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Research Article

The Influences of Perceived Factors on Consumer Purchasing Behavior: In the Perspective of Online Shopping Capability of Consumers

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Abstract: In this study, firstly, based on related researches about consumer online purchasing behavior before, we proposed that there were some perceived factors that influence perceived value which has a direct impact on consumer's online purchasing decision-making. Secondly, on the analysis for the antecedent of consumer perceived factors with online shopping, we proposed the definition of online shopping capability of consumer and try to explore what factors would affect consumers' perceived value when they are online shopping in the perspective of consumer's online shopping capability and their different influences on consumer purchasing behavior. We designed a questionnaire and obtained 1359 valid data from our investigation. Data analysis indicates that besides online shopping capability of consumers, there are other four significant common factors such as trust, perceived risk, perceived benefit and perceived cost, have significant influences on consumers' perceived value. The causal relation among online shopping capability of consumers, the other four perceived factors and perceived value and consumer online purchasing behavior are verified using confirmatory factor analysis. We explored the differences and their changing way among different kinds of consumers. Discussions for the results indicated that consumers with different shopping experiences have different online shopping capabilities and significant differences on the other four perceived factors.

Keywords: Consumer purchasing behavior, different effects, online shopping capability, perceived factors

INTRODUCTION

With the development of online shopping over the world, it has attracted more and more consumers purchasing online for its convenient service, quickly searching information for product and it will become a popular shopping way for consumers in the future. The growth of E-commerce has revealed the evolution of the behavior of consumers as they had online shopping (Gefen *et al*., 2003; Hsu *et al*., 2007; Hernandez *et al*., 2009). Some studies on Information Technologies (IT) and E-commerce have found that the perceptions that influence adoption and acceptance may have different effects on individuals' subsequent decisions (Venkatesh *et al*., 2003; Gefen *et al*., 2003; Hernandez *et al*., 2009). Consumers' perceived value, which was defined as consumers' overall evaluation for the utilities of product and service from what they have perceived the benefit and cost, had significant influence on consumers' shopping intension (Zaithaml, 1988). We base our argument on the fact that, the perceived value that makes a potential customer to make a purchase decision is not the same as that influences an experienced customer.

Most of recent researches analyzed consumers' online shopping behavior influenced by their trust for shoppers, perceived risk from the process of online shopping and satisfaction for service separately (Gefen *et al*., 2003; Vijayasarathy, 2004; Zhao and Ji, 2010). Very few researches have conducted a separate analysis of the perceptions related perceived value to influence individuals' subsequent decisions, especially based upon the perspective of online shopping capability of consumer and there are few researches about the variation influence on different consumers' characteristics. Therefore, the main objective of our study is to propose and validate an integrative model to explain the way how these perceived factors influence consumer's online purchasing intention based upon the perspective of online shopping capability of consumers. Additionally, the effects of users' social demographic characteristics on their online purchasing behavior are also analyzed in order to identify the differences in the purchasing and consumption process among the different user categories.

This study is organized as follows. In "literature review and research hypotheses" of this study we provide a brief overview of the relevant literature and formulate the hypotheses. In "Formation of

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questionnaire and data collection" we provide a description of the data and the methodology of our empirical analysis. The empirical results are discussed in "Data analysis and results" and the differences analyses are provided in "Differences of Consumers' Perceived Factors-effects of shopping experience, age and gender", summary discussions and implications of our research are presented in "Summary Discussions and implications".

LITERATURE REVIEW AND RESEARCH HYPOTHESES

Petrick (2002) proposed there were five factors for customer perceived value, such as perceived quality, perceived enjoyment, renowned, monetary cost and behavior cost. Chen and Dubinsky (2003) constructed a theoretical framework of perceived value in a business-to-consumer. The key precursors of perceived value included in the model are valence of online shopping experience, perceived product quality, perceived risk and product price. Wu and Su (2009) investigated that consumers' perceived value included different influence factors such as product quality, price, logistic flow service, easy use, privacy security and customer service. Zhang and Chen (2011) summarized that risk, web design, cost service, experience and convenient have impacts on customers' perceived value in online shopping by their empirical study.

Based on the related researches before, we proposed that the sources of consumer perceived value are web (or suppliers in websites), products (or services), the overall process of online shopping (safety payment, privacy included), delivery and after-sale service *et al*. The perceived factors which would influence the perceived value of consumers' online shopping may come from these sources such as trust for web, suppliers on web sites, their products and services; perceived benefit, perceived risk and perceived cost from the overall process of online shopping:

- Trust is the belief of consumers for the ability, honesty and kindness of suppliers in web and shows their confidence for the behavior of suppliers. Many studies find that trust has significant influence on perceived risk and benefit and so does on consumers' perceived value. Therefore we propose the following hypothesis:

  H1: Trust positively influences consumers' perceived value in online shopping.
  H2: Trust positively influences consumers' perceived benefit in online shopping.
  H3: Trust negatively influences consumers' perceived risk in online shopping.
  H4: Trust negatively influences consumers' perceived cost in online shopping.

- Perceived benefits of online shopping have been discussed in terms of meeting consumers' functional (utilitarian) or nonfunctional (hedonic) needs (Childers *et al*., 2001; Bhatnagar and Ghosh, 2004). Gupta and Kim (2007) reported that perceived benefits related to convenience, price and pleasure offered by an online book store led to Korean online consumers' overall perceived value which then significantly influenced their repurchase intention from the web site. Therefore we propose the following hypothesis:

  H5: Perceived benefits positively influence consumer perceived value in online shopping.

- Perceived risk has been discussed as a predictor of purchasing online behavior. For example, Drennan *et al*. (2006) found that consumers' perceived risk associated with online shopping was negatively related to the extent to which college students subscribed to online services and purchased products via the internet. Similarly, Zhao and Ji (2010) found that consumers' perceived risk was negatively related to their perceived value. Therefore we propose the following hypothesis:

  H6: Perceived Risk negatively influence consumer's perceived value in online shopping.

- Perceived cost is their all spending on what they buy and what services they have in the overall process of online shopping such as the cost of their monetary, time and energy. Sun and Si (2007) found that there were relationship between consumers' perceived cost and their perceived value. Therefore we propose the following hypothesis:

  H7: Perceived cost negatively influence consumer perceived value in online shopping.

- Although the subjects of trust, perceived benefit, perceived cost, perceived risk have been discussed extensively in the literature of information systems, e-commerce and marketing, the exploration of antecedent to consumer perceived factors with online shopping is still in its infancy. There is no current consensus on the antecedents or determinants of consumer perceived factors with online shopping. Given that online shopping deals with information systems, e-commerce and marketing activities, we propose the definition of online shopping capability of consumer and explore its influence on perceived factors of consumers.

  Online shopping capability is the ability of individual that based on the internet, use information technology to carry on electronic commerce activity, such as searching goods and purchasing goods. The online shopping capability primarily included consumers' subjective initiative,

Table 1: Demographic variables

Characteristic	Variables	Numbers	Number (%)
Gender	Male	736	54.2
	Female	623	45.8
Shopping experience	Never	311	22.9
	Once time	254	18.7
	Frequently	794	58.4
Age	18~20	285	21.0
	20~30	976	71.9
	30~40	58	4.3
	40~50	33	2.4
	≥50	6	0.4

objective resources and the ability of management which would influence his perceived factors such as trust, perceived benefit, perceived cost and perceived risk. In order to test its impact on other perceived factors, we propose the following hypothesis:

H8 : Online shopping capability positively influences consumers' trust in online shopping.

H9 : Online shopping capability positively influence consumers' perceive benefit in online shopping.

H10: Online shopping capability negatively influences consumers' perceived cost in online shopping.

H11: Online shopping capability positively influences consumers' perceived value in online shopping.

Formation of questionnaire and data collection: Based on the related literatures and our previous studies, we designed a questionnaire with 26 items used to measure online shopping capability of consumer, trust, perceived benefit, perceived risk, perceived cost and the other 5 items which were used to measure consumers' perceived value. We used Likert scale of 1-7 with end points of "strongly disagree" and "strongly agree" to measure these items. After pre-investigating to our colleagues and college students, some items were adjusted. Finally, we got our final questionnaire, in which there are, 26 measurement items, to start our exploration research.

The data that we employed for this research were collected by using interview, investigating online, business streets and factories from October, 2010 to May, 2011. Just those customers who were internet users were randomly selected as our respondents. For this research the three main sampling frame people were white-collar from company, blue-workers from factory and college students from university, more than half of them came from Shenzhen, China. Information was missing on key variables for some of the respondents; therefore, we were only able to use information on 1359 cases. This number is more than ten times of 26 items, so we can use them for the further analysis. In Table 1, we provide a description of the respondents that are used in the empirical analysis. Gender, online shopping experience and age represent the socio-demographic background of the respondents.

DATA ANALYSIS AND RESULTS

Measurement model analysis: The purpose of exploratory factor analysis is to extract a number of common factors, which may explain most information of the measures.

These factors are constructs of the perceived value in online shopping. Firstly, we use SPSS17 to perform the KMO and Bartlett's sphere city test. The KMO of our survey is 0.854, Bartlett's test chi-square is 9501.778, the degrees of freedom are 153 and the p value is 0.000. These values indicate that the data from our questionnaire are acceptable to perform further factor analysis. Using principal component analysis method and variance maximization rotation, seven items PR1, PR2, PB1, PB5, BC1, BC2, BC3 , PV5, BE1 are deleted because their rotated factor loadings are less than 0.4, we got 18 items kept in. Their factor loadings and variance contribution rates are shown in Table 2 the results of measurement model. Finally, six common factors are extracted from the remaining 18 items. We named the six common factors as follows: perceived value, trust, network capability, perceived benefit, perceived risk and perceived cost, the cumulative variance contribution rate is 69.93%, which could be used to analyze the contents and types of purchasing behavior.

From the items left for perceived factors, we know that trust reflects what consumers think about most internet retailers; network capability reflects that consumers their own capability of using network resources to shop; Perceived Risk reflects what consumers worry about delivery, after-sale service, property damaged and uncertainties. Perceived Benefit reflects what consumers obtain from online shopping. Perceived Cost reflects what time and effort consumer would spend on online shopping. Perceived value reflects the overall evaluation for the utilities after consumers enter the website.

Then we proceeded to evaluate the reliability, convergent validity and discriminate validity of the research model with confirmatory factor analysis using AMOS 17.0. The reliability and convergent validity of the factors were estimated by composite reliability and average variance extracted (Table 3).

The composite reliability for all factors in our measurement model are above the recommended 0.70 level (Davis and Warshaw, 1989). The average extracted variances are all above the recommended 0.50 level (Fornell and Larcker, 1981), which means that more than half of the variances observed in the items are accounted for the hypothesis factors.

Structural model analysis: We conducted confirmatory factor analysis for the survey data with

Table 2: Results of measurement model

Measurement items	Factor loading	Variance contribution (%)	Factor name
PV3: I believe that I could buy my satisfied products.	0.770	30.500	Perceived value
PV4: I consider its right decision for online shopping.	0.764		
PV2: I think that online shopping is the value for it.	0.738		
PV1: Taking all factors, I think it is worthwhile to purchase products online.	0.712		
TR2: Most internet retailers are honest.	0.873	11.196	Trust
TR3: Most internet retailers are reliable.	0.903		
TR1: Most internet retailers are trusted.	0.898		
IC1: I think I have the ability to use network to undertake the shopping online.	0.775	9.401	Network capability
IC2: I think shopping online is completely in the category of my capacity control.	0.747		
IC3: I think I have the resources, knowledge and the ability to online shopping.	0.842		
PB3: Online shopping is very sleek and modern.	0.833		Perceived benefit
PB4: Online shopping can increase me happiness.	0.774	6.880	
PB2: Online product information is more fully.	0.705		
PR4: Online shopping delivery has a problem.	0.818	6.084	Perceived risk
PR5: After-sale service in online shopping is a problem.	0.822		
PR3: Using the online shopping exist a lot of uncertainties.	0.703		
BC4: Spend less time on learning process of online shopping, searching products and comparing merchandise.	0.858	5.863	Perceived cost
BC5: Spend less effort from ordering merchandise to receive the merchandise.	0.787		
BE2: When have the opportunity to surf the internet, I will visit shopping website and will like to participate in the shopping.	0.853	69.923 (in total)	Purchasing behavior
BE3: I will increase the proportion and frequency of online shopping.	0.883		
BE4: I will recommend the online shopping way to relatives and friends.	0.852		

Table 3: α, CR and AVE value of perceived factors

Construct	Item	α	CR	AVE
Perceived Trust (TR)	TR1, TR2, TR3	0.911	0.934	0.825
Online shopping Capability (IC)	IC1, IC2, IC3	0.767	0.780	0.542
Perceived Benefit (PB)	PB2, PB3, PB4	0.802	0.895	0.616
Perceived Risk (PR)	PR2, PR3, PR4, PR5	0.767	0.835	0.559
Perceived Cost (BC)	BC4, BC5	0.746	0.817	0.690
Perceived Value (PV)	PV1, PV2, PV3, PV4	0.806	0.901	0.634
Purchase intention (BE)	BE2, BE3, BE4	0.828	0.831	0.621

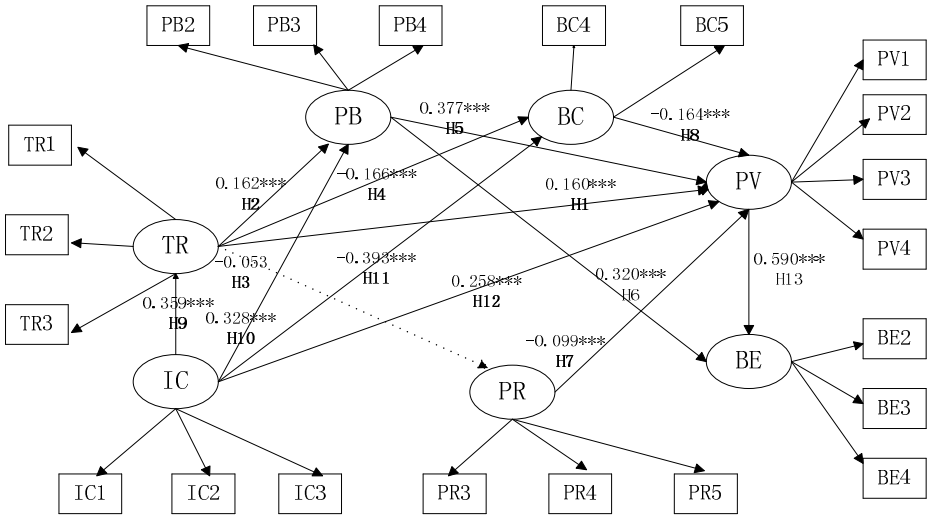

Fig. 1: The research model with path coefficient
*: p<0.05; **: p<0.01; ***: p<0.001

AMOS 17. By adjusting three times, we get the model fit indices as follows: the ratio for the chi-square value and its degrees of freedom is 2.991 in the best reference value is less than 3; goodness of fit index GFI is 0.965, adjusted goodness of fit index AGFI is 0.954, standard fit index NFI is 0.958, increased fit index IFI is 0.972, comparative fit index CFI is 0.972, these values were greater than 0.9, showed the model has a better fitness; root mean square error of approximation RMSEA is 0.038, less than 0.08. The results validate parameters show that the influences of the model for the perceived value fit the data very well, all the fitness indices are better than the standards.

From the test result, it shows that the survey data in this study is real and reliable, the six factors come to a good description for the information reflected from the data and they have impacts on consumers' purchasing behavior.

The path coefficients and significant levels of perceived factors to purchasing behavior are given in Fig. 1. The results show that H1, H2, H4, H5, H6, H7, H8, H9, H10, H11, H12, H13 are all supported, but H3 is denied. Trust, perceived benefit and network capability have significant positive influences on perceived value in online shopping, but perceived cost and perceived risk have significant negative influences on perceived value in online shopping. Besides, Trust positively influences consumers' perceived benefit and negatively influences on perceived cost and perceived risk in online shopping. Online shopping capability positively influences on perceived benefit and trust and negatively influences on perceived cost, but perceived benefit and perceived value have significant positive influences on purchasing behavior.

Differences of consumers' perceived factors-effects of shopping experience, age and gender: One-way ANOVA analysis is usually used to test the differences of dependent variables under a certain one independent factor. We use this method to explore and verify the differences of consumers' perceived factors in considering the effects of shopping experience, age and gender. The differences between consumers with different shopping experiences, ages and genders were compared and tested according to ANOVA analysis and multi-comparing of means, the comparison results are shown in Table 4.

The results of ANOVA analysis indicate that:

- Shopping experience is important influent factor which will cause significant differences of the six factors such as perceived value, trust, network capability, perceived benefit, perceived risk and cost ($p<0.001$).
- There are significant differences in perceived value ($p<0.001$) among groups with different ages, but not in trust, network capability and perceived risk.
- There is difference only in perceived cost and network capability ($p<0.001$) between groups with different gender, but not in trust, perceived benefit and perceived risk.

Because the group of shopping experience, as well as the age, is more than 2 groups, after knowing existence obvious difference, we need to carry on the Multi-comparing of means to further discover the concrete difference. Multi-comparing of means is verified firstly based on test for homogeneity of variance.

After the tests we know that at the aspect of shopping experience, trust is homogeneities, the other factors are non-homogeneities, so we choose LSD to do Multi-comparing of means for trust, Tamhane test for the other factors. Test results show that the frequently group has obvious difference with other two groups on the factor of trust, network capability, perceived benefit and perceived risk, but on the factor of perceived cost, the group of never online shopping has obvious difference with other two groups. At the aspect of age, because only on the factors of perceived value and perceived cost exist significant differences, so we carry on the Multi-comparing of means for these two factors. They are all homogeneities, so we choose LSD to test. Test results show that on the factor of perceived value, 30 year-old above person has the significant difference with 30 year-old following person, on the factor of perceived cost, 40 year-old above group has significant difference with 40 year-old following group.

The results indicate:

- From the comparing of means among different shopping experience, we found that shopping experiences make consumers become more trusted for online shopping, have stronger network capability, get more higher for their perceived benefits and perceived value, lower for their perceived risk and cost.
- From the comparing of means among different ages, we found that consumers less than 40 years old have more trusted in online shopping than the other groups, the younger the consumers are, the higher they get perceived benefit, the higher perceived value and the stronger network capability they have, consumers who are more than

Table 4: One-way ANOVA analysis and multi-comparing of means between groups

Control variables	Consumer characteristics		Perceived value	Online shopping capability	Trust	Perceived benefit	Perceived risk	Perceived cost
Shopping experience	Means	Never	-0.2969	-0.3737	-0.1091	-0.0883	0.0394	-0.1494
		Once time	-0.1432	-0.1775	-0.1237	-0.1148	0.1637	0.0973
		Frequently	0.1621	0.2031	0.0823	0.0713	-0.0678	0.0274
	Between groups	F	27.3520	44.8370	6.8040	4.9440	5.4270	5.6020
		P	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Age	Means	18~20	0.0579	0.0021	0.0119	0.1034	-0.0110	0.0816
		20~30	0.0069	0.0424	0.0040	-0.0401	-0.0042	-0.0053
		30~40	-0.1725	-0.4203	0.0866	0.1924	0.1192	-0.0513
		40~50	-0.2741	-0.4240	-0.2623	0.0114	-0.0031	-0.3115
		≥50	-0.7429	-0.5904	-0.2645	-0.3405	0.1555	-0.8001
	Between groups	F	2.1510	5.0660	0.7580	1.8200	0.2880	2.2770
		p	0.0740	0.0000	0.6350	0.1150	0.9070	0.0590
Gender	Means	Male	0.1144	0.0562	-0.0041	-0.0409	-0.0025	-0.1545
		Female	-0.1352	-0.0664	0.0049	0.0483	0.0029	0.1307
	Between groups	F	21.1990	5.0890	0.0280	2.5550	0.0100	28.2320
		p	0.0000	0.0240	0.8680	0.1010	0.9220	0.0000

30 years old have higher perceived risks for online shopping, the other consumers less than 30 years old have lower perceived cost.

- From the comparing of means between different genders, we find that male gets higher perceived value from online shopping has stronger network capability, higher perceived risk, lower perceived benefit cost than female.

CONCLUSION, DISCUSSION AND IMPLICATIONS

There are abundant research on the effect of perceived factors toward the purchase decision and the determinants of purchasing intention in online context. To date, attempts to comprehensive analysis the perceived factors on consumers' purchasing behavior and their differences between different characteristics of consumers jointly have, however, proved insufficient and have lacked depth study.

This research provides a new perspective to study the construction of purchasing behavior, which lay the foundation for further research on online shopping decision-making. Thus, we have examined such important perceived factors as antecedent variables of perceived value and the impacts for each of them on consumers' purchasing behavior. At the same time, an additional contribution of our study lies in the multi-comparing of means of consumers' perceived factors between groups with different characters of consumers.

Implications of both a theoretical and practical nature also emerge from our study. From the third-order structural equation model established in this study, we can find network capability as the first step factor has direct and indirect influences on perceived benefit, perceived cost and perceived value, has direct influences on trust, trust as the second factor has direct and indirect influences through perceived benefit, risk and cost on consumer perceived value. Our research is also empirically innovative, as it has examined differences of perceived factors among different consumer groups and has found that shopping experiences are most important control variable to distinguish the differences of the impacts of perceived factors and perceived value and they will affect consumers' purchasing behavior online. There are also some limitations in this study. As the group's resources and energy are limited, the main source of this survey data are from Shenzhen, this may affect the respondents broadly representative. In future studies, we should consider the influences of individual characteristics of the respondents such as gender and experience and analyze their different influences on consumers' purchasing decision-makings.

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