario experiment to explore the impact of dependent variables on sharing willingness. It is worth mentioning that this study considers the moderating effect of platform factors such as sharing, privacy disclosure and so on in the model, which provides new ideas for follow-up research.

Practical Inspiration

At present, e-commerce companies have generally adopted measures to encourage sharing and bargaining in order to enhance users' willingness to purchase, but they do not pay much attention to platform factors. Based on the perspective of privacy computing, this study proves that platform factors, as regulatory variables, can have a significant impact on users' willingness to share bargaining, and further explores the construction of an antecedent variable system for users to share bargaining, thereby guiding e-commerce companies' mobile coupon settings and marketing strategies provide feasible incentives for improving consumers' willingness to purchase.

First of all, at the level of purchase objects, we should fully consider the impact of its type; e-commerce companies can obtain the characteristics and laws of users' willingness to share for two different types of purchase objects of goods or services by analyzing users' existing bargaining behaviors. Secondly, at the level of sharing, it can be further divided into two situations: high sharing and low sharing; e-commerce companies can analyze the existing sharing bargaining behavior of users to find out the characteristics and laws of users' willingness to share with different levels of sharing. Furthermore, in terms of value, it can be further divided into two cases: high value and low value; e-commerce companies can obtain the characteristics and laws of users' willingness to share for different value levels of purchase objects by analyzing users' existing bargaining behaviors. Finally, at the level of privacy disclosure, it can be further divided into two situations: privacy announcement and unpublished; e-commerce companies can analyze the existing sharing bargaining behavior of users and draw the characteristics and laws of

users' willingness to share with the purchase objects with different privacy disclosure status.

Research Limitations

Restricted by subjective and objective conditions, this paper still has the following limitations: First, when making research assumptions, this paper does not fully consider the possible influence and interference of various factors, which leads to the failure of some contents of the original research hypothesis model, and there is a certain deviation between the research results and research assumptions; in the future research process, it can be improved by supplementing research methods and methods, and analyzing the interaction between various factors. Secondly, the sampling method adopted in this paper is nearby sampling, and the sample size is also small, resulting in insufficient representativeness and extensiveness of the sample, and the test of the adjustment effect has not been verified; in the future research process, it can be improved by improving the sampling method and expanding the sample size and other ways. Finally, it is verified whether the research conclusions of this paper can produce expected results in production practice. In the future research process, it can be further explored on the basis of sharing the construction of the pre-bargaining dependent variable system.

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