Predicting Consumer Repurchase Intentions to Shop Online

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Abstract—The World Wide Web (WWW) has rapidly evolved since its inception in 1990. The total value of purchased goods and online services reached 327 billion US dollars in 2002. Such exponential growth has influenced the establishment of electronic commerce. Understanding online consumers is important in today’s economy. However, online sales remain relatively low compared to traditional retailing. It is also important to understand buyer motivation and the satisfaction of online customers after making a purchase. We test this with a questionnaire-based empirical study. The practical and theoretical implications discussed may help Web designers, developers, and managers understand consumer online shopping habits.

Index Terms—Flow theory, intention to return, Technology acceptance model

I. INTRODUCTION

The World Wide Web (WWW) has grown tremendously since its creation. Products and services sold over the Internet reached a total value of 517 billion US dollars in 2008. This has caused an increase in electronic commerce. However, there are risks involved in owning an electronically operated business. Despite the risks, business-to-consumer (B2C) commerce continues to grow.

According to the Ecommerce Environment Investigation Report and B2C Enterprise Promotion Plan (2008), the B2C economic market in Taiwan was up $5.28 billion, growing nearly 24.8% since 2007. The popularity of online stores remains lower than that of traditional retailing. Learning how satisfied the customers are with online shopping is crucial to establishing and maintaining customer loyalties [1].

II. RESEARCH MODEL AND HYPOTHESES

A. e-Royalty

Customers can easily compare prices of merchandise between vendors. This limits the cost a business can charge [2] and causes price competition. If the business is unable to establish a long-term B2C relationship, prices will continue to be limited due to competitive rivals. Research indicates that the cost needed to attract new customers is about five-times that of maintaining customer loyalty. [3]. If enterprises can reduce the rate of customer loss to 5%, it can increase annual profits by 25% to 95% [4]. Bain and Mainspring [5] indicate that if online businesses want to increase revenue, customers should shop four times or more from them, or the company should establish a loyalty relationship for 18 months. The question is how to entice a customer to shop from the same website.

It is easier to compare products online than it is in a traditional retail outlet. Because of this, it can be difficult for online business owners to establish customer loyalty. Some customers enjoy physically shopping and make a social activity out of the occasion. Online shopping does not provide for this. Such customers may not find that shopping online is as interesting and may not revisit the website. Analyzing why some customers prefer online shopping and some customers do not is important.

Fishbein & Ajzen’s [6] Rational Behavior Theory (RBT) and Ajzen’s [7] Theory of Plan Behavior (TPB) both indicate that behavior intention can be used for predicting actual behavior. Certain customers feel strongly about continually transacting with the same business [8]. Using customer loyalty to measure the possibility of future purchases is [9] consistent with Assael’s [10] definition of customer loyalty. Partiality towards a certain brand influences the consistency of purchasing behavior. However, some researchers posit that continually making actual purchases measure customer loyalty [11]. In this study, we use consistent purchasing as a study variable.

Loyal customers will recommend the company to relatives or friends and may be willing to pay higher prices. Word of mouth advertising is often very effective and can save shoppers from wasting time searching for the best deal [12-14] . In this research, we use four items to measure consistent purchasing behavior: 1. I continue to buy commodities or services that I will need in the future. 2. I buy commodities or services from this...
company even though other companies may have cheaper prices. 3. I recommend this company to my family, relatives and friends. 4. This company is my first choice when I need to shop online.

**B. Customer satisfaction**

Recent studies propose that satisfaction represents the customer’s overall experiences to date [15, 16]. Several researchers suggest that consumer satisfaction serves as the underlying determinant of repurchase intentions [17-19]. However, Ajzen [20] pointed out that attitude is a predisposition to respond favorably or unfavorably to IS. Online users’ responses have typically been evaluated via user satisfaction [21]. As DeLone & McLean [22] mentioned, user satisfaction is the most widely-used measure of information system (IS) success. Therefore, this study uses satisfaction instead of attitude to predict users’ repurchase intention.

Fornell et al. [23] proposed that customer satisfaction can be measured two ways: by measuring customer satisfaction after specific transactions or by measuring the satisfaction the customer experiences after buying a product or service. Researchers define satisfaction as feeling fulfillment when certain needs, desires or goals are met and when they shop for enjoyment [24]. Customers compare what they paid with the product or service. By this they judge whether or not they feel satisfied [25]. There are five ways to measure satisfaction: 1. The experience and quality of shopping from this company; 2. The accuracy of the advertised material; 3. The enjoyment of shopping with one specific company compared to another; 4. The satisfaction of pricing compared to service; 5. A general overall feeling of satisfaction.

Past research indicates that company-provided customer service training can effectively increase the probability of a customer making future purchases and increases the marketing share at the same time [26]. Other researchers indicate that if customer satisfaction is high, they are more likely to purchase from the business again [27, 28]. We hypothesize:

H1: Online customers’ satisfaction will have a positive effect on intent to return

C. **Links between TAM to re-purchasing**

Davis [12] proposed that customer behavior is directly determined by behavioral intention, but the customer’s attitude influence. Two perspectives influence this: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) [29]. Technology Accepted Model (TAM) is an adaptation of the Theory of Reasoned Action (TRA) by Fishbein and Ajzen [6]. PU and PEOU may be the most important antecedents in e-commerce adoption intention [29-32]. The TAM model also gains lots verification of e-commerce [1, 8, 21, 33-37].

PU is the extent to which a person believes that using a particular technology will enhance his or her job performance. In the context of online shopping, we measured PU with a four-item scale adapted from Venkatesh and Davis [31]. The following are the four-item scale: 1. using my favor shopping website can improve my shopping performance, 2. using my favor shopping website can increase my shopping productivity, 3. using my favor shopping website can increase my shopping effectiveness, 4. I find using my favor shopping website is useful.

PEOU is the degree to which a person believes that using the system will be free from effort [8]. In our study, we measure PEOU with a three-item scale adapted from Venkatesh and Davis [31]. The following are the three-item scale: 1. learning to use my favor shopping website would be easy for me, 2. I find my favor shopping website easy to use, 3. my interaction with my favor shopping website is clear and understandable.

Some researches have already shown that PEOU has a positive effect on the intention to adopt shop online [29, 34]. The intention to purchase again also predicts and explains these two determinants. If consumers perceive the usefulness and ease of use of online shopping, then:

H2: Perceived usefulness will have a significant, positive effect on the intent to return.

H3: Perceived ease of use will have a significant, positive effect on the intent to return.

Because many researches have shown the relationship between attitude and TAM [38, 39], we propose that PEOU and PU both influence consumers. We expect PEOU and PU to have a positive influence satisfaction.

H4: Perceived usefulness will have a significant, positive effect on consumer satisfaction.

H5: Perceived ease of use will have a significant, positive effect on consumer satisfaction.

D. **Shopping enjoyment and concentration**

Understanding online consumer behavior is important in today’s digital economy [40]. Novak et al. [41] indicate a correlation between flow and recreational Internet use. Every customer plays an important role in flow. Flow is the state which occurs during network navigation, which is characterized by a seamless sequence of responses. Machine interactivity, intrinsic enjoyment, accompanied by a loss of self-consciousness, and self-reinforcing facilitate these responses [41].

Flow is characterized by concentration and enjoyment, and both were found to be significantly linked with computer use [42]. Ghani [43] proposed that flow is closely related to consumer satisfaction. Like Csikszentmihalyi [44], Ghani [43] described flow as a persuasive environment in which the consumer is not self-conscious and only concentrates on a goal. According to Baronas and Louis [45], a positive relationship exists between flow and satisfaction toward IS use. Webster [46] pointed out that customers appreciate immediate feedback. We therefore expect enjoyment, measured with a three-item scale adapted from Ghani et al. [47], would have a positive impact on intention to return and satisfaction. The followings are the three-item scale: 1. when I visit my favor shopping website, I found my visit interesting, 2. when I visit my
favor shopping website, I found my visit enjoyable, 3. when I visit my favor shopping website, I found my visit exciting.

Concentration as a measure also has an influence on consumers [41]. In our study, we measured concentration with a four-item scale adapted from Ghani et al. [47]. The followings are the four-item scale: 1. when I visit my favor shopping website, I was absorbed intensely in the activity, 2. when I visit my favor shopping website, my attention was focused on the activity, 3. when I visit my favor shopping website, I concentrated fully on the activity, 4. when I visit my favor shopping website, I was deeply engrossed in the activity.

These customers shop online for the enjoyment of the process, not the product itself. Some people are willing to pay more to experience this. Koufaris’s study [48] described deep enjoyment in online shopping which is an important dependent variable for unplanned purchases and intention to purchase again. Heijden [49] has proved that shopping enjoyment influences behavior intention. We hypothesize and create a test model as Figure 1 shows.

H6: Concentration will have a positive influence on the intention to purchase again.

H7: Shopping enjoyment will have a positive influence on the intention to purchase again.

H8: Concentration will have a positive influence on online shopping satisfaction.

H9: Shopping enjoyment will have a positive influence on online shopping satisfaction.

Out of 1000, 628 completed surveys indicated which students had online shopping experience, as Table I shows.

B. Measurement model result

We adopted confirmatory factor analysis using LISREL to test the proposed measurement model. Construct validity was assessed by both convergent validity and discriminant validity.

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<th>TABLE II. MEASUREMENT MODEL FIT INDICES FOR CONVERGENT VALIDITY</th>
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Specifically, this study adopts Nunnally’s [50] suggestion that the acceptable convergent validity of each item should greater than 0.6. One item of perceived usefulness was dropped from subsequent analysis.
because its loading was only 0.32. Table II lists all the other items, whose loading ranges from 0.615 to 0.827 and proves the fit of the measurement model.

The reliability of measurement model was assessed for internal consistency using both Cronbach’s alpha and average variances extracted (AVE). Table II shows that all the values of Cronbach’s alpha were between 0.747 and 0.848, which is greater than the recommended value of 0.7 for social science research. Furthermore, the variance extracted value for each construct ranged from 0.5 to 0.59, exceeding the criteria of 0.7 [51].

Discriminant validity was determined by the square root of the AVE, whether it exceeds the correlation between the constructs [52]. Table III shows that the square root of the AVE by the latent construct ranges between 0.71 and 0.77. These results indicate that the correlation for each construct is less than the square root of the AVE. The indicators measuring each construct indicate that the discriminant validity is adequate.

Since the construct validity is validated by convergent validity and discriminant validity, and the reliability of the measurement model is satisfactory, the next step is to illustrate the process of identifying the structural model.

C. Structural model results

The following seven common model-fit measures were used to assess the research fitness: the ratio of $\chi^2$ to degree-freedom (df); non-normalized fit index (NNFI); adjusted goodness-of-fit index (AGFI); comparative fit index (CFI); goodness-of-fit index (GFI); normalized fit index (NFI); and root mean square error of approximation (RMSEA), as Table IV shows. The observed norm for $\chi^2$ was 3.4, which is larger than 3, as recommended by Bagozzi and Yi [53]. However, $\chi^2$ is very powerful when $n$ exceeds 200 respondents [52]. We recommend that other goodness-of -fit measures should complement $\chi^2$ [52]. Other indices also show good fitness in the measurement model. The adjusted goodness-of-fit index (AGFI) is 0.897, which exceeds the recommended 0.8 [54]. The non-normalized fit index (NNFI) is 0.968 and comparative fit index (CFI) is 0.973, which is greater than the 0.9 recommended Bagozzi and Yi [53]. The root mean square error of approximation (RMSEA) is 0.068, which exceeds the recommendation of 0.08 by Browne and Cudeck [55]. The combinations of the index results suggest that the demonstrated measurement model fits the data. Our measurement model exhibited consistency with the data collected.

The measurement model demonstrated adequate reliability, convergence and discriminant validity. The model matches the research.

Figure 2 shows that perceived ease of use ($\beta$=0.045, $p<0.01$) and enjoyment ($\beta$=0.229, $p<0.05$) are strong predictors of customer satisfaction. This supports H5 and H9. The effect of customer satisfaction on intention to purchase again ($\beta$=0.704, $p<0.05$) was significant, validating H1. However, there was no effect of perceived usefulness and concentration on customer satisfaction, so H2, H3, H4, H6, H7 and H8 were rejected.

There are three effects in structural equation models: direct, indirect, and total effect. Total effect is the sum of direct and indirect effects [56]. Table V shows the relationship of the effect between latent variables.

Table V shows the indirect effect value of ease of use on intent purchase again is 0.032 and shopping enjoyment is 0.161. Website managers should pay attention to the design of Website to make Web shopping easier and more pleasant.
The TAM model has received significant attention for its ability to predict an individual’s technology acceptance. Even though PEOU and PU are the primary motivators of IS acceptance, they do not have a consistent influence of subsequent or continued usage intentions [57]. The majority of prior studies on TAM have found that PU is an important determinant of usage intention. However, these findings do not agree with the results of the present study. The lack of a significant relationship between PU and repurchase intentions for online shopping is rather surprising. There are at least two plausible explanations. First, this may be attributed to the existence of a strong culture concerning Taiwan’s shopping environment. It is a very rich, plentiful, and convenient shopping environment, including stores and many night markets close to people’s residences, and business hours extend into the night. In particular, Taiwanese night markets entice shoppers with their crowded streets, snacks and delicious foods, interesting people, and variety of trinkets and toys, serving as a condensed and scaled-down representation of Taiwanese culture. Due to the quality foods, reasonable prices, and comfortable shopping environment in Taiwan, many people enjoy the convenience and experience of shopping. In many cases, people are not only shopping, but also developing social relationships at the same time. Therefore, people may not think the PU is an important motivator of repurchase intention to a website. Therefore, we can assume that enjoyment is not a significant factor influencing a user’s intentions to return.

The second plausible explanation of the relationship between PU and repurchase intentions for online shopping is that, according to our data survey, 62.8% of participants are online shopping experienced users. Thus, experienced users may have different perspectives about e-commerce systems and their continuing use. Other researchers have suggested that TAM is limited in its ability to predict user behavior if users are experienced [58]. Consequently, intentions to return may be high regardless of user perceptions of usefulness and ease of use. This implies that other constructs must have a significant impact on user intentions to return, irrespective of whether online users perceive the system to be useful or not. Therefore, website designers and administrators should consider other critical variables, such as how user’s habits may affect their repurchase intentions. Future research is needed to investigate this topic.

The results of this study also indicate that PEOU does not have a significant and direct influence on intentions to return. This confirms that PEOU is an unstable measure for predicting behavioral intentions [59] and IS continuance [60]. Karahanna and Limayem [61] indicate PEOU represents individuals’ beliefs that depend on their own experience, skills, and self-efficacy. Therefore, PEOU effect is not so important for experienced online shopping. According previous discussion, PEOU is not an important factor influencing re-purchase intentions for experienced users. This is consistent with studies showing that prior experience is a substantive predictor of later behavior [58, 62].

Furthermore, many studies provide evidence that PEOU is a non-significant factor [63], especially when users gain experience with the system. In this case, PEOU concerns will be displaced by other instrumental considerations, such as security and privacy protection in an e-commerce system [64]. From a business practitioners’ point of view, website design should focus on other important constructs to encourage users’ continuance intention. Notably, online retail managers should be aware of the appropriate online shopping services to encourage their customers’ retention.

More specially, both PEOU and enjoyment do not have a significant, direct effect on intentions to return, but exhibit an indirect influence through customer satisfaction consequence. This reflected in the fact that online shopping users obtain satisfaction through internal perception. Because satisfaction is a post-choice evaluative judgment of contentment regarding prior purchasing experience, it will lead consumers to have further re-purchase intentions [65]. Essentially, satisfaction plays a key role in explaining continuance intention. The effect of consumer satisfaction thus results in influence continuance intention for online shopping websites.

In conclusion, the analytical results of this study support the view that customer satisfaction is an important factor influencing intentions to return. This result is consistent with previous study in information system continuance intention and usage research [66]. Accordingly, we can infer and suggest online website managers need to develop an interesting and fancy interface design, which can increase online users’ tendency to use the website again. Satisfied customers are a less expensive and more effective advertising channel than mass media. For example, Crego and Schiffrin [67] mentioned that a 5% increase in customer retention reduces 18% of operating costs. While consumer satisfaction is certainly a preferred outcome for B2C firms, B2C firm managers need to understand these factors because they play a key role in continuation intentions. Furthermore, web site managers should be

| TABLE V. DIRECT, INDIRECT AND TOTAL EFFECT OF RESEARCH MODEL. |
| Variable | Independent Variable | Indirect | Total |
| PU | 0.067 | 0.910 | No | --- | --- |
| EU | 0.045** | 7.607 Yes | 0.045** | --- | --- |
| CA | 0.103 | 1.369 No | --- | --- | --- |
| EN | 0.229** | 2.605 Yes | 0.229** | --- | --- |
| IR | PU | 0.015 | -0.204 No | --- | --- |
| EU | 0.036 | 0.594 No | 0.032 | 0.032 |
| CA | 0.060 | 0.823 No | --- | --- | --- |

IV. DISCUSSION AND CONCLUSIONS
cognizant of interactions among online shopping users and the effects of customer satisfaction on online shopping continuance intention.

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