

Determinants of Online Group Buying Behaviour: The Moderating Role of Informational Social Influence

(Faktor-Faktor Penentu Tingkah-Laku Pembelian Online Secara Berkumpulan: Peranan Pengaruh Maklumat Sosial Sebagai Moderator)

Tracie Chin Sook Harn

(School of Business and Economics, Universiti Malaysia Sabah)

Geoffrey Harvey Tanakinjal

(Labuan School of International Business and Finance, Universiti Malaysia Sabah)

Stephen Liason Sondoh Jr.

(School of Business and Economics, Universiti Malaysia Sabah)

Hamid Rizal

(Labuan School of International Business and Finance, Universiti Malaysia Sabah)

ABSTRACT

This study aims to develop a theoretical model to explicate online group buying behaviour. The research was based on Technology Acceptance Model (TAM) and two determinants of perceived enjoyment and informational social influences. A total of 150 usable questionnaires are collected and analysed using a multiple regression analysis to examine the strength of relationships between these variables. The results suggest perceived ease of use has no significant influence on online group purchase intention; however, perceived usefulness and perceived enjoyment completely mediate the relationship between perceived ease of use and purchase intention. Interestingly, the study indicates informational social influence has no moderating effect on determinants of purchase intention towards online group buying. The results of this study offer marketers with better insights that would help them develop effective strategies to attract online group buying users and increase sales profit.

Keywords: Online group buying; informational social influence; perceived enjoyment; technology acceptance model; Malaysia

ABSTRAK

Kajian ini membangunkan satu model-teoretikal bagi menghuraikan tingkah-laku pembelian dalam talian secara berkumpulan. Kajian yang dijalankan adalah berdasarkan kepada Model Penerimaan Teknologi (TAM) dan dua pembolehubah penentu; iaitu, persepsi keseronokan dan pengaruh maklumat sosial. Sebanyak 150 soal selidik yang berjaya dikumpulkan kemudiannya dianalisis menggunakan analisis regresi berganda untuk memeriksa kekuatan hubungan antara pembolehubah. Keputusan menunjukkan persepsi mudah digunakan tidak mempunyai pengaruh yang signifikan terhadap pembolehubah keinginan untuk membuat pembelian dalam talian secara berkumpulan; namun, pembolehubah tanggapan kegunaan dan kenikmatan didapati menjadi pengantara antara persepsi mudah digunakan dan niat pembelian. Menariknya, kajian menunjukkan pengaruh maklumat sosial tidak mempunyai kesan sebagai perantara terhadap niat pembelian dalam talian secara berkumpulan. Keputusan kajian ini menawarkan pemasar dengan pengetahuan yang lebih baik yang akan membantu mereka membangunkan strategi-strategi yang berkesan untuk menarik minat pembelian dalam talian secara berkumpulan, dan seterusnya meningkatkan jumlah jualan.

Kata kunci: Pembelian atas talian secara berkumpulan; pengaruh maklumat sosial; persepsi kenikmatan; model penerimaan teknologi; Malaysia

INTRODUCTION

The emergence of e-commerce has changed the way business is being conducted, and most consumers have started to purchase from online group buying websites. Online group buying is seen as an effective form of e-commerce that places the power of volume discounts in the hands of the consumers (Lau 2011). These group buying websites offer up to 90 percent discounts to customers on various businesses ranging from restaurants, health, beauty, products and services (Lo, Wu & Law 2012). More importantly, online group buying system

provides a win-win situation for firms that offer discount on their products and services, and the customers (Erdoğmus & Çiçek 2011).

However, little attention has been paid on consumer online group buying behaviour. With the exception of studies by Kauffman et al. (2009) and Sun, Luo and Liu (2010) on perceived trust and risk, Xie et al. (2011) on consumer intention, and Chen and Wu (2010) on motivation, the extant literature is still scant to explicate the theoretical paradigm underpinning consumer behavioural disposition in online group buying. Furthermore, majority of these extant studies focus on China and Taiwan. An

extensive review from the literature suggests that Ramayah et al. (2008) is the only study examining group buying in Malaysia. The study investigates the relationship between power bases and group-buying decisions. In brief, this study is carried out to fill in the gap by offering a better understanding on consumers group buying behaviours in Malaysia.

The group buying sites in Malaysia have started to grow in reputation. Service providers like MilkADeal, Groupon Malaysia, MyDeal.com.my, Dealmates and Everyday Coupons are among the many online companies that have been giving good discounts via electronic shopping (Emmanuel 2012). The post-acquisition by Groupon Inc. on Groupsmore (i.e. Malaysian group buying website) as part of it Asian's business expansion, results in hundreds of group buying websites popping-up hoping to get a part of the market share. Although MyDeal.com.my was the first Malaysian group buying website when it started in 2000, the group buying concept was not popular until Groupon popularised it in 2008 (Tan 2011).

In light of this void, the objectives of this study are twofold. First, the paper intends to develop a theoretical model to explicate determinants that influence consumer behaviour in online group buying. To achieve this purpose, we integrate a revised Technology Acceptance Model (TAM) and two constructs of perceived enjoyment and informational social influence to examine consumer behavioural disposition in online group buying. Because the online group buying would exert a great amount of social persuasion and interaction, the second objective of this study is to investigate the moderating role of information social influence on online group buying behaviour.

The notion of informational social influence describes influence to accept information obtained from another as evidence about reality (Deutsch & Gerard 1955). Studies suggest that informational social influence plays an important role in consumer's decision when they have limited or no knowledge of the product or service, perception of high risk in action or simply lack the interest in making decision. The inclusion of information social influence offers a better theoretical understanding of group buying behaviour. More specifically, the moderating role of information social influence provides significant novelty for the present study.

The study surveys 150 Malaysian consumers participating in online group buying. The Malaysia consumers are particularly suitable for present study. According to Asia Digital Marketing Association (2011), there are more than 17.5 million internet users in Malaysia. This figure is further estimated to increase up to 25 million by the year 2015; an Internet penetration rate of 80 percent for the 25 million Malaysian. A review by Nielson Company further indicates that Malaysian spend RM1.8 billion on Internet shopping in 2010 and the purchase is mostly on airline tickets, financial services, fashion and cosmetics in local websites while books, music and movie downloads are from foreign website (Ho 2011). Report

from the Asia Digital Marketing Association (2011) further reiterates that the main reasons why Malaysians shop online are because the ability to shop anytime they want (83%); ability to compare prices (81%); ability to save time and to easily locate and compare products (79%).

The remainder of this paper is organized in four sections. The first section explains the theoretical background and related research hypotheses of this study. The second section describes the methodological approach. The following section lay out the result and analyses for the study. Based on the findings, the final part offers discussion, implications, and limitation and possibilities for future research.

BASIC CONCEPTS, RESEARCH MODELS AND HYPOTHESES

ONLINE GROUP BUYING

Group buying is a popular e-business trend which also refers to collective buying and social buying. According to Erdoğan and Çiçek (2011), online group buying is a phenomenon that takes advantage of the influence from online marketing and social media influences. Online group buying offers discounted price if a minimum threshold of consumers is reached and the service provider may coordinate the transaction time (Xiong & Hu 2010). After the transaction is completed, customers are sent a voucher which they can use to claim their discounts at the retailer (Emmanuel 2012). There are 35 online group buying websites in Malaysia, such as, Group Malaysia, MilkADeal, ILoveDiscounts and MyDeal. Groupon Malaysia is one of the top discount websites in Malaysia and it has attracted 290,000 members. The members are mostly between 18 to 40 years of age, young professionals looking for new things to do over the weekend (Lu 2011).

USES AND GRATIFICATION THEORY AND TECHNOLOGY ACCEPTANCE MODEL

Building on theory of uses and gratification (U&G) as our theoretical support, the present study extends the application of technology acceptance model (TAM), and posits that perceived usefulness, information social influence, ease of use, and enjoyment influence consumer behavioural disposition to use online group buying. The following section discusses the theoretical linkage between these constructs and generates the corresponding research hypotheses.

The TAM is a multi-attribute model that predicts user's intention to use a technology based on their perception of user-friendliness and usefulness of the system (Davis, Bagozzi & Warshaw 1989). TAM is derived from the model of individual behaviour as posited by Ajzen and Fishbein's (1991, 1980) theory of reasoned action (TRA)

and theory of planned behaviour (TPB). There are five concepts underlying the TAM model: perceived ease of use, perceived usefulness, attitude towards use, intention to use, and actual use. TAM has been widely adopted in many researches and several studies have suggested that the model may be too parsimonious and should be extended by means of concepts (Venkatesh & Davis 2000). Therefore, an integration of other theoretical perspectives may provide a richer understanding of online group buying phenomenon.

Several studies, for example, (Venkatesh & Davis 1996) have simplified the application of TAM by removing the attitudinal variable from the model. This form of augmented TAM is also successfully applied in many studies such as Ramayah, Jantan and Ismail (2003) on the impact of perceived usefulness, perceived ease of use and perceived enjoyment on the intention to shop online; Jantan, Ramayah and Chin (2001) on personal computer acceptance; Ndubisi, Jantan and Richardson (2001) in entrepreneurs acceptance to TAM; and Venkatesh (2000) on gender differences and their role in technology acceptance and usage behaviour. The present study follows this suggestion by excluding the attitudinal construct.

According to Lee et al. (2011), the role of social influence in TAM still remains unclear in informational system research. With the growing popularity of internet as a communication medium, social influence has become important in explaining group and collective behaviour. Thus, informational social influences are included in our modified model to fill in the gap related to the effects of social influences. Similar to Nysveen, Pedersen and Thorbjørnsen (2005), the normative pressure which influences social influence represents an important determinant of consumer's intention to use mobile services.

A study by Wolfenbarger and Gilly (2001) suggest consumer shopping behaviours are classified into two main orientations of utilitarian and hedonic. Monsuwé, Dellaert and Ruyter (2004) find both utilitarian and hedonic influence consumer's motivation for online shopping. The authors indicate that motivations of "useful" and "ease of use" reflect utilitarianism, whereas "enjoyment" indicates the hedonism aspect. This notion corroborates with paradigm of uses and gratification (U&G) which indicates utilitarian motives are significantly correlated with usefulness and ease of use, while non-utilitarian motives relate with enjoyment, fun seeking and entertainment (Nysveen et al. 2005). U&G intends to identify the psychological needs that motivate individuals in the use of a particular medium to seek gratification to those needs (Ko, Cho & Roberts 2005). In another study, Huang (2008) finds perceived usefulness, ease of web use and entertainment gratification (U&G) are important predictors of e-consumer's intention to use.

PERCEIVED USEFULNESS

Davis (1989) suggests that perceived usefulness influences the behaviour of individuals. Majority of studies provide

strong empirical support to suggest perceived usefulness as a key belief for technology usage (Heijden, Verhagen & Creemers 2003). Perceived usefulness describes the degree to which a person believes that using a particular system would enhance his or her job performance (Davis 1989). A website that provides individuals functionality and convenience to access information would also offer consumers time saving and efficiency (Gefen, Karahanna & Straub 2003; Gefen & Straub 1997).

The usefulness of a website depends on various characteristics, such as search engines and providing service to consumers through the web site when they have enquiries (Kim & Song 2010). There is a positive effect on perceived usefulness when consumers trust the information provided; implying that consumers are likely to make a purchase when the information is useful for decision making process. For instance, Monsuwé et al. (2004) find perceived usefulness has a significant and positive impact on consumer's intention to buy online. This notion corroborates with Gefen et al. (2003) who indicate perceived usefulness as an important predictor of intention to use. From the preceding discussion, we develop the following hypothesis:

- H₁ Perceived usefulness positively influences purchase intention towards online group buying.

PERCEIVED EASE OF USE

Davis (1989) describes perceived ease of use as a degree where a person believes that using a particular system would be free of effort. In online shopping context, websites that are not user friendly would be daunting for consumers to shop online. Therefore, it is important for consumers that the website has properties and features such as search engines and shopping cart that makes it easy for consumers to interact with the website (Wilkerson, Bennett & Oliver 1997). However, not all consumers are computer literates. For that reason, consumers prefer sites that are easier and convenient to use.

Trying to make an online purchase requires consumers to exert effort that would entail making an actual visit, learning to familiarize, and searching for products and information from the website. Therefore, a website with a user-friendly feature would greatly influence consumer's purchasing decision (Kim & Song 2010). Based on the preceding discussion, we propose the following hypotheses:

- H₂ Perceived ease of use positively influences purchase intention towards online group buying.

From a theoretical perspective, several studies suggest that perceived ease of use indirectly influence behavioural intention via perceived usefulness. For instance, Ramayah and Ignatius (2005) indicate consumers who perceive online purchasing as free of effort would also develop a tendency to perceive online purchasing as useful. In another similar study, Ramayah et al. (2003) find that perceived usefulness mediates the relationship between

perceived ease of use and Internet usage. This notion persists in a study by Teo, Lim and Lai (1999) on Internet usage in Singapore, and Ndubisi et al. (2001) on IT usage of entrepreneurs.

- H₃ Perceived ease of use indirectly influences purchase intention towards online group buying via perceived usefulness.

PERCEIVED ENJOYMENT

Perceived enjoyment is defined as the extent to which an individual experience enjoyment or fun from using a specific system and perceived any activity involvement in using new technology to be enjoyable in its own right (Igbaria, Schiffman & Wieckowski 1994). This notion has also been suggested by Venkatesh (2000) who indicates perceived enjoyment as a pleasure of doing an activity and it is found to have a significant relationship with behavioural intention.

Previous studies suggest customers' intention to visit an online retailing site depends on its perceived playfulness (Moon & Kim 2001) (Ahn, Ryu & Han 2007). This suggestion is further supported by Chung and Tan (2005) who extend the application of TAM and confirm the importance of perceived enjoyment on actual usage within the world-wide-web context.

- H₄ Perceived enjoyment positively influences purchase intention towards online group buying.

Several studies have also suggested that perceived enjoyment as a significant indirect antecedent for consumer's perception of ease of use. For example, Ramayah et al. (2003) indicate perceived enjoyment mediates the relationship between perceived ease of use and internet usage. This has also been supported by Teo et al. (1999) in a study where perceived ease of use has been found to have an indirect effect on computer usage through perceived enjoyment. Based on the discussion, we posit the following hypothesis:

- H₅ Perceived ease of use indirectly influences purchase intention towards online group buying via perceived enjoyment.

INFORMATION SOCIAL INFLUENCE

Social influence comes in two forms: (1) subjective norms and (2) informational social influence (Bearden et al. 1986). Subjective norms refer to the perceived social pressure on an individual to perform or not to perform the behaviour, regardless of their beliefs and attitudes toward the behaviour. On the other hand, informational social group influence is the process in which people determine the successful experience of their social group with an innovation before deciding whether or not to proceed with the adoption (Ajzen 1991). More specifically, the concept of informational social influence describes "an influence to accept information obtained from another as evidence about reality" (Deutsch & Gerard 1955: 629). According

to Lee et al. (2011), informational social influence plays an important role in consumers' decision when they face difficulties with time constraints, have limited or no knowledge of the product or service, perceive high risk in action or simply, lack the interest in making decision.

In an online community, consumers decide to conform to opinions and sources of information to determine the trustworthiness of a product or service (Boush et al. 1993). Studies further suggest informational social influence significantly correlates with consumers' decision for internet shopping. Lee et al. (2011) find that informational social influence strengthens the relationship between consumers' attitude toward online shopping and their intention to shop. Based on the discussion, it is also theoretically plausible to assume informational social influence as a moderator in online group buying. For instance, Burnkrant and Cousineau (1975) find that informational social influence has a positive mediating influence on consumers' actual buying decision. Similarly, Pavlou and Fygenon (2006) discover that the decision to purchase from a website is significantly moderated by friends or information obtained online. Therefore, the following hypothesis is constructed:

- H₆ Informational social influence has a significant moderating role in online group buying.

METHODOLOGY

This study uses convenience sampling for data collection. Categorized as non-probability procedure, a convenience sampling refers to the collection of information from members of the population who are conveniently available to provide information (Sekaran & Bougie 2010). According to Sekaran and Bougie (2010), the sample size must be greater than 30 but need to be smaller than 500. Moreover, the sample size should be at least 10 times as large as the number of variables of the study (Sekaran 2003). Thus, the number of sample collected for this study is 150 in case of incomplete response or error from the returned questionnaires.

The present study specifically chooses sample respondents between 18 to 34 years old, because they are in the biggest demographic group in online spending in Malaysia (Asia Digital Marketing Association 2011). An invitation to the respondents (i.e. N = 250) to participate in the online survey is sent via email and Facebook. Several of returned responses are deleted for incomplete responses, leaving a final of 150 respondents for subsequent analyses. Majority of the respondents in this group are working with monthly income; therefore, have the required purchasing power which is relevant to this study. A survey website is developed in www.surveymonkey.com for data collection. The framework is based from the TAM model. We modify and integrate other constructs of perceived enjoyment (Moon & Kim 2001) and informational social influences (Lee et al. 2011) into our model framework. The items used to measure the variables are adapted from Davis

(1989), Venkatesh and Davis (1996), Moon and Kim (2001), Kim and Song (2010), Chen, Gillenson and Sherrell (2002), Gefen et al. (2003) and Park and Feinberg (2010). Since the questionnaire items are adopted from established sources, no pre-test is needed to validate the instruments. Respondents are required to indicate their agreement or disagreement using a 5-point Likert scale anchored at 1 (strongly disagree) to 5 (strongly agree). The measurement instruments consist of items relevant for this study. For instance, the items are modified slightly in terms of keyword usage of “online group buying” to suit the research framework of this study.

CONSTRUCT RELIABILITY: EXPLORATORY FACTOR ANALYSIS

Table 1 shows results from the exploratory factor analysis. The communalities for the 11 items are above 0.5, ranging

from .542 to .790. The results confirm that each of the constructs is unidimensional and all items that are used to measure a particular construct loaded on a single factor except for perceived enjoyment which forms another factor, becoming a 2 factor solution. Because of the semantic meaning, the study terms the new factor as “perceived concentration.” The modified conceptual framework is presented in Figure 1. The factor loading for the independent variables range from .621 to .868, factor loadings for informational social influence (ISI) and purchase intention range from .791 to .871 and .831 to .901, respectively. As illustrated in Table 1, the Cronbach’s alpha values for each factor analysis for F1(.831), F2 (.721), F3 (.780) and F4 (= .747). In Table 2 the Cronbach’s alpha for ISI factor is .754 and in Table 3 the Cronbach’s alpha for purchase intention is .822.

TABLE 1. Factor analysis of the independent variables

Items	F1	F2	F3	F4
(F1) Perceived usefulness				
Using online group buying websites would enhance my effectiveness in shopping or information seeking.	.828			
Using online group buying websites would make my shopping easier.	.814			
Using online group buying websites increases my shopping productivity.	.779			
Overall, online group buying website is very useful.	.621			
(F2) Perceived ease of use				
I find it easy to redeem the products or services from online group buying websites.		.811		
Overall, I find online group buying website easy to use.		.794		
I would find interaction with online group buying websites clear and understandable.		.640		
(F3) Perceived enjoyment				
Online group buying websites leads to my exploration.			.863	
Online group buying websites stimulates my curiosity.			.854	
(F4) Perceived concentration				
When interacting with group buying sites, I do not realize the time elapsed.				.868
When interacting with group buying websites I often forget the work I must do.				.866
Eigen Value	4.357	1.454	1.1321	1.019
% of Variance	23.776	17.751	15.523	15.326
Cronbach’s alpha	.831	.721	.780	.747

Notes: 1. Total Variance Explained = 72.38%
 2. Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .781
 3. Bartlett’s Test of Sphericity = 627.231

TABLE 2. Factor analysis of informational social influence

Items	Factor Loadings
1 I often consult other people to help me choose the best alternative available from a product.	.871
2 If I have little experience with a product or service, I often ask my friends about the product or services from online group buying websites.	.803
3 I frequently gather information from friends or reviews online about a product or service before I buy it.	.791
Eigen Value	2.030
Total Variance Explained	67.67
Measure of Sampling Adequacy	.666
Bartlett’s test of Sphericity	115.310
Significant	.00
Cronbach’s Alpha	.754

TABLE 3. Factor analysis of purchase intention

Items	Factor Loadings
1 It is likely that I will purchase products or services through online group buying websites in the near future.	.901
2 Buying products or services via online group buying websites is something I would do.	.875
3 I intend to purchase products or services through online group buying websites in the near future (i.e. next three months).	.834
4 Overall, I would use online group buying websites to buy products and services.	.831
Eigen Value	2.964
Total Variance Explained	74.10
Measure of Sampling Adequacy	.796
Bartlett's test of Sphericity	331.828
Significant	.00
Cranbach's Alpha	.822

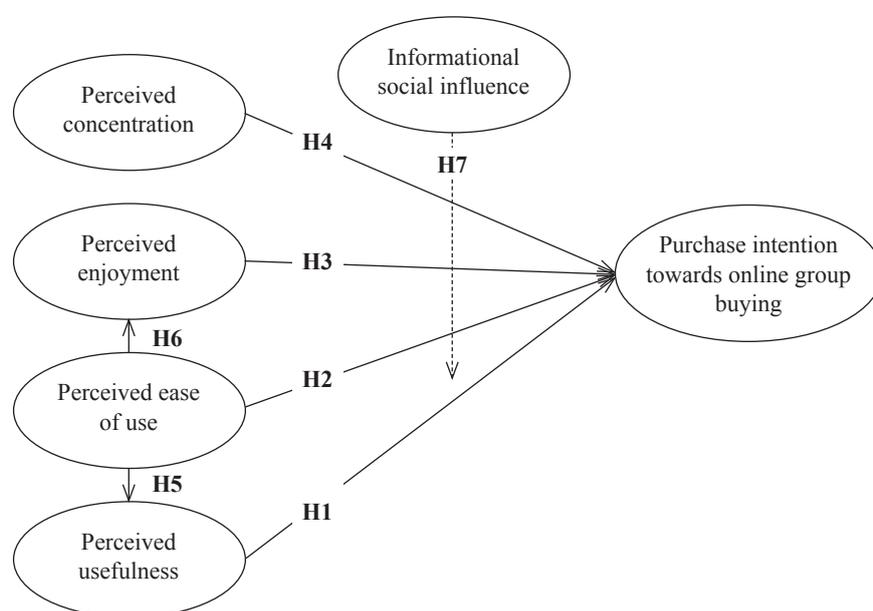


FIGURE 1. Modification of research conceptual framework

RESTATEMENT OF RESEARCH HYPOTHESES

Based on the modified conceptual framework, a restatement of hypotheses is needed. The hypotheses are specified as below:

- H₁ Perceived usefulness influences purchase intention towards online group buying.
- H₂ Perceived ease of use influences purchase intention towards online group buying.
- H₃ Perceived enjoyment influences purchase intention towards online group buying.
- H₄ Perceived concentration influences purchase intention towards online group buying.
- H₅ Perceived ease of use indirectly influences purchase intention towards online group buying via perceived usefulness.
- H₆ Perceived ease of use indirectly influences purchase intention towards online group buying via perceived enjoyment.

- H₇ Informational social influence has a significant moderating effect on factors influencing purchase intention towards online group buying.

FINDINGS

Table 4 shows the demographic profile of the respondents in this research. The majority of the respondents are male (53%), within the range of 25 to 34 years old (55%), and majority of our respondents are students and highly-educated (71% has a college degree or higher). The university students are deemed appropriate as they are more likely to be homogeneous in terms of demographic characteristics and to have similar consumption behaviours. This permits more precise predictions and provides a stronger test of theory.

TABLE 4. Respondent's profile

Demographic Variables	Categories	Frequency	Percentage
Gender	Male	80	53.3
	Female	70	46.7
Age	Below 18	1	.7
	18-24	66	44.0
	25-34	83	55.3
Educational Qualification	Secondary school	4	2.7
	College Diploma	25	16.7
	Bachelor's degree	107	71.3
	Master's degree	13	8.7
	Doctoral degree	1	.7
Employment Status	Public Sector Employee	10	6.7
	Private Sector Employee	71	47.3
	Self Employed	3	2.0
	Unemployed	5	3.3
	Housewife	2	1.3
	Student	59	39.3
Monthly Income	Less than RM2000	78	52.0
	RM2000-RM2999	43	28.7
	RM3000-RM3999	21	14.0
	RM3000-RM4999	3	2.0
	RM5000 above	5	3.3

TABLE 5. Person correlations matrix (N = 150)

Variables	1	2	3	4	5
1. Perceived Enjoyment	1				
2. Perceived Concentration	.229**	1			
3. Perceived Ease of Use	.368**	.268**	1		
4. Perceived Usefulness	.451**	.249**	.541**	1	
5. Purchase Intention	.470**	.148	.374**	.610**	1

Note: Numbers in the columns' headings correspond to the respective row headings

The results in Table 5 suggest that there is a positive correlation between the independent variables and the dependent variable. The result of hierarchical regression analysis is presented in Table 6. The result from the first model, where mediator is excluded, indicates perceived ease of use ($\beta = .374, p < .001$) positively influences purchase intention. However, the beta coefficient value decreases after the inclusion of the mediators (perceived usefulness and perceived enjoyment) in the model 2. From the analysis, when the mediators are added in the second model, the effect of perceived ease of use ($\beta = .019, p > .05$) becomes insignificant; this suggests that a full mediator relationship is present. This shows perceived ease of use positively affects purchase intention towards online group buying indirectly through perceived usefulness. Similarly, perceived ease of use also positively affects purchase intention indirectly through perceived enjoyment. The

analysis shows that consumers' purchase intention towards online group buying website is strongly influenced by perceived usefulness followed by perceived enjoyment. The usefulness of the online group buying website has shown to be the main motivator in consumer's purchase intention. Online group buying websites should take into consideration to make online group buying website as easy to use as possible and at the same time enhance enjoyment in using it. Moreover, the present study shed some insight on consumers' acceptance towards group buying websites. The study also indicates that motivating individuals' perception of the website can enhance their purchasing intention towards online group buying websites. The information of consumers' motivating drive would enable marketers and group buying websites to build effective strategies to attract online group buying users and increase sales profit. Thus, H₂ and H₃ are supported.

TABLE 6. Hierarchical regression analysis on the mediating variables

Variables	Std. beta without mediator (Model 1)	Std. beta with mediator (Model 2)	Result
Independent Variable:			
Perceived ease of use	.374**	.019	full mediation
Mediator:			
Perceived usefulness		.491 **	
Perceived enjoyment		.242 **	
R ²	.140	.421	
Adjusted R ²	.134	.409	
R ² change	.140	.281	
F change	24.047**	35.402**	

Note: Dependent variable is purchase intention. Significant levels: **p < 0.01, *p < 0.05

As illustrated in Table 7, the analysis suggests that there is no moderating effect of informational social influence on independent variables (i.e. perceived usefulness, perceived ease of use, perceived enjoyment, and perceived concentration) and purchase intention towards online group buying. In the first model only two

variables: perceived usefulness ($\beta = .444$, $p < .001$) and perceived enjoyment ($\beta = .240$, $p < .001$) significantly influence purchase intention. On the contrary, the second and third model show no significance at $p > 0.05$. Thus, H_4 is rejected. Table 8 shows the summary of hypotheses results.

TABLE 7. Moderating effect of informational social influence

Variables	Std. beta (Model 1)	Std. beta (Model 2)	Std. beta (Model 3)
Independent Variables:			
Perceived usefulness	.444**	.444**	1.286
Perceived ease of use	.044	.044	-.526
Perceived enjoyment	.240**	.241**	-.692
Perceived concentration	-.005	-.005	.812
Moderator:			
Informational social influence		-0.03	-.133
Interaction Terms:			
Informational social influence x Perceived usefulness			-1.238
Informational social influence x Perceived ease of use			.906
Informational social influence x Perceived enjoyment			1.400
Informational social influence x Perceived concentration			-.996
R ²	.625	.625	.645
Adjusted R ²	.367	.361	.364
R ² change	.391	.391	.417
	16.674**	.001	1.095

Note: Dependent variable is purchase intention. Significant levels: **p < 0.01, *p < 0.05

TABLE 8. Summary of results

Hypothesis	Relationship	Result	Description
H1	PU → PIOGB	supported	positive relationship
H2	PEOU → PIOGB	not supported	-
H3	PEJ → PIOGB	supported	positive relationship
H4	PC → PIOGB	not supported	-
H5	PEOU → PU → PIOGB	supported	complete mediation
H6	PEOU → PEJ → PIOGB	supported	complete mediation
H7	ISF moderating effect	not supported	-

Note: PU = perceived usefulness, PEOU = perceived ease of use, PEJ = perceived enjoyment, PC = perceived concentration, ISF = informational social influence, PIOGB = purchase intention towards online group buying

DISCUSSION

The factor analysis produces two-factor loading solution, which is also similar in a study by Ramayah et al. (2003) on the impact of the motivation variables towards internet usage in Malaysia. The new factor matches Moon and Kim's (2001) description of "concentration." The authors initially describe concentration as the extent to which the person loses self-consciousness and becomes absorbed in the activity. Based on the semantic meaning, we termed the new factor as "perceived concentration."

The findings suggest perceived usefulness and perceived enjoyment positively influence consumers' purchase intention towards online group buying. Specifically, the results imply that consumers are making online purchase via online group buying because it is considered as very useful and entertaining. Perhaps, the respondents feel online group buying as useful because buying in group is practically more secure and cheaper. Likewise, the significant of perceived enjoyment on purchase intention suggest that consumers are also enjoying the interaction with others which are offered by the online group buying.

Interestingly, both determinants of perceived ease of use and perceived concentration are not a significant antecedent of consumers purchase intention towards online group buying. Perhaps, since majority of respondents are internet savvy, the determinant dictated by the ease of use to manoeuvre the interface of online group buying has no longer been considered as an important factor for purchase intention. Likewise, because most of the time making a purchase via online group buying would entail a group of consumers with similar interest, an individual might relies on others to make the best decision; thus, contributing to the insignificant of perceived concentration on purchase intention. The insignificant relationship of perceived ease of use on purchase intention offers further validation for Heijden and Verhagen (2004) who suggest usefulness and enjoyment may influence one's attitude in using a technology more strongly than by ease of use.

The analysis shows both determinants of perceived usefulness and perceived enjoyment fully mediate the relationship between perceived ease of use and purchase intention. This finding is consistent with the previous study by Ramayah et al. (2003) on the mediation of perceived usefulness which is also supported in previous findings by Teo et al. (1999) on internet usage in Singapore and Ndubisi et al. (2001) on IT usage of entrepreneurs.

However, the final research hypothesis is not supported (H_4); implying that there is no moderating effect by informational social influence. Perhaps, consumers do not rely on other sources of information when making an online purchasing. The result is consistent with a study by Ramayah et al. (2003) on buyers' intention towards buying counterfeit CDs. One possible explanation for this result is based on the trust that a group has developed within their members. Members in a group would trust each other more than what is being fed in the internet as

a source of information when it comes with online group purchasing. Another analogy that can be used is "herd instinct" whereby human in a group will follow and trust the decision made as a group without refereeing to other sources of information because they are confident in their group's decision making capabilities.

From the conceptual perspective, the present study offers credence for Davis et al. (1989) technology acceptance model, which suggests a strong direct link between perceived usefulness and intention. The data analysis for the present study suggests perceived usefulness has the strongest influence on purchase intention as compared to other motivation drivers. This finding suggests that consumers find using online group buying to be useful and this influences their purchase intention.

IMPLICATIONS

This study offers important theoretical and managerial implications for e-marketers, merchants and scholars. The study indicates that motivating individuals' perception of usefulness and enjoyment can enhance their purchasing intention towards online group buying. Online group buying marketers should consider embedding more enjoyment elements in their offering. For instance, providing more discount values on monthly basis could offer consumers with sense of enjoyment. Marketing managers could also try to embed certain amount of rich content media to make the site looks more fun and entertaining (Chang, Rizal & Amin 2013). The information on consumer drivers would enable marketers and group buying websites to build effective strategies to attract online group buying users and increase sales profit. Correspondingly, the finding contributes to fill the current scant gaps of research on online group buying in the Malaysian context. Income inevitably plays an important role in any form of purchase. For the present study, even though majority of the respondents earn less than RM2,000 monthly income, the context of purchase in this study is group online buying where consumers buy in groups to get bigger discounts (i.e. up to 85% discount) by pulling their resources as a group.

LIMITATIONS AND FUTURE RESEARCH

Although the study makes essential contributions to the literature, several caveats for the study should be acknowledged. First, the sample is collected using respondents from Malaysia. Therefore, generalizing the results should not be done due to the small sample being used in this study and results from this study should be used with caution. Future studies need to extend the present investigation by including other online consumers from different regions and countries, to validate our theoretical model. Second, the present study uses informational social influence as a moderator, which also suggests the possibility for this construct to be used as a mediator. Third, these determinants are only tested using multiple

regression analysis. This warrants for statistical testing with better explanatory power and more advance statistical technique such as the structural equation modelling.

REFERENCES

- Ahn, T., Ryu, S. & Han, I. 2007. The impact of web quality and playfulness on user acceptance of online retailing. *Information and Management* 44(3): 263-275.
- Ajzen, I. 1991. The theory of planned behavior. *Organizational Behaviour and Human Decision Processes* 50: 179-211.
- Ajzen, I. & Fishbein, M. 1980. *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Asia Digital Marketing Association. 2011. Asia Pacific Digital Marketing Yearbook 2011. Available at <http://www.asiadigitalmarketingyearbook.com/>
- Bearden, W.O., Calcich, S.E., Netemeyer, R. & Teel, J.E. 1986. An exploratory investigation of consumer innovativeness and interpersonal influences. *Advances in Consumer Research* 13(1): 77-82.
- Boush, D.M., Kim, C.H., Kahle, L.R. & Batra, R. 1993. Cynicism and conformity as correlates of trust in product information sources. *Journal of Current Issues & Research in Advertising* 5(2): 71-79.
- Burnkrant, R.E. & Cousineau, A. 1975. Informational and normative social influence in buyer behavior. *Journal of Consumer Research* 2(3): 206-215.
- Chang, H.H., Rizal, H. & Amin, H. 2013. The determinants of consumer behavior towards email advertisement. *Internet Research* 23(3): 316-337.
- Chen, L.D., Gillenson, M.L. & Sherrell, D.L. 2002. Enticing online consumers: An extended technology acceptance perspective. *Information & Management* 39(8): 705-719.
- Chen, W.Y. & Wu, P.H. 2010. *Factors affecting consumer's motivation in online group buying*. Paper presented at the Sixth International Conference on Intelligent Information Hiding and Multimedia Signal Processing (IIH-MSP), Darmstadt, Germany
- Chung, J. & Tan, F. 2005. *Validating the extended technology acceptance model: Perceived playfulness*. Paper presented at the Australasian Conferences on Information Systems (ACIS 2005) Proceedings, Perth, Australia.
- Davis, F.D. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly* 13(3): 319-340.
- Davis, F.D., Bagozzi, R.P. & Warshaw, P.R. 1989. User acceptance of computer technology: A comparison of two theoretical models. *Management Science* 35(8): 982-1003.
- Deutsch, M. & Gerard, H.B. 1955. A study of normative and informational social influences upon individual judgment. *Journal of Abnormal and Social Psychology* 51: 629-636.
- Emmanuel, M. 2012. Group-buying sites in Malaysia gaining visibility. *New Straits Times*. Available at http://www.btimes.com.my/Current_News/BTIMES/articles/mvie-2/Article/
- Erdoğan, I.E. & Çiçek, M. 2011. Online group buying: What is there for the consumers? *Procedia – Social and Behavioral Sciences* 24: 308-316.
- Gefen, D., Karahanna, E. & Straub, D.W. 2003. Trust and TAM in online shopping: An integrated model. *MIS Quarterly* 27(1): 51-90.
- Gefen, D. & Straub, D.W. 1997. Gender differences in the perception and use of e-mail: An extension to the technology acceptance model. *MIS Quarterly* 21(4): 389-400.
- Heijden, H.V.D., Verhagen, T. & Creemers, M. 2003. Understanding online purchase intentions: Contributions from technology and trust perspectives. *European Journal of Information Systems* 12: 41-48.
- Heijden, V.D. & Verhagen, T. 2004. Online store image: Conceptual foundation and empirical measurement. *Information and Management* 41(5): 609-617.
- Ho, S. 2011. Online shopping trend rising in Malaysians, RM1.8bil spent in 2010. Available at <http://thestar.com.my/news/story.asp?file=/2011/4/21/nation/20110421190449&sec=nation>
- Huang, E. 2008. Use and gratification in e-commerce. *Internet Research* 18(4): 405-426.
- Igbaria, M., Schiffman, S.J. & Wiecekowsky, T.J. 1994. The respective roles of perceived usefulness and perceived fun in the acceptance of microcomputer technology. *Behaviour & Information Technology* 13(6): 349-361.
- Jantan, M., Ramayah, T. & Chin, W.W. 2001. Personal computer acceptance by small and medium sized companies evidence from Malaysia. *Journal of Management and Business* 3(1): 1-14.
- Kauffman, R.J., Lai, H., Lin, H.C. & Chang, Y.S. 2009. *Do textual comments and existing orders affect consumer participation in online group-buying?* Paper presented at the 42nd Hawaii International Conference on System Sciences.
- Kim, H.K. & Song, J. 2010. The quality of word-of-mouth in the online shopping mall. *Journal of Research in Interactive Marketing* 4(4): 376-390.
- Ko, H., Cho, C.H. & Roberts, M.S. 2005. Internet uses and gratification. *Journal of Advertising* 34(2): 57-70.
- Lau, E.K.W. 2011. Adoption of online group buying. *European Journal of Management* 11(4): 54.
- Lee, M.K.O., Shi, N., Cheung, C.M.K., Lim, K.H. & Sia, C.L. 2011. Consumer's decision to shop online: The moderating role of positive informational social influence. *Information & Management* 48(6): 185-191.
- Lo, A., Wu, J. & Law, R. 2012. *A study of hospitality and travel-related deals on Hong Kong group-buying websites*. Paper presented at the Information and Communication Technologies in Tourism 2012, 25-27 January, Helsingborg, Sweden.
- Lu, A. 2011. The deal is on! Available at <http://thestar.com.my/metro/story.asp?file=/2011/5/1/sundaymetro/8576472>
- Monswé, T.P.Y., Dellaert, B.G.C. & Ruyter, K.D. 2004. What drives consumers to shop online? A literature review. *International Journal of Service Industry Management* 15(1): 102-121.
- Moon, J.W. & Kim, Y.G. 2001. Extending the tam for a world-wide-web context. *Information & Management* 38(4): 217-230.
- Ndubisi, N.O., Jantan, M. & Richardson, S. 2001. Is the technology acceptance model valid for entrepreneurs? Model testing and examining usage determinants. *Asian Academy of Management Journal* 6(2): 31-54.
- Nysveen, H., Pedersen, P.E. & Thorbjørnsen, H. 2005. Intentions to use mobile services: Antecedents and cross-service comparisons. *Journal of the Academy of Marketing Science* 33(3): 330-346.

- Park, J. & Feinberg, R. 2010. E-formity: Consumer conformity behaviour in virtual communities. *Journal of Research in Interactive Marketing* 4(3): 197-213.
- Pavlou, P.A. & Fygenon, M. 2006. Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *MIS Quarterly* 30(1): 115-143.
- Ramayah, T., Aizzat, M.N., Mohd Nasser, M.N. & Letchumanan, R. 2008. The relationship between power bases and group-buying decisions in Malaysia: Does it vary according to viscosity, time constraint, and perceived risk? *Journal of Global Business Advancement* 1(2/3): 289-308.
- Ramayah, T. & Ignatius, J. 2005. Impact of perceived usefulness, perceived ease of use and perceived enjoyment on intention to shop online. *ICFAI Journal of Systems Management* 3(3): 36-51.
- Ramayah, T., Jantan, M. & Ismail, N. 2003. *Impact of intrinsic and extrinsic motivation on internet usage in Malaysia*. Paper presented at the The 12th International Conference on Management of Technology, 13-15 May, Nancy, France.
- Ramayah, T., Osman, M., Jantan, M., Chow, J.L.W. & Nasirin, S. 2003. *Counterfeit music cds: social and personality influences, demographics, attitudes and purchase intention: Some insights from Malaysia*. Paper presented at the Proceedings of the 2nd European Conference on Research Methods in Business and Management, 20-21 March, Reading University, United Kingdom.
- Sekaran, U. 2003. *Research Methods for Business*. 4th edition. Hoboken, NJ: John Wiley & Sons.
- Sekaran, U. & Bougie, R. 2010. *Research Methods for Business: A Skill Building Approach*. UK: John Wiley & Sons.
- Sun, P.-C., Luo, J.J. & Liu, Y.L. 2010. *Perceived risk and trust in online group buying context*. Paper presented at the 3rd International Conference on Information Management, Innovation Management and Industrial Engineering, 26-28 November, Kunming, China.
- Tan, K. 2011. Group buying gains momentum in Malaysia. Available at <http://www.theedgemaalaysia.com/management/185522-group-buying-gains-momentum-in-malaysia-.html>
- Teo, T.S.H., Lim, V.K.G. & Lai, R.Y.C. 1999. Intrinsic and extrinsic motivation in Internet usage. *Omega: The International Journal of Management Science* 27(1): 25-37.
- 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): 342-365.
- Venkatesh, V. & Davis, F.D. 1996. A model of the antecedents of perceived ease of use: Development and test. *Decision Sciences* 27(3): 451-481.
- Venkatesh, V. & Davis, F.D. 2000. A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science* 46(2): 186-204.
- Wilkerson, G.L., Bennett, L.T. & Oliver, K.M. 1997. Evaluation criteria and indicators of quality for Internet resources. *Educational Technology* 37(3): 52-58.
- Wolfenbarger, M. & Gilly, M.C. 2001. Shopping online for freedom, control and fun. *California Management Review* 43(2): 34-55.
- Xie, G., Zhu, J., Lu, Q. & Xu, S. 2011. Influencing factors of consumer intention towards web group buying. *Journal of Hospitality and Tourism Technology* 1(3): 1397-1401.
- Xiong, L. & Hu, C. 2010. Harness the power of viral marketing in hotel industry: A network discount strategy. *Journal of Hospitality and Tourism Technology* 1(3): 234-244.

Tracie Chin Sook Harn
 School of Business and Economics
 Universiti Malaysia Sabah
 88400 Jalan UMS, Kota Kinabalu.
 Sabah, MALAYSIA
 E-Mail: vivaparacomer@gmail.com

Geoffrey Harvey Tanakinjal
 Labuan School of International Business and Finance
 Universiti Malaysia Sabah
 Labuan International Campus
 Jalan Sungai Pagar, 87000 Wilayah Persekutuan Labuan
 Sabah, MALAYSIA
 E-Mail: geoffrey@ums.edu.my

Stephen Liason Sondoh Jr.
 School of Business and Economics
 Universiti Malaysia Sabah
 88400 Jalan UMS, Kota Kinabalu
 Sabah, MALAYSIA
 E-Mail: jude@ums.edu.my

Hamid Rizal (corresponding author)
 Labuan School of International Business and Finance
 Universiti Malaysia Sabah
 Labuan International Campus
 Jalan Sungai Pagar, 87000 Wilayah Persekutuan Labuan
 Sabah, MALAYSIA
 E-Mail: ejalrizal@yahoo.co.uk

