

Convenience and Online Consumer Shopping Behavior: A Business Anthropological Case Study Based on the Contingent Valuation Method

Li Meixian

China University of Political Science and Law, China

KEYWORDS Convenience. CVM. Online Shopping. Pricing Strategy. WTP

ABSTRACT Success of the growing online retail industry arises from the phenomenon that consumers are willing to pay a premium for the convenience of online shopping. Thus, the purpose of this study is to assess the premium and begin to identify which factors affect it. Using the Contingent Valuation Method (CVM) in combination with the Spike Model, this paper finds that the premium, indicated by median willingness to pay (WTP), is 2.957 for an online product priced at 50 RMB. This suggests that online sellers may increase product prices by approximately 2.957 RMB, or 5.9 percent, especially for those goods, which can be purchased with a greater convenience online as opposed to offline. In examining the following two factors: online shopping frequency and gender, this paper finds that the first significantly affects the WTP, while the second has no significant impact.

INTRODUCTION

Previous scholars have attributed consumer preference of online shopping to the incredibly lower prices offered by online retail establishments (Corrot and Nussenbaum 2014). However, this paper finds that many of these consumers actually purchase the same product at a price greater than that at a local store, that is, some customers would rather buy tissue paper online, regardless of the price difference. This same phenomenon is seen in the food industry where customers would rather order food online at original prices in addition to a delivery charge than walk to the nearest McDonald's to get a discounted price and zero delivery charge. Whatever the product may be, the convenience of online shopping has made consumers willing to pay more, in other words, there is a premium on the online shopping convenience.

Zeithaml (1998) introduced the concept of non-monetary prices, which consist of time, energy, and effort, as opposed to monetary prices. In terms of non-monetary pricing, online shopping convenience is said to decrease non-monetary prices, or specifically, less time, energy and effort are spent when shopping online. The concern of this paper is the increase amount in monetary price that would be adequate to cover the rise in convenience. Thus, estimating consumer willingness to pay for online shopping convenience, or, used interchangeably in this paper, the premium on online shopping convenience is required.

In recent years, online shopping convenience has become increasingly significant in explaining the motivation of online shoppers. Lim and Cham (2015) find that consumers in Malaysia, Singapore, and Taiwan alike, prioritize convenience over price in choosing to purchase goods. The fact that consumers are ready to pay for convenience has long been supported by scholars such as Morris (1985) who finds that consumers are willing to spend money for more convenient packaging of foods. While previous studies have considered the premium on convenience when shopping offline, no studies have explored the price of convenience when shopping online. Furthermore, no previous study regarding the willingness to pay has concerned online shopping, focusing rather on healthcare or public policy. Accordingly, this paper aims to expand the study of willingness to pay to the arena of convenient online shopping.

Objectives

The purpose of this paper is, by carrying out an empirical study, to 1) identify factors that would possibly affect the consumer willingness to pay for the convenience of online shopping, and 2) estimate willingness to pay for such convenience. This paper uses the Contingent Valuation Method (CVM) to measure consumer willingness to pay, and thereby serves as an expansion of the research on CVM study and the study of convenience.

This paper will offer practical advice when pricing products to be sold online, taking into account the fact that consumers will pay the premium associated with online shopping convenience as long as the price is not higher than the consumer's willingness to pay. That pricing strategy is ideally suited for goods purchased mainly because of the convenience provided by online shopping, and with which there is no other factor, such as brand, that is included in the buying decision process.

Overviews of Studies

Online Shopping

Online shopping environments present experiences that are rather different from those of offline environments even when it comes to the same products (Wolfenbarger and Gilly 2002). To examine how these distinct experiences affect buying decisions, a sequence of studies was conducted to find the determinants driving consumers to shop online. Richmond (1996) identified characteristics of a website that would appeal to consumers to shop online, rank from special discount pricing to entertaining activities. Apart from the design of the website, other essential components specific to online shopping were also studied. Gefen et al. (2003) find that both trust and the two factors included in Technology Acceptance Model (TAM), perceived usefulness and perceived ease of use, convincingly explained the experienced consumers' intentions to make transactions with familiar e-vendors. In addition, because convenience is a strong motivator, when consumers regard offline shopping as inconvenient, their tendencies towards online shopping are greater (Chiang and Dholakia 2003; Ahuja et al. 2003).

The studies mentioned above are mainly concerned with the quantitative causal relationship between a set of factors and consumer decisions of purchasing online, though some of them are mediated by consumer satisfaction, service safety and perceived value, few of them carry on with an in-depth investigation of a specific factor, that is, convenience. With that in mind, this paper mainly focuses on one factor: online shopping convenience.

There are many models, which have been used in the study of online shopping. The TAM

is a first choice in previous studies on explaining consumer preference of online shopping. For studies, which aim to incorporate as many factors as possible to analyze consumer decisions, models like the E-service quality measurement model (Bauer et al. 2006) are used. Apart from the stated Structural Equation Models (SEM) above, which focus on the adoption of online shopping, there are other studies (Yuan et al. 2013) that adopt a Linguistic Categories Model (LCM), focusing instead on the influence of online reviews on consumers' buying behavior. Further still, there are studies that focus on the online sellers' behavior using a Duopoly Model, such as the decision to provide free shipping (Wang et al. 2014).

Convenience

Convenience is a key to understanding shopping behavior, for which consumers attach an increased significance. To study convenience, a complete understanding of it is required. Kelley (1958) defined convenience cost as "the expenditure of time, physical and nervous energy, and money required to overcome the frictions of space and time, and to obtain possession of goods and services", and described four forms of place convenience, one of the ten types of convenience.

Brown et al. (1992) defined convenience more briefly as "A reduction in the amount or consumer time and/or energy required to acquire, use, and dispose of a product or service relative to the time and energy required by other offerings in the product/service class", and suggests a two-dimensional construct organized in the acquisition, use, and disposal phases.

These studies have been conducted at a time before the establishment of the online retail industry, and only consider convenience as an offline shopping convenience, and do not include convenience experience through online shopping. Therefore, this paper focuses on online shopping convenience, for convenience of online shopping is quite different from that of offline shopping, though they may share some commonalities.

Online Shopping Convenience

As online shopping developed, online shopping convenience has been found to be an important factor on explaining online shopping

behavior (Szymanski and Hise 2000; Wolfinbarger and Gilly 2002; Chiang 2003; Girard et al. 2003; Beauchamp and Ponder 2010; Wu et al. 2011; Doaei and Hassanzadeh 2013; Jacobsen 2014). However, none of those studies have defined online shopping convenience. There is only one paper constructing the convenience of online shopping (Beauchamp and Ponder 2010), notwithstanding it did not draw a clear definition of online shopping. Thus, this paper discusses the definition and the classification of online shopping convenience.

Zeithaml (1988) introduced the concept of non-monetary prices, which consist of time, energy and efforts spent on shopping and are against monetary prices. Taking non-monetary prices and the classification work of Brown et al. into consideration, online shopping convenience is hereby defined as a decrease in non-monetary costs, or specifically, less time, physical energy and mental energy are spent in acquiring goods or services through online shopping.

It is only after defining online shopping convenience that one can classify it. Grewal et al. (2004) suggested that e-commerce offers the convenience of time, location and delivery. Drawn from the work of Brown et al. and Grewal et al. and combined with the findings of preliminary investigations (in-depth interviews with eleven experienced college students and employees in online shopping), a set of 3 dimensions of online shopping convenience is compiled. The definition and classification of online shopping convenience are shown in Table 1.

Willingness to Pay

Willingness to pay (WTP) for online shopping convenience is the amount of money that consumers are willing to pay for the comparative

convenience of online shopping, or interchangeably, the positive changes in convenience status.

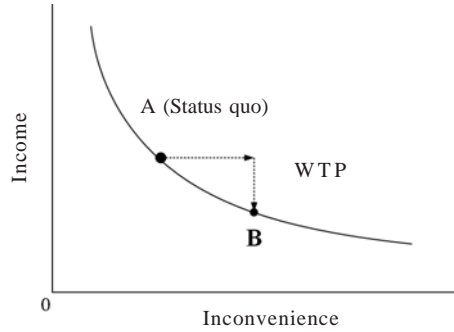


Fig. 1. Explaining WTP using the utility indifference curves

The function of WTP is performed by the utility indifference curves. In Figure 1, a black line represents the utility indifference curves whose points along it represent the constant utility functioned by convenience (x-axis) and income (y-axis). If a consumer switches from offline shopping to online shopping, the convenience increases and the amount of money that the consumer is willing to pay for this improvement is shown by the vertical distance between point B and point A. That amount of money is called WTP for online shopping convenience (improvement of convenience).

WTP refers to the maximum price that consumers are willing to pay for the improvement of convenience found by measuring the monetary amount that enables the maintenance of the previous market status quo. In practice, given an improvement to convenience, as long as the monetary increase of product price is not more than the WTP, consumers are willing to purchase goods online, for the total consumer cost does not increase.

Table 1: The definition and classification of online shopping convenience

<i>Online shopping convenience</i> (Less non-monetary prices, or specifically, less time, physical energy and mental energy spent on acquiring goods or services through online shopping) <i>Acquiring goods/service</i>		
<i>Less time</i>	<i>Less physical energy</i>	<i>Less mental energy</i>
Shop without the limitation of time Received within one day Less time spent on transportation Less time spent on searching goods	Less physical movement Services of delivering bulky goods	Easier to find desirable goods Full information

Exogenous factors that possibly affect WTP can be divided into two parts: the demographic factors and the specific factors. The demographic factors comprise of age, gender, income, social class, household size and education level. The specific factors are peculiar to the thing for which consumer’s WTP will be measured, for example, consumer involvement and price promotion of the brand in the study evaluating WTP for brands (Stenkamp et al. 2010), attitude towards environment protection and whether having been to Yangtze River before in the study evaluating the WTP for the ecological compensation of Yangtze River (Du et al. 2013).

CVM

There are many methods evaluating WTP, the CVM is considered to be the most appropriate way to assess WTP (Buzby et al. 1995; Boccaletti and Nardella 2000). Two kinds of elicitation techniques are shown in Table 2 namely, Discrete CV and Continuous CV, can be applied in the contingent valuation of WTP and among which dichotomous choice is recognized by the National Oceanic and Atmospheric Administration (NOAA) panel (Arrow et al. 1993).

Since Davis (1963) introduced it into his study, CVM has been used in several areas vary-

ing from agriculture, environmental economics and ecology, assessing the value of food safety, public policies and health services. Nevertheless, few studies on consumer behavior have used the CVM, and none of the studies on online shopping have used the CVM. Qu (2011) suggested that up until now, the expansion of the area where studies apply the CVM is an urgent need.

Generally, zero response, a response demonstrating consumer reluctance to pay, is excluded in the parametric estimation process in consideration of the validity and reliability of the CVM, both of which are constantly doubted (Diamond and Hausman 1994), for excluding zero response is proved to bring about the overestimation of WTP (Du et al. 2013). Zero response exists when the WTP of the participant is negative or zero. Table 3 shows the strikingly considerable proportion of zero response in the survey where the participant is asked if one is willing to pay or not, ranging from thirty-one percent to eighty-two percent (in this paper it is 47%). With such a large figure, excluding zero response cannot be regarded as appropriate. To settle the problem, Kristrom (1997) introduced the spike model, which allows the existence of zero WTP and is found to outperform the conventional model (Yoo and Kwak 2002). On account of its good

Table 2: Elicitation techniques for the contingent valuation of WTP

<i>Discrete CV</i>	Closed-ended question Iterative bidding	Dichotomous choice Dissonance-minimizing	Single-bounded Double-bounded
<i>Continuous CV</i>	Open-ended questions Payment card	-	Triple-bounded -

Table 3: The proportion of zero response in WTP study

<i>Author</i>	<i>Deals with</i>	<i>Proportion of zero response</i>
Kristrom (1997)	Passenger ferries in the Stockholm archipelago	77%
	Bromma airport	60%
Yoo and Kwak (2002)	The conservation value of a tidal flat in Korea	42%
Muchapondwa (2004)	The preservation of an elephant population of 200 in Mudzi	65%
Ovaskainen and Kniivila (2005)	Conservation areas in Ilomantsi, Finland	Consumer: 61% Citizen 1: 37% Citizen 2: 34%
Hanley et al. (2009)	Landscape change in National park	Lake district:58% Trossachs: 38%
Haltia et al. (2009)	Forest conservation in southern Finland	31%
Ozbaflı (2011)	A reliable electricity supply in the Turkish Republic of Northern Cyprus	40%
Du et al. (2013)	Yangtze River Basin in Nanjing Section	37%
Wang et al.(2013)	Small and medium-sized grain dryer in plain lake area in the middle reach of the Yangtze River	82%

performance, the spike model is used to estimate WTP for online shopping in this paper.

Thus, CVM is used to measure consumer willingness to pay for online shopping convenience in this paper, meanwhile the spike model is used to deal with the zero response. The effort put in this paper is to ensure the result of which to be more pragmatic and reliable.

Hypothesis Development

Premium

The first hypothesis pertains to the premium on online shopping convenience. As stated above, WTP is the amount of money a consumer is willing to pay for the improvement of convenience. Thus, theoretically, the premium is not supposed to be higher than WTP, otherwise consumers will be less likely to pay. That notion has been supported by studies concerning environment protection, food safety and public policy. This paper posits that it is the same in the area of online shopping.

H1: The higher the premium, the less money consumers are willing to pay for online shopping convenience

Gender Difference

The second hypothesis suggests that there exists a difference between a male's WTP and a female's WTP in terms of the online shopping convenience, and the WTP of a male consumer is higher. On the one hand, it has been supported that male consumers have higher convenience consciousness than female consumers (Seock and Bailey 2008) and therefore they attach greater significance on convenience. On the other hand, male consumers are found to have lower price sensitivity than female consumers (Zhang and Zhang 2012), therefore the price is less important for the male consumers than female consumers. Considering the stated two reasons above, this paper proposes that,

H2: Male consumers are willing to pay more for online shopping convenience than female consumers

Online Shopping Frequency

The third hypothesis concerns a specific factor in online shopping: online shopping frequen-

cy. Teo et al. (2004) find that convenience of online shopping decreases the consumer transaction cost of online shopping. The more frequently consumers shop online, the greater the consumers enjoy great convenience offered by online shopping and are more accustomed to it. Consequently, the transaction cost of online shopping is lower than that of offline. Since consumers choose the channel that has the lower transaction cost, they would rather pay more and continue to enjoy the online shopping convenience once the premium is higher. In short,

H3: The more frequently consumers shop online, the more money they are willing to pay for the online shopping convenience

METHODOLOGY

Model

The spike model is used to study the WTP of online shopping convenience. Under the spike model, a participant is first asked whether they are willing to pay for online shopping convenience. The single-bounded dichotomous choice survey is conducted only if the participant answers affirmatively, and if not, the survey is ended.

Thus, the distribution function of WTP is given by,

$$prob(WTP \leq A) = F_{wtp}A = \begin{cases} 0, & A < 0 \\ p, & A = 0 \\ G_{wtp}(A), & A > 0 \end{cases}$$

Where $F_{wtp}(A)$ is a right, continuous, non-decreasing function, p belongs to $(0,1)$, A presents the given bid, and $G_{wtp}(A)$ is a continuous, increasing function such that $G_{wtp}(0) = p$ and $\lim_{A \rightarrow \infty} G_{wtp}(A) = 1$ and (Kristrom 1997).

Assuming that WTP is distributed as logistic (on the positive axis), the distribution function of WTP is given by,

$$F_{wtp}A = \begin{cases} 0, & A < 0 \\ \frac{1}{e^a}, & A = 0 \\ \frac{1}{1 + e^{a - \beta A}}, & A > 0 \end{cases}$$

Where, a is the marginal utility of convenience improvement, while β is the marginal utility of income.

The can be estimated by using the parametric maximum likelihood method. The log-likelihood function of is presented as,

$$\ln L(\alpha, \beta) = \sum_{i=1}^N \left\{ \begin{aligned} &(1 - S_i)(1 - I_i^y) \ln \left[\frac{1}{e^\alpha} \right] \\ &+ S_i(1 - I_i^y) \ln \left[\frac{1}{1 + e^{\alpha - \beta x}} - \frac{1}{e^\alpha} \right] \\ &+ S_i I_i^y \ln \left[\frac{1}{1 + e^{-\alpha + \beta x}} \right] \end{aligned} \right.$$

Where, ,serve as indicators, which are defined as,

(*i*th participant’s response is yes, 0 otherwise) when one is asked whether they are willing to pay or not, and

(*i*th participant’s response is “yes”, 0 otherwise) when one is asked whether they are willing to pay a certain price (Kristrom 1997).

Accordingly, the mean and median WTP is calculated as the following (Kristrom 1997),

$$\overline{WTP} = \frac{\ln(1 + e^\alpha)}{\beta}$$

$$WTP_{median} = \begin{cases} \frac{\alpha}{\beta}, & \text{if } \frac{1}{1 + e^\alpha} < 0.5 \\ 0, & \text{otherwise} \end{cases}$$

Questionnaire Development

The CV questionnaire applied in this paper consists of two parts, the WTP questions designed in accordance with the spike model and single-bounded dichotomous choice, and individual demographic characteristics as well as factors relating to online shopping, including gender and online shopping frequency.

The participant is first showed the listed online shopping conveniences that one is likely to be aware of and read as follows in Box 1.

Box 1

Suppose you earn ¥ 2000 each month, and now you want to purchase a 50 product available online and offline, yet the price of the online one is a little bit more expensive than offline, buying it online will offer you the convenience including: Less time spent: enables you to find out your desirable goods in a short time, no need to waste time on transportation, and super-fast delivery service that brings goods to you within 24 hours. Less physical energy expense: no need to walk to an offline store, bulky goods delivery service. Less mental energy expense: presale customer service, shopping carts, favorites list and

other services provided by the online shopping platform all decrease your mental energy expense on finding out desirable goods.

Those facts suggest that the respondents had a clear idea of what the online shopping convenience entailed.

The WTP questions read as follows in Box 2.

Box 2

Are you willing to pay for online shopping convenience? Yes No (If yes, then the following questions are asked, if no, the WTP part is ended.) Are you willing to pay _____? Yes No (The bid is randomly selected ranging from 0.1 to 10 in accordance with the in-depth interviews.)

The individual demographic and socioeconomic characteristics question online shopping frequency.

Data Collection

The questionnaire is distributed via sojump.com. The convenience sample comprises 251 participants, where data from two participants who spent less than thirty seconds on finishing the questionnaire are excluded on account of the quality. The respondents are all from China, and eighty-one percent of them are from Beijing, Tianjin, Guangdong province and Fujian province.

RESULTS AND DISCUSSION

Descriptive Statistics

The rate of zero response is forty-seven percent out of which fifty-five percent is negative WTP identified by asking the reason for not willing to pay. If they select “The online good should never be more expensive than offline one”, then the zero response is regarded as a negative WTP, and if they select “I cannot pay more on online shopping” or “Cannot benefit from online shopping convenience”, the zero response is regarded as zero WTP. The descriptive statistics of the survey are showed in Table 4. Since there is no significant difference between those who have a positive WTP and those who have a negative one through a t-test, the negative response can be safely deleted.

Table 4: Descriptive statistics of the survey

	<i>Full sample N=251</i>		<i>WTP >0 N=134</i>			<i>WTP < 0 N=65</i>		<i>t</i>	
	<i>Total</i>	<i>Proportion (%)</i>	<i>Total</i>	<i>Proportion (%)</i>	<i>Mean</i>	<i>Total</i>	<i>Proportion (%)</i>		
<i>Gender</i>					0.31			0.26	-0.64
Male	72	28.7	41	30.6		17	26.2		
Female	179	71.3	93	69.4		48	73.9		
<i>Online Shopping Frequency (Per Week)</i>						1.39		1.20	-1.95
1	193	76.9	96	71.6		57	87.7		
2	33	13.2	24	17.9		3	4.6		
3	25	10.0	14	5.6		5	7.7		

Estimation Results and Discussions

The spike model is estimated by the maximum likelihood estimation method in LIMDEP 9.0. Table 5 describes the estimation results.

The coefficient of bid is significantly positive in each model, meaning that the higher the given bid is, the less the willingness-to-pay and thus hypothesis 1 is accepted. In other words, online sellers are not supposed to charge a premium on online shopping convenience that is extremely high, in that the higher the premium is, the fewer consumers will be willing to pay.

Both the coefficients of gender are insignificantly positive in model 2 and model 4, suggesting that there is no statistically significant difference in WTP between male and female, though female consumers are willing to pay more than male consumers, since the coefficients in model 2 and model 4 are both positive. Herein, hypothesis 2 is rejected. That is to say, no gender gap exists in the willingness to pay for online shopping convenience, though male consumers are more convenience-conscious (Seock and Bailey), and less price-sensitive than female consumers (Zhang and Zhang 2012). The finding in this paper is in accordance with a previous study on WTP for the Yangtze River (Du et al. 2013) and supports the study by Pascual-Miguel et al. (2015), which find that there is no significant difference in purchase intentions in non-digital merchandises between male and female while shopping online. Both male and female are enjoying the convenience of online shopping and willing to pay a premium for it. On the account that there is no need to consider the gender difference when drawing up a pricing strategy and

online sellers should charge the same premium to male and female consumers.

Notwithstanding, both the coefficients of online shopping frequency are positive in model 3 and model 4, which suggests that the more often consumers shop online, the less money they are willing to pay and are surprisingly against hypothesis 3. Hypothesis 3 is therefore rejected. Krishna (1991) finds that the coefficient of perception of deal frequency correlated to the price consumer being willing to pay for a brand is significantly negative. The result of this paper suggests that online shopping is the same, for online shopping frequency is likely to be construed as the perceived frequency of dealing in online shopping by the respondents. Consumers with high-perceived frequency of dealing are inclined to be more concerned about the price of online products, consequently being less willing to pay more despite the great convenience of online shopping. However, those with low perceived frequency of online shopping may not attach great importance to price, thus being willing to pay more. Since there exists a difference between perceived frequency of dealing and the actual one, namely a perception bias (Krishna 1991), future study may focus on the factors lowering the perceived frequency of online shopping though the actual one is high. Dawes et al. (2015) find that there is a negative correlation between loyalty to a brand and category purchase frequency. This paper proves that loyalty to online shopping is the same. That is, the more frequent consumers shop online, the less loyal they are to online shopping. Therefore, consumers are less willing to pay a higher premium. The impact of online shopping frequency on consumer willingness to pay may be mediated by their loyalty to it, instead of the transaction cost

stated in the hypothesis 3. Online sellers are supposed to target those consumers with a relatively lower perceived frequency of online shopping, since they are more loyal to online shopping and thus are willing to pay more for online shopping convenience.

The mean WTP in model 4 is 5.671, while the median WTP is 2.957, which is quite different from the mean WTP. The median WTP thus suggests that the value of online shopping convenience is, or more reliably, approximately 2.957.

CONCLUSION

This paper defines online shopping convenience as a decrease in non-monetary prices, or specifically, a decrease in time, physical energy and mental energy spent on acquiring goods or services through online shopping. In this paper, the zero response rate is forty-seven percent, suggesting that the spike model, which considers it offers a more accurate results of WTP, on account of the sizable proportion of zero response, and therefore ensuring the accuracy of CVM. Measured using the CVM and the spike model, the value of convenience brought by online shopping is 2.957 indicated by the median WTP, suggesting that this is the maximum price that consumers are willing to pay for online shopping convenience for a product priced at 50. The online sellers may increase price by approximately 2.957, or 5.9 percent, especially for those goods, which are purchased mainly because of the consideration that they are acquired more conveniently online than offline, for instance, books. That pricing strategy is reasonably pragmatic for goods purchased for the stated reason above. Online shopping frequency is found to be a significant factor on consumer willingness to pay. That is, the more often consum-

ers shop online, the lower their willingness to pay for online shopping convenience. Gender is not a significant factor affecting a consumer's willingness to pay; therefore there is no difference between male WTP and female WTP for online shopping.

RECOMMENDATIONS

This paper serves a pragmatic purpose: to drive online sellers away from an increasingly fierce price war by evaluating consumer willingness to pay for online shopping convenience. The premium on online shopping should be considered in the pricing of the online product, for it tends to increase both the satisfaction of consumers and the income of the online seller.

This paper is based on the assumption that the premium of a online product is only influenced by online shopping convenience, and as a consequence of which the premiums of an online product is equal to consumer willingness to pay for the online shopping convenience. Nevertheless there is another factor that would probably exert an impact on the premium, including the industry. For instance, the online food industry, based on the offline food industry, has earned a great amount of loyal consumers who would rather order their snack online with a premium, than walk to a nearest McDonald to have the same but cheaper snack. In general, when it comes to the online food industry, the premium is likely to be higher. What the researchers are concerned about here is the appropriate premium to place on the online food industry and the factors that influence it.

Moreover, the following factors omitted in the paper may exert a negative influence on the application.

1) *Cognitive bias based on information asymmetry*: In the survey, the context with sym-

Table 5: Estimation results for the Spike Models

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Constant	0.425**	0.434***	0.511***	0.512***
Bid	0.386***	0.354***	0.175**	0.173**
Gender (Male)	-	0.373	-	0.049
Online shopping frequency	-	-	0.620***	0.613***
Median WTP	1.102	1.224	2.928	2.957
Mean WTP	2.405	2.635	5.619	5.671
LR(p)	445.841 (0.0000)	440.628 (0.0000)	395.234 (0.0000)	395.204 (0.0000)

Notes: (***) , (**) and (*) refer to statistical significance at the 0.1%, 1%, and 5% levels, respectively. The dependent variable is WTP.

metrical information is provided to the participants who receive, in fact, asymmetry information in the real shopping context where they know little about the prices of an offline product to a corresponding online one. In addition to the firm long-standing impression that an online product is cheaper than offline, the cognitive bias is formed, under which there remains a possibility that the consumer purchases an online product, which he/she thinks is cheaper yet in fact more expensive than offline. In that case, the premium might be higher, or lower, than consumer willingness to pay for online shopping convenience. Hence, an uncertainty may be generated on account of the cognitive bias in the application of consumer willingness to pay for online shopping.

2) *Shipping*: Shipping is excluded in this paper because of the difficulties in application; the shipping policy is rather different with different areas and companies. Taking shipping into consideration, the result of this paper may be inaccurate.

3) *The categories of the merchandises*: The premium measured in this paper is 2.957 RMB out of 50 RMB, namely 5.9 percent. The interviews find that, however, the premium is quite distinct among online merchandises of different categories.

Last but not the least, inaccuracy may have occurred because of the small sample size in the survey. In short, future study is advised to consider the cognitive bias, shipping and the categories of the merchandises, meanwhile enlarging the sample size.

REFERENCES

- Ahuja M, Gupta B, Raman P 2003. An empirical investigation of online consumer purchasing behavior. *Communications of the ACM*, 46(12): 145-151.
- Arrow K, Solow R, Portney PR, Leamer EE, Radner R, Schuman H 1993. Report of the NOAA Panel on Contingent Valuation. *Federal Register*, 58(10): 4601-4644.
- Bauer HH, Falk T, Hammerschmidt M 2006. eTransQual: A transaction process-based approach for capturing service quality in online shopping. *Journal of Business Research*, 59(07): 866-875.
- Beauchamp MB, Ponder N 2010. Perceptions of retail convenience for in-store and online shoppers. *The Marketing Management Journal*, 20(01): 49-65.
- Boccaletti S, Nardella M 2000. Consumer willingness to pay for pesticide free fresh fruit and vegetables in Italy. *International Food and Agribusiness Management Review*, 3(03): 297- 310.
- Brown LG, McEnally MR 1992. Convenience: Definition, structure, and application. *Journal of Marketing Management*, 2(02): 47-56.
- Buzby JC, Skees JR, Ready RC 1995. Using contingent valuation to value food safety: A case study of grapefruit and pesticide residues. In: JA Caswell (Ed.): *Valuing Food Safety and Nutrition*. Colorado: Westview Press, pp. 219-256.
- Chiang K, Dholakia RR 2003. Factors driving consumer intention to shop online: An empirical investigation. *Journal of Consumer Psychology*, 13(1/2): 177-183.
- Corrot P, Nussenbaum A 2014. Marketplace: The Future of E-commerce. From <http://www.mirakl.com/> (Retrieved on 10 April 2015).
- Davis RK 1963. Recreation planning as an economic problem. *Natural Resource Journal*, 15(03): 240-249.
- Dawes J, Meyer-Waarden L, Driesener C 2015. Has brand loyalty declined? A longitudinal analysis of repeat purchase behavior in the UK and USA. *Journal of Business Research*, 68(2): 425-432.
- Diamond PA, Hausman JA 1994. Contingent valuation: Is some number better than no number? *Journal of Economic Perspectives*, 8(04): 45-64.
- Doaei H, Hassanzadeh JF 2013. Barriers and crucial factors affecting Iranian consumer mind during online shopping. *New Marketing Research Journal*, 59-67.
- Du L, Cai Z, Yang J, Jiang Z 2013. Using spike model to evaluate the effect of zero response on welfare measurement: Evidence from the willingness to pay for the ecological compensation of the Yangtze River Basin in Nanjing Section. *Journal of Nature Resource*, 28(06): 1007-1018.
- Gefen D, Karahanna E, Straub DW 2003. Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27(01): 51-90.
- Girard T, Korgaonkar P, Silberblatt R 2003. Relationship of type of product, shopping orientations, and demographics with preference for shopping on the internet. *Journal of Business and Psychology*, 18: 101-120.
- Grewal D, Iyer GR, Levy M 2004. Internet retailing: Enablers, limiters and market consequences. *Journal of Business Research*, 57(07): 703.
- Haltia E, Kuuluvainen J, Ovaskainen V, Pouta E, Rekola M 2009. Logit model assumptions and estimated willingness to pay for forest conservation in Southern Finland. *Empirical Economics*, 37(03): 681-691.
- Hanley N, Colombo S, Kristrom B, Watson F 2009. Accounting for negative, zero and positive willingness to pay for landscape change in a national park. *Journal of Agricultural Economics*, 60(01): 1-16.
- Jacobsen J 2014. Americans embracing online shopping. *Beverage Industry*, (October): 6.
- Kelley EJ 1958. The importance of convenience in consumer purchasing. *Journal of Marketing*, 23(01): 32-38.
- Krishna A 1991. Effect of dealing patterns on consumer perceptions of deal frequency and willingness to pay. *Journal of Marketing Research*, 28(4): 441-451.
- Kristrom B 1997. Spike models in contingent valuation. *American Journal of Agricultural Economics*, 79(03): 1013.
- Lim YM, Cham TH 2015. A profile of the Internet shoppers: Evidence from nine countries. *Telematics and Informatics*, 32(02): 344-354.

- Morris Betsy 1985. How much will people pay to save a few minutes of cooking? Plenty. *Wall Street Journal*, 23.
- Muchapondwa E 2004. Can local communities in Zimbabwe be trusted with wildlife management? : Application of CVM on the Elephant in Mudzi Rural District. In: E Muchapondwa (Ed.): *The Economics of Community-Based Wildlife Conservation in Zimbabwe*. Sweden: Goteborg University, pp. 102-148.
- Ovaskainen V, Kniivila M 2005. Consumer versus citizen preferences in contingent valuation: Evidence on the role of question framing. *The Australian Journal of Agricultural and Resource Economics*, 49(04): 379-394.
- Ozbaflı A 2011. *Estimating the Willingness to Pay for a Reliable Electricity Supply in the Turkish Republic of Northern Cyprus*. PhD Thesis, Unpublished. Birmingham: The University of Birmingham.
- Pascual-Miguel FJ, Angel FA, Chaparro-Pelaez J 2015. Influences of gender and product type on online purchasing. *Journal of Business Research*, 68(07): 1550-1556.
- Qu X, Li G 2011. CVM: The theoretical foundation and research progress. *Statistics and Decision*, (07): 156-160.
- Richmond A 1996. Enticing online shoppers to buy- a human behavior study. *Computer Networks and ISDN Systems*, 28(07): 1469-1480.
- Seock Y, Bailey LR 2008. The influence of college students' shopping orientations and gender differences on online information searches and purchase behaviours. *International Journal of Consumer Studies*, 32(02): 113-121.
- Steenkamp JE, Van Heerde HJ, Geyskens I 2010. What makes consumers willing to pay a price premium for national brands over private labels? *Journal of Marketing Research*, 47(06): 1011-1024.
- Szymanski DM, Hise RT 2000. E-satisfaction: An initial examination. *Journal of Retailing*, 76(03): 309-322.
- Teo TSH, Wang P, Leong HC 2004. Understanding online shopping behaviour using a transaction cost economics approach. *International Journal of Internet Marketing and Advertising*, 1(1): 62-84.
- Wang B, Li X, Cheng L, Liu Z 2013. CVM study of small and medium-sized grain dryer in plain lake area in the middle reach of the Yangtze River. *Resources and Environment in the Yangtze Basin*, 22(12): 1648-1652.
- Wang H, Yang H 2014. Economic analysis of "free shipping" in the online shopping- based on the Duopoly Model. *Journal of Shandong University (Philosophy and Social Science)*, (02): 1-11.
- Wolfenbarger M, Gilly MC 2002. comQ: Dimensionalizing, Measuring and Predicting Quality of the E-Tail Experience. *Working Paper No. 02-100*. Marketing Science Institute, Cambridge, MA.
- Wu X, Xie Z, Jiang J 2011. Motivations underlying the university students' online shopping- taking Peking University for example. *Modern Educational Technology*, 21(05): 100-105.
- Yoo S, Kwak S 2002. Using a spike model to deal with zero response data from double bounded dichotomous choice contingent valuation surveys. *Applied Economics Letters*, 9(14): 929-932.
- Yuan B, Huang J, Zeng Y 2013. The effect of language abstraction in online reviews on consumers' brand attitude and buying intention: An empirical research based on the Linguistic Category Model (LCM). *Journal of Marketing Science*, 9(03): 17-30.
- Zeithaml VA 1988. Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing*, 52(03): 2-22.
- Zhang S, Zhang Z 2012. Gender differences in online shopping behavior and strategy research on network marketing. *Journal of Nanjing Forestry University (Humanities and Social Sciences Edition)*, 12(02): 94-99.