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Understanding Group-Buying Websites Continuous Use Behavior: A Use and Gratifications Theory Perspective

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The success of online shopping depends on customers' revisits and repurchases. Previous studies related to online group-buying mainly focused on the effects of social and economic factors on the customer's usage of online group-buying websites; however, no research has discussed the effect of psychological motivations on this issue. This study proposes a theoretical model by integrating the information system continuance model (ISCM) and uses and gratifications theory (UGT) to test the factors affecting repurchase intention and continuous revisits in online group-buying. Data for this study were collected from 310 Taiwanese online group-buying shoppers who had experience of online shopping. The results show that satisfaction is an effective predictor of repurchase intention and continuous revisits, whereas entertainment, passing time, information seeking, and confirmation are significant antecedents of satisfaction. Our results report that confirmation has a positive effect on information usefulness, whereas information usefulness has a positive influence on continuous revisits. This study makes noticeable contributions to the literature on UGT and ISCM. The findings may help both academics and proprietors gain insights into how to motivate revisit and repurchase intentions in an

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online group-buying context.

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1 Introduction

Technological progress is driving the changes in business models. In the online shopping market, the consumer's purchasing model is changing from an individual purchase to a group-buying model in order to find a good bargain. Ever since Groupon's group-buying website was established in 2008, online group-buying has become a modern trend (Shiau and Luo, 2012). Complete product categories and group-buying enable consumers to purchase target products at reasonable prices. Meanwhile, group-buying brings the excitement associated with time and quantity restrictions as well as the satisfaction with discovering new products and curiosity aroused from finding new brands. Some factors such as low prices for group-buying, comprehensive product lines, convenience and the excitement associated with organizing group-buying teams have made online group-buying a new e-business model. According to investigative reports from the Market Intelligence and Consulting Institute (MIC), one of the leading organizations for providing an abundance of professional information on Internet demographics and trends in Taiwan, 35.3% of customers shopped via online group-buying in 2012. The total amount of money spent on online group-buying was higher than that spent at online auctions, and online group-buying has now become one of the top 3 online shopping models (Cheng, 2012). In 2013, ARO/comScore indicated that users of online buying websites exceed 1.99 million in Taiwan (ARO/comScore, 2013). This trend shows that the global online buying market is growing rapidly.

Despite the sustained growth of interest in online group-buying, customers' loyalty in the online context is relatively low (Cheng and Huang, 2013). The retention of customers has become an important issue for online shopping proprietors to consider (Alraimi *et al*., 2015; Hsu *et al*., 2014, 2015; Lin *et al*., 2012). In this study, Bhattacherjee's (2001a) information system continuance model (ISCM) is applied to explore the determinants of revisit intention and repurchase

intention in relation to online group-buying websites. By integrating the literature on the ISCM (e.g., Alraimi *et al*., 2015; Kim, 2011; Lin *et al*., 2012) and online shopping (e.g., Hsu *et al*., 2014, 2015; Lin and Lekhawipat, 2014), we argue that perceived usefulness in the ISCM is replaced by information usefulness to reflect customers' perceptions regarding the information quality in an online group-buying context, and the viewpoint of psychological motivations in uses and gratifications theory (UGT) (Alhabash *et al*., 2014; Cha, 2014; Cheung and Lee , 2009; Ku *et al*., 2013; Lim and Ting, 2012; Rosengren, 1974) can be used to reflect customers' perceptions about intrinsic factors (Hsu *et al*., 2015).

Rubin (1994) suggested that UGT be applied to explain and understand the reasons why people use media to satisfy their internal demands. UGT also posits that users' motivations are triggered by their individual demands (Rosengren, 1974). Motivations constitute an important factor in promoting individuals' behavioral intention (Park, 2010; Joo and Sang, 2013). Cheung and Lee (2009) found that UGT is capable of explaining why customers select certain media and what are the psychological factors behind their choices. Stafford *et al*. (2004) stated that UGT is able to explain the continued usage of chosen media. Liu *et al*. (2010) combined UGT with the ISCM in exploring the customer's intention in continuing to use Twitter. Therefore, we suggest that applying UGT in examining the customer's psychological motivations for engaging in online group-buying is adequate.

To achieve long-term success and profit in a competitive environment, it is important to conduct a study on the post-adoption of group-buying websites so as to understand the factors influencing repurchase intention and continued revisits in regard to online group-buying websites (Liu *et al*., 2010). Previous studies related to online group-buying subjects mainly focused on the effects of social and economic factors on the customer's usage of online group-buying websites. However, no research has discussed the effect of psychological motivations on this issue. Thus, this study proposes a theoretical model by integrating the information system continuance model (ISCM) with uses and gratifications theory (UGT) to test the factors affecting the repurchase and revisit intentions in online group-buying. This study considers that the findings of this study may help both academics and proprietors gain insights into how to stimulate customers' repurchase and revisit intentions in relation to online group-buying websites. The remainder of

this study is organized in the following way. The second section includes a review of the ISCM and UGT. The development of hypotheses is detailed in Section 3. In the fourth section, the method used to examine the proposed model is introduced. Finally, the research results and implications are presented and discussed.

2 Theoretical Background

2.1 Information System Continuance Model (ISCM)

The ISCM developed by Bhattacherjee (2001a) used three factors in predicting users' intention in continuous use, including satisfaction with the information system, confirmation, and perceived usefulness (see Figure 1). LaTour and Peat (1980) proposed that consumer experience is an important factor affecting consumer expectations, and this argument points to what the Expectation Confirmation Theory (ECT) lacks. Confirmation results from a process of comparison. Consumers produce a sense of satisfaction if one's perceived value meets or exceed one's own expectations. In other words, the consumers' confirmation has a positive impact on satisfaction, and satisfaction also has a positive impact on the consumers' intention to continue to use the information technology.

Based on the concept of the ISCM, users' expectations regarding confirmation have a positive impact on perceived usefulness, which will be adjusted through confirmation experiences especially when the user's perceived usefulness is incorrect at the initial stage due to the uncertainty surrounding his/her expectations. In addition, this model also deems that a user's satisfaction with an information system is dependent on confirmation and information usefulness. Satisfaction is defined as a sense of contentment that arises from an actual experience in relation to an expected experience (Hernon and Whitman, 2001). Confirmation depends on the extent to which these expectations are met during the initial service experience (Bhattacherjee, 2001a). Information usefulness here depends on "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989). Therefore, both satisfaction and information usefulness are hypothesized as being predicted by consumers' confirmation of sales, service, and marketing expectations (Bhattacherjee, 2001a).

Bhattacherjee (2001a) pointed out that a user will update his/her expectations of the information system by referring to his/her experiences of use, and through the process of comparing practical operations and expectations arrive at a result. Hence, continuing to revisit refers to an individual's intention to continue participating in online group-buying websites after having previously decided to participate (Park, 2014). Repurchase intention refers to the subjective probability that an individual will continue to purchase products from the group-buying websites in the future (Chiu *et al*., 2009). If such results meet or exceed expectations, they will have a positive impact on satisfaction. Moreover, perceived usefulness is then adopted as a measuring indicator and a reference point for comparison with confirmation. Perceived usefulness has a positive impact on confirmation resulting from using the information system. In other words, if one obtains more usefulness in the course of operation, one's satisfaction towards the system will be increased (Bhattacherjee, 2001a). Therefore, this model proposes that satisfaction towards the information system will exert a positive effect on an individual's intention to continue to use that system. The relevant studies for the ISCM are summarized in Table 1 below.

Table 1: Summary of Literature with ISCM Research (2010-2015)

Context	Studies	Variables
Twitter	Liu *et al*., 2010	Continuance intention, user satisfaction, content gratification, social gratification, process gratification, technology gratification
Mobile services	Zhou, 2011	Expectation confirmation, perceived ease of use, perceived usefulness, usage cost, users' satisfaction, post-adoption
Online group-buying	Cheng and Huang, 2013	Professional e-WOM (Electronic word-of-mouth), experiential e-WOM, structural embeddedness, relational embeddedness, system quality attitude,
	Hsu *et al*., 2014	Reputation of website, perceived size of website, reputation of sellers, perceived size of sellers, trust in website, trust in sellers, perceived quality of
Online shopping experience	Lin and Lekhawipat, 2014	Online shopping experience, online shopping habits, customer satisfaction, adjusted expectations, Online repurchase intention
Social network sites	Pan *et al*., 2014	Continuance intension, satisfaction, perceived social network, perceived trust, perceived shared language, honesty confirmation of self-disclosure
Massive open online courses (MOOCs)	Alraimi *et al*., 2015	Perceived usefulness, confirmation, satisfaction, IS continuance intention

Continued usage is the key factor in the prolonged success of usage of

information systems, and not the initial acceptance. Reichheld and Sasser (1990) stated that reducing the customer turnover rate by 5% may increase profits by between 25% and 85%. Thus exploring the customer's intention to continue using a system is crucial for online group-buying proprietors. In an online shopping context, initial adoption refers to a customer's acquisition and there is the possibility of converting potential users into actual users, while continued usage refers to customer retention and the possibility of converting existing users into faithful users. During the continued usage phase, users have more direct knowledge of group-buying websites, based on which they decide whether to continue or discontinue their usage of online group-buying websites. Moreover, existing studies on continued usage always focus on a behavioral variable, namely, continued usage, and neglect other behavioral consequences such as recommendation and grievance (Zhou, 2011). Kim and Son (2009) indicated that online services users' post-adoption behavior includes four factors: word-of-mouth, usage intention, willingness to pay and inattentiveness to alternatives. In our context, this research will investigate the users' post-adoption behavior that includes two constructs: the repurchase intention and revisit intention.

2.2 Uses and Gratifications Theory (UGT)

Originally developed from mass communications research as a paradigm to study consumer motivations for media usage and access, UGT focuses on why consumers turn to the media to gratify their social and psychological needs. Katz *et al*. (1974) thought that the major points between readers/listeners and media were voluntariness and selectiveness, and that the research subject should be focused on "What do people do with media?" and not on "What do media do to people?" Rubin (1994) suggested that UGT be applied to explain and understand the reasons why people use media to satisfy their internal demands. UGT also posits that users' motivations are triggered by their individual demands (Rosengren, 1974); motivations exert an important role in facilitating individuals' behavioral intention and actual media usage (Park, 2010).

It is important to note that Internet communication has in some ways

invalidated the traditional sender-receiver mode, which makes using UGT even more relevant to online media. Users can select online any media they wish to use with a simple click of the mouse, and they can both send and receive messages simultaneously through media such as group-buying forums (Chen, 2011). UGT has successfully been applied to a wide range of new media and communication technologies. The relevant studies in regard to the uses and gratifications theory are summarized in Table 2 below.

Table 2: Literature on Uses and Gratifications Theory (2010-2015)

Context	Studies	Variables
Blogging	Hollenbaugh, 2010	Loneliness, disclosiveness, potential audience, target audience, blogging motives, self-disclosure dimensions, demographic and descriptive information
Online games	Wu *et al*., 2010	Gratifications, presence, service mechanisms, continuance motivation, proactive stickiness
VoIP phone	Park, 2010	Internet self-efficacy, perceived cost-effectiveness, perceived quality, system functions, motivations, perceived ease of use, perceived usefulness, actual system use
Twitter	Chen, 2011	Perceived needs, personal innovativeness, perceived popularity, perceived characteristics, usage
Web-based information service	Luo *et al*., 2011	Perceived ease of use, perceived usefulness, perceived enjoyment, attitude towards use, behavioral intention, behavioral usage, interpersonal utility, convenience, passing time, entertainment, information seeking
	Luo and Remus, 2014	Perceived ease of use, perceived usefulness, behavioral intention, behavioral usage, entertainment, satisfaction
Online shopping	Lim and Ting, 2012	Entertainment gratification, informativeness gratification, web irritation, attitude towards online shopping, intention to shop online
Mobile content	Chua *et al*., 2012	Leisure, access, self, socialization, relationship maintenance, information resources/services, information quality, socialization
News sharing	Lee and Ma, 2012	Information seeking, socializing, entertainment, status seeking, prior social media sharing experience, intention to share news
Smartphone usage	Joo and Sang, 2013	Motivation for ritualized use, motivation for instrumental use, perceived usefulness, perceived ease of use, intention to use
Microblogs	Mo and Leung, 2014	Social need, convenience need, content need, process need, strategic performance, competence, bridging social capital, bonding social capital
Stickiness to social networking sites	Wei *et al*., 2014	Network externalities, intention to play, individual gratifications, time flexibility
Facebook	Alhabash *et al*., 2014	Information sharing, self-documentation, socialization, interaction, entertainment, escapism, self-expression, medium appeal, Facebook intensity
Video sharing	Cha, 2014	Perceived usefulness, perceived ease of use, substitutability, utilitarian motive, experiential motive

Therefore, UGT is suitable for studying the group-buying environment, which offers the potential for both mass and interpersonal communication (Johnson and Yang, 2009), because UGT asks what consumers do with media, and not what media do to consumers (Katz *et al*., 1974). Moreover, Huang (2008), Hausman and Siekpe (2009), and Lim and Ting (2012) used this theory to investigate the psychological motivations in online shopping. We know that group-buying characterizes one of the B2C models (Song, 2011). Therefore, we suggest that applying UGT in exploring customer's psychological motivations to engage in online group-buying is adequate. With regard to group-buying, it is assumed that customers actively choose among information sources owing to each source's ability to gratify their different needs, such as information seeking, entertainment, social interaction, and passing time (escapism) (Choi *et al*., 2009; Rubin, 1986; Diddi and LaRose, 2006).

Entertainment refers to the extent to which the group-buying websites are fun and entertaining to users (Luo, 2002). Entertainment has been identified as the major gratification factor in mobile media), as well as in the use of the Internet (Papacharissi and Rubin, 2000; Choi *et al*., 2009). Dong *et al*. (2011) and Shu (2011) pointed out that entertainment is one of the reasons why customers engage in online group-buying. The information seeking in relation to UGT can be defined as the extent to which the group-buying provides users with resourceful and helpful information (Chen *et al*., 2002; Luo, 2002). Hausman and Siekpe (2009) and Luo (2002) pointed out that entertainment and information seeking are the most important factors in the online shopping environment. Media use as a pastime frequently appears as a gratification factor in mobile phone as well as Internet usage (Choi *et al*., 2009). Passing time is defined as using social media to occupy time and relieve boredom (Whiting and Williams, 2013). Diddi and LaRose (2006) mentioned that Internet news usage is related to users' passing time needs. Shields (2011) mentioned that passing time is one of the major factors attracting customers to participate in online group-buying. Moreover, forming social contacts with others is enabled by mobile media such as the mobile internet (Naruse, 2003). Social interaction is defined as using group-buying websites to communicate and interact with others (Whiting and Williams, 2013). Haridakis and Hanson (2009) mentioned that social interaction is a key factor in attracting users to use YouTube. Therefore, we agree with assertions by Choi *et al*. (2009), Rubin (1986) and Diddi and LaRose (2006)

that entertainment, passing time, information seeking, and social interaction can be used to explore group-buying users' psychological motivations.

3 Hypotheses Development

3.1 Hypotheses of the IS Continuous Model

As a result, this study has applied the same theoretical tenet to bridge the proposed research model, which addresses the antecedents and consequences of users' reactions after engaging in online group-buying intention. The ISCM and UGT factors related to online group-buying intention are theorized as the antecedents of the model, whereas users' intentions to visit and purchase intention on a continuing basis are modeled as the major consequence. Our research model illustrating the hypothesized relationships is presented in Fig. 1.

Several studies point out that the ISCM is able to effectively explain consumer behavior. Chea and Luo (2008) applied the ISCM in explaining the effect of cognition and feelings on continued use. Stone and Baker-Eveleth (2013) applied the ISCM to investigate students' e-textbook intentions to continue making purchases. In addition, Alraimi *et al*. (2015), Li and Shi (2012), and Lin *et al*. (2012) applied ISCM to explore the consumer's intention to use online group-buying websites. This study illustrates that the ISCM is able to effectively explain the consumer's intention to engage in online group-buying. Therefore this study hypothesizes that:

H1: Confirmation has a positive influence on information usefulness.
H2: Confirmation has a positive influence on satisfaction.
H3: Information usefulness has a positive influence on satisfaction.
H4: Information usefulness has a positive influence on continuing to revisit.

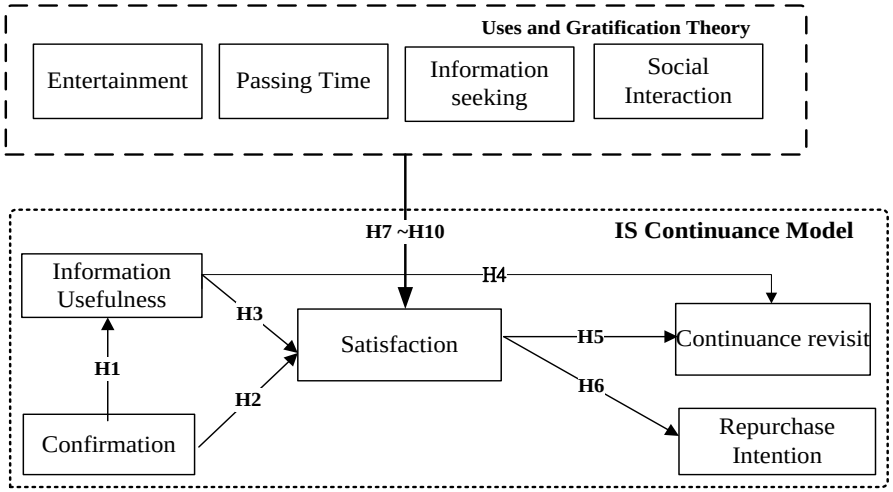

Figure 1: Research Model

The empirical evidence supports the positive relationship between satisfaction and intention (Bhattacherjee, 2001b; Shiau and Luo, 2012). Previous studies have demonstrated the importance of customer satisfaction to repeat purchase behavior; more specifically, satisfied consumers are more likely to make repurchases in the future than dissatisfied customers (Sánchez-García *et al*., 2012). Hence, in regard to the online environment, customer satisfaction plays a significant role in the decision making for online group-buying users, affects repurchase behavior, and increases repetitive purchases (Alraimi *et al*., 2015; Chang and Zhu, 2012; Chen *et al*., 2015; Hsu *et al*., 2014; Lin and Lekhawipat, 2014; Stone and Baker-Eveleth, 2013). In addition, Li and Shi (2012), Lin *et al*. (2012) and Hsu *et al*. (2015) applied ISCM to explore the consumer's intention to use online group-buying websites. Therefore this study hypothesizes that:

H5: Satisfaction has a positive influence on continuing to revisit.

H6: satisfaction has a positive influence on the intention to repurchase.

3.2 Hypotheses of Satisfaction and UGT

UGT posits that users' motivations are triggered by their individual demands

(Rosengren, 1974); motivations exert an important role in facilitating individuals' behavioral intention and actual media usage (Park, 2010). Hausman and Siekpe (2009), Lim and Ting (2012) and Luo (2002) mentioned that entertainment and information seeking positively influence the customer's satisfaction in an online shopping context. Choi *et al*. (2009) mentioned that entertainment, passing time and social interaction positively influence the customer's satisfaction in using mobile TV. Curras-Perez *et al*. (2014) pointed out that entertainment and social interaction positively influence the users' satisfaction in social networks.

In addition to previous studies, Dong *et al*. (2011) and Shu (2011) suggested that entertainment is one of the reasons why customers participate in online group-buying. Shields (2011) mentioned that passing time is one of the major factors attracting customers to engage in online group-buying. Shi *et al*. (2010) pointed out that information seeking positively influences the customer's satisfaction in research subjects associated with social networks. Jing and Xie (2011) stated that group-buying discusses the potential profit strength via social interaction. Taken together, this study hypothesizes that:

H7: Entertainment has a positive influence on satisfaction.

H8: Passing time has a positive influence on satisfaction.

H9: Information seeking has a positive influence on satisfaction.

H10: Social interaction has a positive influence on satisfaction.

4 Research Method and Analysis

4.1 Data Collection

Because the goal of this study was to understand customers' continuance intentions using online group-buying websites, the primary units of analysis were users who had actual experience of using online group-buying websites. To ensure the eligibility of the research participants, we invited online group-buying users from online review forums as our respondents. A web-based questionnaire was then sent to the respondents who had agreed to participate in the research. The survey was conducted for two weeks. By the time the survey was concluded, 483 questionnaires had been collected. The exclusion of 173 invalid questionnaires resulted in a total of

310 questionnaires that were complete and valid for further analysis. Table 3 summarizes the respondents' characteristics.

Table 3: Demographics (Number of Subjects = 310)

Measure	Items	Frequency	Percentage
Gender	Male	120	38.70
	Female	190	61.30
Age	Under 18	8	2.6
	19-24	103	33.2
	25-35	170	54.8
	36-45	23	7.4
	Over 45	6	1.9
Education	Junior high school or less	0	0.0
	High school	16	5.2
	University	177	57.1
	Graduate school	117	37.7
Occupation	Full-time student	102	32.9
	Office worker	117	37.7
	Government employee	31	10.0
	Freelancer	14	4.6
	Manufacturing	23	7.4
	Unemployed	23	7.4
Customer's experiences	Within 3 months	47	15.2
	3 ~6 months	51	16.5
	6 months ~1 year	67	21.6
	1~2 years	75	24.2
	2~3 years	26	8.4
	More then 3 years	44	14.2

Among these usable samples, 61.3% of the respondents were female, 38.7% were male, and at least 37.7% were office workers. A total of 54.8% of the respondents were between the ages of 25 and 35, and 57.1% had earned a bachelor's degree. The durations for customers' experiences for usage of online group-buying websites that were "1~2 years" and "6 months~1 year" accounted for 24.2% and 21.6% of the total number of respondents who submitted valid questionnaires. A total of 28.7% of the respondents on at least one occasion per day visited online group-buying websites, whereas 28.4% on at least one occasion per week visited online group-buying websites. The durations for spending time visiting online group-buying websites that were "less than 30 minutes" and "30minutes ~ 1 hour" accounted for 43.9% and 45.8% of the total, respectively. The amounts of money spent on online group-buying websites that were in the ranges of "NT$ 201~500"

and “NT$ 501 ~ 800” accounted for 47.4% and 24.2% of the total. The respondents reported that foodstuffs were the most frequently purchased (80.0%) items, followed by daily commodities (31.6%) and clothing (29.7%).

Because we collected both independent and dependent data from the same source by using the same method, common method variance (CMV) was deemed a potential concern in this study (Avolio *et al*., 1991). For this reason, several measures were taken to avoid and detect CMV. We conducted two tests to examine the common method variance (CMV). First, we conducted a Harman’s single-factor test (Podsakoff *et al*., 2003). The exploratory analysis shows that more than two factors can be derived, with the first factor explaining 20.506% of the variance (<0.50). The total variance explained was 72.560% based on an un-rotated factor analysis. From this, we inferred that the common method bias in this study was not high. Second we modeled all items as the indicators of a factor representing the common method effect (Malhotra *et al*., 2006). The results indicated a poor fit. For example, the goodness of fit index (GFI) was 0.552 (< 0.90) and the root mean square error of approximation (RMSEA) was 0.200 (> 0.08). With both tests, we felt that CMV was not a significant problem in this research.

4.2 Measurement Items

A pre-test and a pilot test were conducted to validate the measurement items. The pre-test involved five participants (two online group-buying managers and three online group-buying users) who were familiar with online group-buying websites. They were asked to provide comments while eliminating redundant or unrelated items. In the pilot test, we invited 85 respondents from the population of the online group-buying review website to participate. Several minor modifications of the content and structure of the items were solicited before the formal survey. The respondents were requested to rate each item on a seven-point Likert scale, for which a score of 1 means *strongly disagree* and 7 means *strongly agree*. Table 4 lists all of the questionnaire items.

Table 4: Summary of Measurement Items

Construct	Measure	Factor loading
Entertainment (ENT) Cronbach's $\alpha = 0.877$ *composite reliability = 0.877* Mean = 5.15 , SD = 1.075		
ENT1	It is an interesting activity for attending online group-buying.	0.870
ENT2	Attending group-buying is enjoyable.	0.898
Passing time (PT) Cronbach's $\alpha = 0.946$ *composite reliability = 0.944* Mean = 4.96 , SD = 1.216		
PT1	Visiting group-buying websites can help me to kill time.	0.918
PT2	Visiting group-buying will not get me bored.	0.972
Information seeking (INF) Cronbach's $\alpha = 0.872$ *composite reliability = 0.898* Mean = 4.99 , SD = 1.068		
INF1	I think that group-buying websites can offer me useful information.	0.772
INF2	I think that group-buying websites are good sources for obtaining product information.	0.828
INF3	I can acquire useful information from group-buying websites anytime.	0.860
INF4	I think that the latest information can be collected from group-buying websites.	0.852
Social interaction (SI) Cronbach's $\alpha = 0.951$ *composite reliability = 0.951* Mean = 5.12 , SD = 1.076		
SI1	Attending online group-buying helps me maintain good relationships with my friends.	0.945
SI2	Attending online group-buying helps me maintain good friendships with my friends.	0.959
Confirmation (CON) Cronbach's $\alpha = 0.893$ *composite reliability = 0.888* Mean = 4.88 , SD = 1.020		
CON1	Experience from attending online group-buying is better than I expected.	0.868
CON2	Services provided by group-buying websites are better than I expected.	0.842
CON3	Overall, attending online group-buying matches my expectation.	0.845

Table 4: Summary of Measurement Items (Continued)

Construct	Measure	Factor loading
Information usefulness (IU) Cronbach's $\alpha = 0.705$ *composite reliability = 0.705* Mean = 4.95 , SD = 1.111		
IU1	Compared to other types of website, browsing group-buying websites is both timely and energy-saving.	0.639
IU2	Online group-buying provides me with more options to elevate my performance when group-buying.	0.830
Satisfaction (SAT) Cronbach's $\alpha = 0.938$ *composite reliability = 0.930* Mean = 4.99 , SD = 1.043		
SAT1	My experience of participating in online group-buying makes me glad.	0.931
SAT2	My experience of participating in online group-buying makes me satisfied.	0.930
SAT3	My experience of participating in online group-buying makes me happy.	0.848
Continuance revisit (CR) Cronbach's $\alpha = 0.906$ *composite reliability = 0.905* Mean = 5.08 , SD = 1.077		
CR1	Compared to other types of shopping model, I tend to continue to visit group-buying websites.	0.775
CR2	I will tend to continue to visit group-buying websites in the future.	0.922
CR3	I will continue to keep visiting group-buying websites just as I do now.	0.913
Repurchase intention (RI) Cronbach's $\alpha = 0.931$ *composite reliability = 0.931* Mean = 5.21 , SD = 1.033		
RI1	If it is possible, I will keep buying products from group-buying websites.	0.947
RI2	I am planning to continuously buy products from group-buying websites.	0.919

4.3 Data Analysis

AMOS, one of the most prevalent techniques of structural equation modeling (SEM), was used in the data analysis. In contrast to other techniques, AMOS was chosen because the purpose of our study was to propose a theoretical model that focuses on testing rather than developing theories. By following a two-step approach suggested by Anderson and Gerbing (1988), we measured reliability and construct validity by using confirmatory factor analysis (CFA), followed by examining the structural model.

In this study, Cronbach's α and composite reliability scores were used to ensure the reliability of the measurement scales, and average variance extracted (AVE) was used to assess the convergent validity as well as internal consistency. Hair *et al.* (2010) recommended an acceptance level of 0.7 for the Cronbach's α scores and the composite reliability. As summarized in Table 4, the Cronbach's α scores and the composite reliability values of all constructs in our model are greater than 0.7, which demonstrates the adequate internal consistency of the scales. For convergent validity, two criteria should be met, as suggested by Fornell and Larcker (1981). First, all of the factor loadings should not only be significant, but should also exceed 0.5. Second, the average variance extracted (AVE) for each construct should exceed the variance because of the measurement error for that construct (i.e., AVE should be greater than 0.5). As listed in Table 4, all items exhibited loadings greater than 0.5 within their respective constructs. Table 5 shows that all AVEs were larger than the variance because of the measurement error. Thus, both criteria for convergent validity were met. Discriminant validity evaluates the extent to which a construct and its indicator variables differ from another construct and its indicator variables (Bagozzi *et al.*, 1991). In other words, the square root of the AVE should be greater than the correlations between the construct and other constructs (Fornell and Larcker, 1981). Table 5 presents the correlations among constructs, with the square root of the AVE on the diagonal. The correlation between each pair of constructs was less than the corresponding average variances extracted (diagonal values).

Table 5: Correlations and AVE

	AVE	ENT	PT	INF	SI	CON	SAT	PU	CR	RI
ENT	0.782	**0.884**								
PT	0.894	0.570	**0.946**							
INF	0.687	0.499	0.280	**0.829**						
SI	0.906	0.413	0.423	0.403	**0.952**					
CON	0.726	0.621	0.358	0.600	0.444	**0.852**				
SAT	0.817	0.674	0.460	0.623	0.482	0.554	**0.904**			
IU	0.549	0.466	0.269	0.450	0.333	0.620	0.659	**0.741**		
CR	0.761	0.522	0.356	0.482	0.372	0.658	0.588	0.508	**0.872**	
RI	0.871	0.496	0.329	0.462	0.355	0.557	0.609	0.585	0.691	**0.933**

Note: Diagonal elements in the 'correlation of constructs' matrix are the square roots of the average variance extracted. ENT = entertainment; PT = passing time; INF = information seeking; SI = social interaction; IU = information usefulness; CON = confirmation; SAT = satisfaction; CR = continuing to revisit; RI = repurchase intention.

Table 6 outlines the goodness-of-fit of the structural model. All indices meet the requirements as suggested by Bagozzi and Yi (1988).

Table 6: The Goodness-of-Fit of the Structural Model

Fit indices	Criteria	Results
χ^2/df	<3	2.331
Goodness of fit index (GFI)	>0.9	0.902
Adjusted for degrees of freedom (AGFI)	>0.8	0.861
Normed fit index (NFI)	>0.9	0.930
Non-Normed fit index (NNFI)	>0.9	0.952
Comparative fit index (CFI)	>0.9	0.958
Root mean square error of approximation (RMSEA)	<0.08	0.066

4.4 Results of Testing Hypotheses

Figure 2 illustrates the standardized path coefficients between the constructs of the proposed model. Regarding psychological factors, entertainment, passing time, and information seeking significantly affect customers' satisfaction toward using group-buying websites, whereas social interaction has no such impact. Therefore, H7 (β = 0.138, t = 2.18), H8 (β = 0.097, t = 2.38), and H9 (β = 0.117, t = 2.42) are supported, although H10 (β = 0.045, t = 1.07) is not. As for the IS continuance model, there are five paths that are significant. Confirmation significantly affects users' perception of information usefulness, and confirmation and information usefulness significantly affect users' satisfaction toward using group-buying websites. Thus, H1 (β = 0.738, t = 11.24) and H2 (β = 0.568, t = 7.48) are supported, although H3 (β = 0.102, t = 1.381) is not. Satisfaction and information usefulness significantly affect the users continuing to revisit group-buying websites. Thus, H4 (β = 0.172, t = 2.54) and H5 (β = 0.612, t = 8.67) are supported. Finally, the path from satisfaction to repurchase intention (H6) is significantly supported (β = 0.766, t = 15.15).

The R^2 values of the endogenous constructs can be explained through the explanatory power of the proposed model. The explained variance is 54.7% for continued visit intention, 58.7% for the intention to repurchase, 78.3% for satisfaction and 54.5% for information usefulness. All of the R^2 values exceed the minimum criteria of 0.10 (Falk and Miller, 1992).

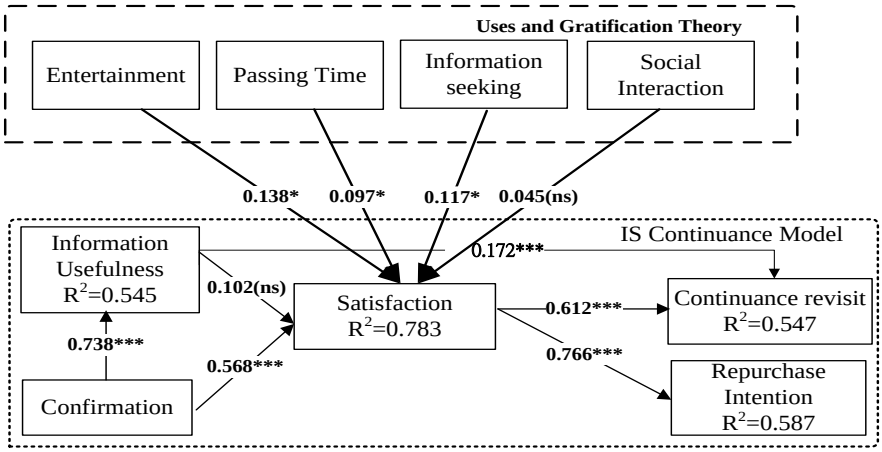

Figure 2: Structural Analysis of Research Model (* $P<0.001$, ** $P<0.01$, * $P<0.05$)**

5 Conclusion

5.1 Key Findings

In this study, we have integrated the ISCM and UGT to explore the customer's intention to continue to use and repurchase through online group-buying websites. The results reveal that satisfaction is the key factor affecting the customers' continuous usage and repurchase intention. The findings are consistent with prior studies (e.g., Alraimi *et al*., 2015; Hsu *et al*., 2014, 2015; Lin *et al*., 2012; Lin and Lekhawipat, 2014), and provide additional evidence to confirm the importance of such a relationship in an online group-buying context. In addition, the findings report that the factors of UGT (such as: entertainment, passing time, and information seeking) have significant relationships with satisfaction, providing additional evidence to support the link between satisfaction and UGT. The findings indicate that information usefulness has a significant relationship with continuing to revisit. The results also indicate that confirmation has positive effects on satisfaction, which support the assertions of the ISCM (Bhattacherjee, 2001a) that confirmation will have a positive influence on customers' perceptions of benefits. Finally, the results show that satisfaction exerts a significant influence on continuing to revisit and the

repurchase intention.

5.2 Implications for Theory and Practice

5.2.1 Integration of the ISCM and UGT

There are several implications for research and practice emerging from this study. First, although the ISCM has been intensively examined in the prior literature on online group-buying, little work has been done to combine the ISCM and UGT (psychological motivations) in order to test their effects on the intention to revisit and repurchase. This is because information usefulness is generally considered to be a type of extrinsic benefit that customers obtain from online transactions. In this sense, the role of intrinsic benefits has been ignored in the ISCM (Hsu *et al*., 2015). Therefore, developing a research model based on the literature on the ISCM and UGT to explain repurchase and revisit intentions is a contribution of this study.

5.2.2 Psychological Motivations

The analytical results reveal that entertainment, passing time and information seeking influence satisfaction positively, leading to their influencing the customer's intention to continue using online group-buying websites. In this study, the customer's intention to continue using group-buying websites has been divided into two parts, namely, continuing to revisit and the repurchase intention. The empirical findings also illustrate that entertainment is shown to have the most important effect both in terms of continuing to revisit and the repurchase intention. The second most important factor influencing the repurchase intention is information seeking. Therefore, while the consumers' expectation will be refined based on their prior experiences (Bhattacherjee, 2001a; 2001b), the group-buying proprietors should change their marketing strategies to meet consumers' needs. For instance, online group-buying websites can improve their atmosphere (e.g., by providing music for certain holidays or games for discounted products) to satisfy consumers in regard to their psychological factors, and not just for purchasing products.

Second, a significant relationship is not found to exist between information

usefulness and satisfaction. Although these findings were unexpected, they can be explained. This study solicited responses from the consumers of different online group-buying websites. These websites are each accessible through a web browser and comprise similar capabilities and features, which may have made these group-buying websites difficult to differentiate in terms of usefulness. These surprising results are consistent with previous studies (Alraimi *et al*., 2015; Hong *et al*., 2006; Kim, 2012; Lin *et al*., 2005), and suggest that user satisfaction is better established through users' psychological motivations (including entertainment, passing time, and information seeking). Moreover, social interaction is also not found to have a significant influence on satisfaction. Owing to the main purpose behind consumers using online group-buying websites being to buy products at lower prices, and not for social interaction, this may be one reason why social interaction only has an insignificant influence on satisfaction.

Finally, information usefulness is an effective predictor of revisit intention in the original ISCM. This can be examined if group-buying proprietors provide sufficient product information to help consumers effectively obtain the desired product information (Chiu *et al*., 2012; Hsu *et al*., 2015). For instance, online group-buying websites should regularly update their product information and establish search engines to meet consumers' needs.

5.3 Limitations and Future Development

Although a comprehensive study was conducted, a few limitations associated with this study do exist. The research model examined a limited set of antecedents which were expected to influence consumers' intentions to continue using online group-buying websites. Future research could examine additional factors that influence continuance intention which have been examined before, such as gender, age and salary level, in order to examine whether these factors influence the overall evaluation of online group-buying websites or not, thereby affecting the customer's intention to continue using group-buying websites. For example, Choi *et al*. (2009) and Shu (2011) mentioned that gender influences the customer's intention to continually use mobile TV and group-buying websites. Due to this study having been performed in Taiwan, we would like to suggest that customer's intentions to

continually use group-buying websites in different areas or countries may be incorporated in future studies in order to observe the effects of different traditions and cultures on the customer's selection.

5.4 Conclusion

Since repeat customers are five times more profitable than new customers (Reichheld and Sasser, 1990), it is important for online group-buying proprietors to understand why consumers are willing to engage in repeat purchases through group-buying websites. In the past, the role of intrinsic motivations had been ignored in ISCM (Hsu *et al*., 2015). An empirical examination using our data reveals that the factors associated with UGT have a significant effect in terms of predicting consumer's satisfaction and repurchase and revisit intentions. Furthermore, the three intrinsic antecedents of satisfaction are entertainment, information seeking and passing time, ranked in descending order of importance. In conclusion, this study highlights the importance of the role of UGT in the achievement of online group-buying repurchase and revisit intentions. The findings may help both academics and proprietors gain insights into how to stimulate repurchase intention in online group-buying.

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