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Predicting and explaining use intention and purchasing intention in online group shopping

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Abstract

Online group shopping has emerged as a new e-commerce model and received attention in both academics and practice. Prior research focuses on investigating online group shopping mainly from the marketing discipline, and little research has tried to examine individual consumers' acceptance of online group shopping from the technology acceptance perspectives. This paper aims at investigating the drivers determining individual consumers' intention to use online group shopping as well as the relationships between the intention to use online group shopping and the intention to purchase via online group shopping websites. The research model was developed based on technology acceptance theories and extended to purchasing behaviour. The research model is empirically tested with data collected from 318 Chinese college students and analyzed using PLS. The results show that all the individuals' intention to use online group shopping are motivated by relative advantages, perceived complexity and perceived enjoyment, and their use intention is significantly related to their purchasing intention via online group shopping websites. Finally, the limitations of the current research are discussed, and the directions for further research are suggested.

Keywords: Online group shopping, use intention, purchasing intention, innovative services.

1 Introduction

With the penetration of Internet into business and people's life, e-commerce has increasingly become popular. Recently, online group shopping, as a new e-commerce model, has attracted the attention in both academics and practice. As Kauffman et al. (2010) argued online group shopping is an online retailing concept, which seeks to provide cheap services or products through leveraging the buying power of individual consumers as a group. Internet makes it possible for customers to receive accurate, timely, and inexpensive information. As a result, customers can also make comparison of product/service prices and choose the supplier with the lowest price (Gounaris et al. 2010). Online group shopping is popular among individual customers mainly because of its lower prices compared to that

offered by alternative product/service suppliers. In online group shopping, consumers can leverage the collective bargaining power to lower the prices of the product or services they are interested in, whereas suppliers can diminish their cost of recruiting customers. The goal of online group shopping is to create a win-win mechanism between consumers and suppliers in e-commerce by making each party better off (Kauffman et al. 2010).

The most popular online group shopping websites should be Groupon in USA. It has been successful in its online group shopping business, and its success has inspired many merchants in the world to develop online group shopping. In China, the emergency of online group shopping has attracted the interest of venture capitalist, the market and consumers. In 2010, the first online group shopping website, Manzuo.com, was initiated. After that, online group shopping websites boomed in China. According to the released report of Goutuan.net (2011), by September in 2011, there were about 5682 different online group shopping websites in China. Some firms involved in online group shopping section are popular in China, such as Meituan (www.meituan.com), Teambuy (www.teambuy.com.cn), Lashou (www.lashou.com), and Taobao (www.taobao.com). Online group shopping has evolved as a new e-commerce model for e-commerce companies in China. According to the report released by iResearch Consulting Group, there were about 50 million online group shopping users in China in 2010, which accounts for 12 percent of all Chinese Internet users at that time (iResearch 2011a), and one in every four Chinese Internet users (130 million) is expected to use online group shopping in 2011 (iResearch 2011b). Obviously, online group shopping has already achieved its acceptance and success in the Chinese online business market. It seems that online group shopping, as a new e-commerce model, appears to have tremendous capacity for creating e-commerce business opportunities in China (Chen et al. 2009).

The emergence of online group shopping has attracted the attention of researchers around the world. Kauffman and Wang (2001, 2002) have conducted some early work on online group shopping to explore consumer transaction behaviour in online group shopping. Following their research, Anand and Aron (2003) explored the outcomes of online group shopping and identified how to understand online group shopping performance compared to the traditional fixed-price selling mechanism. Later Kauffman et al. (2010) examine the relationships of incentive mechanisms, the fairness and consumers' participation in online group shopping. Chen et al. (2009) examined how the cooperation among bidders in online group shopping mechanism can be effectively enhanced to produce higher benefits for participants.

Prior research attempted to explain online group shopping from the marketing perspective, such as the transaction process, price mechanism, and benefits. Little research has been done in the information systems (IS) research field to explore the phenomenon, such as why consumers would like to accept online group shopping. In addition, few studies have investigated the relationship between consumers' acceptance of online group shopping and their purchasing behaviour. In this concern, this study aims at exploring the predictors determining both individual consumers' intention to use online group shopping and intention to purchase via online group shopping websites, which provides some fresh insights into both technology acceptance and online group shopping research. The research will also offer some practical guidance for online group shopping websites on their strategies in attracting consumers to use their services.

The remainder of this paper is organized as follows. Following this introduction, the research model on individual consumers' intention to use online group shopping and intention to purchase via online group shopping websites are put forward together with the research hypotheses. Then, the methodology of this study and the data collection are presented, followed by measurement validity and results from the data analysis. Finally, the findings as well as the limitations are discussed, and suggestions for further research are presented.

2 Research model and hypotheses

2.1 Relative advantages

As defined in Diffusion of Innovation Theory (DOI) (Rogers 1995), relative advantage refers to "the degree to which an innovation is perceived as better than the idea it supersedes" (Rogers 1995, p. 212). Relative advantages means that a new technology is superior to existing substitute (Bennett & Bennett 2003), and it also indicates both the cost and the benefits resulting from a new technology adoption (Rogers 1995). Prior research has found that relative advantage is the most essential factor influencing individuals' willingness to adopt new technology with empirical validation from different research contexts, such as e-learning, virtual community, mobile service and so on (Mehrtens et al. 2001; Kim et al. 2009). As regards to online group shopping, relative advantages means that individual consumers believe that using online group shopping is better than the other conventional online shopping models, such as B2C or C2C. Online group shopping provides both products and services to individual customers with heavy discounts, such as more than 50% price off. Online group shopping makes it possible for individual customers to get offer of products/services with the lowest prices and to reduce purchase cost to a great extent. It increases the benefits to individual customers in their using of online group shopping. Thus, it is expected that relative advantages will be positively associated with individuals' intention to use online group shopping. When they are aware of the relative advantage of online group shopping over conventional online shopping approaches, they will be more intended to use online group shopping. Hence, the following hypothesis is proposed:

H1: Relative advantage is associated with individuals' intention to use online group shopping.

2.2 Perceived complexity

As defined in DOI (Rogers 1995), perceived complexity refers to "the degree to which an innovation is perceived as relatively difficult to understand and use" (Rogers 1995, pp. 242). The construct complexity is similar to the construct perceived ease of use in the Technology Acceptance Model (TAM) (Davis 1989). Prior research has validated that complexity or perceived ease of use affect individuals' adoption of a new technology (i.e. Liu & Li 2010). If an innovative technology is easy but not complex to use, individuals are more likely to use the innovation. Thus, it is expected that a relationship between complexity and adoption intention may exists in the research context of online group shopping, and the following hypothesis is posited:

H2: Perceived complexity is associated with individuals' intention to use online group shopping.

2.3 Perceived enjoyment

Perceived enjoyment refers to “the extent to which the activity of using a specific system is perceived to be enjoyable in its own right, aside from any performance consequences resulting from system use” (Venkatesh 2000, p. 348). Perceived enjoyment has been defined as an intrinsic motivation for individual to use a new technology. It has been found to be a significant predictor determining individuals’ use of new technologies, especially for hedonic systems, such as mobile gaming and online gaming (Liu & Li 2011). When individual users feel that using a new technology is with fun and pleasure, they are more likely to use the new technology. Nowadays, more and more new technologies are designed with both hedonic and utilitarian purposes. Thus, individual users can experience enjoyment in their using of utilitarian systems. Ha & Stoel (2009) stated that individuals’ beliefs about shopping enjoyment play a significant role in their acceptance of online shopping. Though prior research on investigating online shopping motives suggested that the primary advantages of online shopping are related to utilitarian perspectives of online shopping, some hedonic aspects of online shopping are also found to affect individuals’ usage of online shopping, such as perceived enjoyment, such as perceived enjoyment, social experiences (Ha & Stoel 2009; Joines et al. 2003; Parsons 2002). Thus, it is expected that individual users will experience enjoyment in using online group shopping, and the perceived enjoyment in their use of online group shopping may influence their intention to use online group shopping. Hence, the following hypothesis is suggested:

H3: Perceived enjoyment is associated with individuals’ intention to use online group shopping.

2.4 Use intention and purchasing intention

In IS research, one of the main themes is users’ intention to use a new technology. However, little research has investigated the relationship between their use intention and their purchasing intention in the online environment. There is no evidence from the prior research to explain whether individual users are more likely to shopping online if they are more likely to use online shopping. The online shop managers are not provided with explanation from research that their strategies in pushing individuals’ use of their online shops can help increase online sales. In this research, we assumed that individual users are more likely to purchasing via online group shopping websites if they have higher tendencies of using online group shopping. Thus, the following hypothesis is proposed:

H4: Individuals’ intention to use online group shopping is associated with their intention to purchase via online group shopping websites.

The research model is presented in Figure 1.

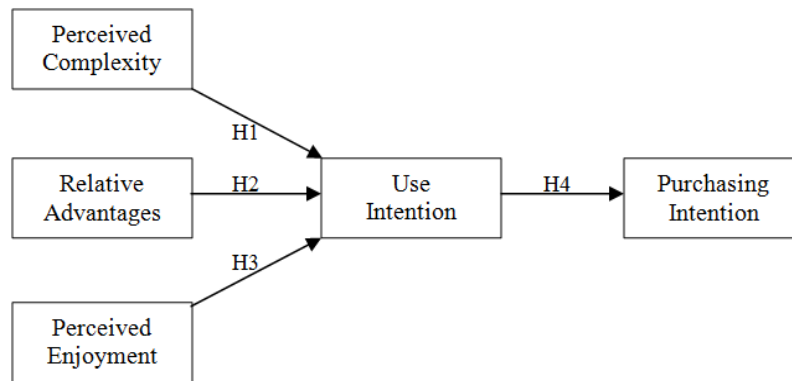


Figure 1: Research Model

3 Research Method and Results

3.1 Data collection

Survey is employed in this study to collect empirical data. The sample of the research is some students in the campus of Zhejiang Normal University. The questionnaires were distributed at the campus of Zhejiang Normal University in September 2011. The distribution of questionnaire last for two days in the campus. The respondents were provided with candies in order to please the respondents and to seduce their patience in answering the questionnaire. It costs about 3 RMB (approximately 0.5 USA) to please each respondent. The respondents were asked to response on their use of online group shopping. They were also required to recall their prior online group shopping experience and to indicate the motives for their use of online group shopping and their intention to purchase via online group shopping websites.

The constructs included in the research model were developed mainly based on the adaptation from the prior research on technology acceptance. Some modification and rewording has been conducted in order to make it fit to the research context of online group shopping. A seven-point Likert-scale ranging from strongly disagree (1) to strongly agree (7) was used to measure the proposed research items.

Totally, 389 questionnaires had been distributed, and 369 were collected. Among the 369 copies of questionnaire, 318 were acceptable and used as the basis of the research. The final sample consists of 129 males (40.6%) and 189 females (59.4%).

3.2 Measurement Validity

Partial Least Squares, in practice SmartPLS software, was employed in the current research to obtain estimates for the measurement and structural parameters in our structural equation model.

Convergent validity indicates the extent to which the measures of a construct that are theoretical related are also related in reality. Convergent validity can be evaluated by inspecting the factor loadings of the measures on their respective constructs (Chin 1998; Hulland 1999; Tenenhaus et al. 2005), the reliability of the measures can be assessed using

composite reliability (CR) and average variance extracted (AVE). In this study the factor loading are all satisfactory with the cut-off value above 0.7. The composite reliability (CR) satisfies the threshold value of 0.7 and average extracted variance (AVE) meet the threshold value of 0.5 respectively (See Table 1). The results in this study demonstrate good internal consistency, and the convergent validity and reliability of the measures in this study are supported (Fornell & Larcker 1981).

Constructs	Items	Loading	t-value
Perceived Complexity (PC) CR=0.948 AVE=0.901 I=0.891	PC1	0.955	160.909
	PC2	0.944	105.055
Relative Advantages (RA) CR=0.882 AVE=0.601 I=0.834	RA1	0.810	25.414
	RA2	0.725	21.725
	RA3	0.822	33.708
	RA4	0.768	22.547
	RA5	0.748	25.785
Perceived Enjoyment(PE) CR=0.921 AVE=0.796 I=0.872	PE1	0.887	63.229
	PE2	0.918	71.759
	PE3	0.872	42.072
Use Intention (UI) CR=0.919 AVE=0.851 I=0.826	UI1	0.912	54.829
	UI2	0.934	97.799
Purchasing intention (PI) CR=0.927 AVE=0.865 I=0.844	PI1	0.932	102.566
	PI2	0.929	80.532

Table 1: Psychometric Properties of Measures

According to Fornell and Larcker (1981), discriminant validity can be verified with the square root of the average variance extracted for each construct (Fornell & Larcker 1981). As shown in Table 2, each construct shares a greater variance with its own measures than with any other construct. The results reveal that each construct in the proposed research model is more closely related to its own measures than to those of other constructs. It meets the criteria suggested by Fornell and Larcker (1981).

	PC	RA	PE	UI	PI
PC	0.949				
RA	0.408	0.775			
PE	0.247	0.249	0.892		
UI	0.417	0.458	0.368	0.922	
PI	0.432	0.428	0.373	0.675	0.930

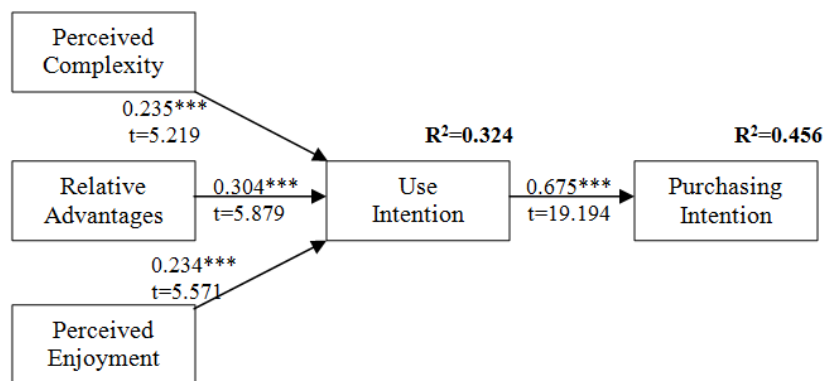
Note: The bold items on the diagonal represent the square roots of the AVE, and off-diagonal elements are the correlation estimates.

Table 2: Correlations between Constructs

3.3 Results

In this study a bootstrapping procedure was adopted to test the effects and the statistical significance of the parameters in the structural model. Figure 2 provides a graphic presentation of the research results. As shown in Figure 2, perceived complexity ($\beta=0.235$, $p<0.001$), relative advantages ($\beta=0.304$, $p<0.001$), and perceived enjoyment ($\beta=0.234$, $p<0.001$) are found to be significantly associated with individual users' intention to use online group shopping. In addition, the intention to use online group shopping is found to be positively associated with their intention to purchase via online group shopping websites. All the proposed hypotheses are supported in this study.

The proposed research model explains 32.4% of individuals' use intention and 45.6% of their purchase intention in the online group shopping context.



Note: ***: p-value<0.001

Figure 2: Structural Analysis of the Research Model

4 Discussion and Conclusions

The results in this study show that individual users' intention to use online group shopping is mainly motivated by perceived complexity, relative advantages and perceived enjoyment, and their use intention will influence their purchasing intention via online group shopping websites directly. Also there are indirect effects of perceived complexity, relative advantages and perceived enjoyment on purchasing intention.

Of the three predictor of individuals' intention to use online group shopping, relative advantages has the strongest influence on use intention, followed by perceived complexity and perceived enjoyment. The results indicate that individuals use online group shopping mainly because of its relative advantages over the conventional online shopping approaches. Perceived enjoyment is found to be a significant motivator of use intention. It suggests that the fun and pleasure perceived in using online group shopping are also important factors influencing use intention. The findings on the relationship between perceived complexity and use intention is consistent with prior findings and suggested that if individual users feel it is easy to use online group shopping, they are more likely to use online group shopping. The study results suggest that in order to increase customer base online group shopping websites should not only consider about their strategies in increasing its relative advantages compared to conventional e-commerce model, they should also take consideration of making online group shopping as easy as possible in use and enhancing the fun and pleasure in using it as well.

In addition, in this research, individuals' intention to use online group shopping is found to affect purchasing intention significantly. It indicates that motivating individuals' intention

to use online group shopping can also enhancing their purchasing intention via online group shopping. It implies that the strategies aiming at attracting online group shopping users may also help increasing their potential online group shopping sales as well. Note that an intention to use the technology doesn't guarantee the behaviour to use the online shopping sites, while the intention to use the online shopping sites doesn't necessarily lead to the actual purchase on the site (Pavlou & Fyngenson 2006). For instance, a work of Pavlou and Fyngenson (2006) investigated the relationship between intention/behavior to get product information in online shopping sites and intention/behaviour to actual purchase the product, and found very low impacts among these variables (all path $\beta < 0.3$). Some consumers may adopt online group shopping for information seeking purpose, i.e. locating a restaurant nearby, but do not necessarily make a purchase in the sites. Even if our model shows a relatively high path coefficient between technology use intention and purchasing intention, the model only explains 45.6 percent of purchasing intention. Hence, to the extent that current online shopping studies on online shopping almost exclusively focus on technology adoption intention, we call for more research attentions on purchasing intentions, considering their significant differences between two concepts.

5 Limitations and Future Research

This study has offered some valuable insight into online group shopping studies. However, this study involves a number of limitations that need to be acknowledged. First, the empirical study was conducted only in China. It is recommended to replicate the study in different nations to get international sample. In addition, the current study was conducted in the context of online group shopping. Thus, the results of this study can be generalized in the online group shopping context, but it is hard to generalize the research results to other sectors. Finally, in this study, other factors, such as perceived risks, social influence, have not included in the current research. Further research uncovering these aspects would substantially increase the understanding of user adoption of online group shopping and their purchasing behaviour via online group shopping as well. Our future research will include more variables in order to different drivers of technology acceptance intention and purchasing intention in online group shopping contexts.

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References

- Anand, K., and Aron, R. (2003) Group-buying on the web: a comparison of price discovery mechanisms. *Management Science*. 49(11), pp. 1546-1562.
- Bennett, J. and Bennett, L. (2003) A review of factors that influence the diffusion of innovation when structuring a faculty training program. *The Internet and Higher Education*. 6(1), pp. 53-63.
- Chen, J., Chen, X-L, Kauffman, R. J. and Song, X-P. (2009) Should we collude? Analyzing the benefits of bidder cooperation in online group-buying auctions. *Electronic Commerce Research and Applications*. 8(4), pp.191-202.
- Chin, W. (1998). The Partial Least Squares Approach to Structural Equation Modeling. In *Modern Business Research Methods*, Marcoulides, G.A. (Ed.), Lawrence Erlbaum Associates, Mahwah, NJ, 1998, pp. 295-336.

- Davis, F. D. (1989) Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*. 13(3), pp. 319-340.
- Fornell, C. and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18, pp. 39-50.
- Gounaris, S., Dimitriadis, S. and Stathakopoulos, V. (2010) An examination of the effects of service quality and satisfaction on customers' behavioural intentions in e-shopping. *Journal of Services Marketing*. 24(2), pp. 142-156
- Goutuan. Net. (2011) Big Tuangou events in one week: number of Tuangou websites up to 5682, available from <http://www.goutuan.net/bbs/article-14691-1.html>, 2011, (In Chinese), accessed on April 22, 2012.
- Ha, S. and Stoel, L. (2009) Consumer e-shopping acceptance: Antecedents in a technology acceptance model. *Journal of Business Research*. 62(5), pp. 565-571
- Hulland, J. (1999) Use of partial least squares (PLS) in strategic management research: a review of four recent studies. *Strategic Management Journal*. 20(2), pp. 195-204.
- iResearch, (2011a), iResearch China Online Group Shopping Research Report 2011, available from: <http://s1.lashouimg.com/need/midea/images/midea/top2011.pdf> (In Chinese), accessed on April 24, 2012.
- iResearch, (2011b), iResearch Releases May 2011 China Group Buying Websites Ranking, available from: <http://www.iresearchchina.com/view.aspx?id=9218> (in Chinese), accessed on April 24, 2012.
- Joines J. L., Scherer C. W. and Scheufele D. A. (2003) Exploring motivations for consumer web use and their implications for e-commerce. *Journal of Consumer Market*. 20(2), pp. 90-108.
- Kauffman, R. J., Lai, H. and Ho. C-H. (2010) Incentive mechanisms, fairness and participation in online group-buying auctions. *Electronic Commerce Research and Applications*. 9(3), pp. 249-262.
- Kauffman, R. J. and Wang, B. (2001) New buyers' arrival under dynamic pricing market microstructure: The case of group-buying discounts on the Internet. *Journal of Management Information Systems*. 18(2), pp. 157-188.
- Kauffman, R. J. and Wang, B. (2002) Bid together, buy together: On the efficacy of the group-buying business model in Internet-based selling. In P. B. Lowry, J. O. Cherrington, and R. R. Watson (eds.), *Handbook of Electronic Commerce in Business and Society*, CRC Press, Boca Raton, FL, 2002. pp. 99-137.
- Kim, G., Shin, B. and Lee, H. G. (2009) Understanding dynamics between initial trust and usage intentions of mobile banking. *Information Systems Journal*. 19(3), pp. 283-311.
- Liu, Y. and Li, H-X. (2011) Exploring the impact of use context on mobile hedonic services adoption: An empirical study on mobile gaming in China. *Computers in Human Behaviour*. 27(2), pp. 890-898.
- Liu, Y. and Li, H-X. (2010) Mobile internet diffusion in China: an empirical study. *Industrial Management & Data Systems*. 110(3), pp. 309-324.
- Mehrtens, J., Cragg, P. B. and Mills, A. M. (2001) A model of internet adoption by SMEs. *Information Management*. 39(3), pp. 165-176.
- Parsons A. G. (2002) Non-functional motives for online shoppers: why we click. *Journal of Consumer Market*. 19(5), pp. 380-392.

- Pavlou, P. A. and Fygenon, M. (2006). Understanding and Prediction Electronic Commerce Adoption: An Extension of the Theory of Planned Behavior. *MIS Quarterly*. 30(1), pp. 115-143.
- Rogers, E. (1995) *Diffusion of Innovations* (4th edition), The Free Press, New York.
- Tenenhaus, M., Vinzi, V.E., Chatelin, Y.-M. and Lauro, C. (2005). PLS path modeling. *Computational Statistics & Data Analysis*. 48(1), pp. 159-205.
- Venkatesh, V. (2000) Determinants of perceived ease of use: integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research*. 11(4), pp. 342-365.