

A Study of Online Customer Loyalty Based on the Theory of Planned Behavior

Chi-I Hsu¹, Bing-Yi Lin¹, and Chaochang Chiu²

¹Department of Information Management, Kainan University, Taiwan, R.O.C.

²Department of Information Management, Yuan Ze University, Taiwan, R.O.C.
imchsu@mail.knu.edu.tw; m93221001@ms2.knu.edu.tw; imchiu@im.yzu.edu.tw

Abstract: The Internet has introduced major changes in the way companies conduct business. Practically, rising numbers of customers are using the Internet for Electronic Commerce (EC). In the respect of customer relationship, Business-to-Consumer (B2C) EC provides ongoing information, service, and support that have changed the approaches of communication and interaction with customers. The nature of online customer behavior in the EC transaction is therefore different from the one in a traditional retailing channel. This research focuses on the online customer behavior through examining the relationship between the behavior intention and the online behavior itself. Based on the Theory of Planned Behavior (TPB), a base model of Online Customer Loyalty is developed. The research also proposes an alternative model in which Satisfaction is adopted as a mediated variable. Four hundred and twenty-three questionnaires are collected for the empirical experiment. The method of Structural Equation Modeling (SEM) is used to evaluate the measurement and structural models. The result indicates that TPB can be used to explain the behavior of Online Customer Loyalty. The structure relationship between Behavior Intention and Online Customer Loyalty is significant. The three constructs influencing Behavior Intention including Attitude toward Behavior, Subjective Norm and Perceived Behavioral Control also have indirectly positive effects on the behavior of Online Customer Loyalty. The two competing models are compared. Both models are acceptable when judged by the criteria of goodness-of-fit measures. However, the alternative model has a higher explained proportion of variance in Online Customer Loyalty.

Keywords: Customer Relationship Management (CRM), Electronic Commerce(EC), Theory of Planned Behavior (TPB), Structural Equation Modeling (SEM).

I. Introduction

The Internet has been applied in different kinds of commercial activities, among which Electronic Commerce (EC) is the one best providing a close contact between customers and business owners. The commercial competition is thus extended from physical market to online marketplace [37]. Consumers can use the Internet to watch all kinds of digital catalogues and multimedia product information. Through the more convenient product searching

function and virtual shopping feeling, B2C EC model is becoming more acceptable to customers. B2C websites can not only provide the introduction of products and the company, but also the real-time information. The website design emphasizes on the personalization and interactive nature, and the function providing customers with online order and payment has also been added to it.

Along with the vigorous development of EC, many businesses from the traditional market have begun to involve in the virtual electronic market; however, there are discrepancies of certain degree existing between the consumer behaviors of these two markets. Further, the shopping environment is facing a competitive situation even much keener than ever due to the rising trend of the Consumer to Consumer (C2C) personal online sales. Thus, understanding the behavior model of online customers to develop a most advantageous managing model is the key factor leading to the success in today's customer-oriented relationship management.

Based on the Theory of Planned Behavior (TPB), this research investigates the purchasing behavior model of online customers from the viewpoint of user behavior. Since loyalty is a crucial factor dominating consumers' real purchasing behaviors [37] and the main profit source of electronic retail websites is loyal customers [25, 40], the research mainly examines the online customers' loyal behaviors. In addition to verifying if TBP appropriate for the discussed online purchasing behavior, the research also proposes an alternative model in which Satisfaction of Online Customers is adopted as a mediated variable in order to analyze its effect on the base model and to compare the two competing models.

II. Literature Review

II.1 Internet Use

To the business owners, setting up their websites on the Internet can provide them with the advantages of lowering the expenses and expanding the managing scope to the global market. Through websites, they offer their products and services to online customers, meanwhile the customers can browse the merchandise and decide if they want purchase the products or request for services [19]. E-retailing can be viewed as an application of the electronic feature of the Internet to play as a medium for marketing route and dissemination, performing as an integrated EC model for product sales and service offers.

Angelide [5] argues that e-retailing is the business offering merchandise and service to online customers

through the interactive process between both sides of the commerce. O'Connor and O'Keefe [34] pointed out the importance of the interactive model in the marketing process, indicating that it not only provides the opportunity for customers and business owners to interact before the transaction, but most important is the follow-up interactions in the transaction process and after the transaction. Scansaroli [38] found that comparing to traditional shopping, consumers can save more time, effort and money and obtain merchandise of more diversity through using search engines and browsing major websites online.

Some researchers have investigated website uses, for example, Liang & Lai [27] derived the website design functions from customer-oriented viewpoint; Sterenson et al. [41] explored the browsing attitude of the website users; Eroglu et al. [16] studied the atmosphere and quality created by retail websites.

II. 2 Customer Loyalty

Loyalty is a crucial factor which dominates the customers' purchasing behavior and represents their behavior tendency toward the merchandise or service [39]. Griffin [18] suggests that loyalty includes the following behaviors or attitudes of customers: frequently repeated purchasing, willing to use all kinds of products or serial services the company provides, praising the company and advertising it, and refusing the promotion activities of other companies. Lee, Kim and Moon [25] proposed that the value and profit of websites comes from the number of loyal customers. Srinivasan et al. [40] pointed out two main factors for evaluating online loyalty: customers' passing on and price tolerance. When the online loyalty increases, the price tolerance is higher, and the customers are more willing to recommend the company to others.

II. 3 Customer Satisfaction

Satisfaction is the customers' overall evaluation towards the merchandise or service before and after their actual purchasing behavior occurs. The evaluation content is mainly a comprehensive examination of the product/service quality, the acquired value, the performance and expenses. Howard & Sheth [20] defined satisfaction as the customers' assessment and cognitive status by comparing the expenses they paid and the rewards they obtained. Kotler [23] defined satisfaction as a kind of after-purchasing evaluation of the product quality based on what they expected before purchasing the product. Oliver [35] claimed that satisfaction is the mental expectation customers have of the products before the purchasing behavior occurs. If the product quality is not as good as the customers expected, this discrepancy will cause a sense of uncertainty, which affect the satisfaction degree of customers.

III. Theory of Planned Behavior

TPB is an expansion modified theory proposed by Ajzen [2]

based on Fishbein and Ajzen's [17] Theory of Reasoned Action (TRA), which has better explanation capacity on the actual behavior.

TRA predicts and explains the relationship between an individual's attitude and behavior based on the hypothesis that a behavior occurs due to the volitional control of each individual. According to TRA, one's will decides his actual behavior, and actual behavior is represented by behavior intention, which is affected by attitude toward behavior and subjective norm. Yet each individual's will control is affected by several internal and external factors, most behaviors have the uncertainty of certain degree. Thus, when investigating non-will factors affecting behaviors (such as opportunity, environmental resources, cooperation from others, and so on), the explanation capacity of TRA will decrease, and cannot offer reasonable explanations [3].

Ajzen [2] therefore expanded TRA to TPB, which has one more construct added - perceived behavioral control, control ability toward the opportunity and resource when a person adopts his behavior. This construct can enforce the prediction ability of behavior, while the other three constructs are affected by the external variables. The overall structure of TPB can be depicted in figure 1.

Behavior Intention is the intentional degree of certain behavior a person acts, which can reflect his own will. Through understanding the intention of a person's behavior, the possibility of this behavior being actually performed can be observed. Because the behavior intention and the actual behavior have an extremely close relationship, the intentional degree will determine the possibility of such behavior. Thus, by measuring such a latent component like behavior intention, the reason of adopting the real behavior can be derived. It is hypothesized in TPB that the attitude toward behavior, subjective norm, and perceived behavioral control are independent to each other, and can affect the actual behavior directly through behavior intention.

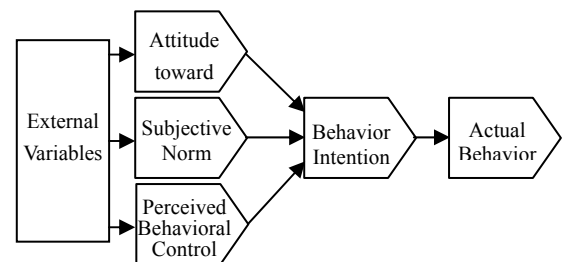


FIG 1. Overall Structure of TPB [2]

Attitude toward Behavior is the goodness or badness a person feels about a behavior or the positive or negative judgment after performing such behavior. The attitude is not the behavior itself, but both have high consistency with each other. If a person can act following his own free will, his attitude shall be highly consistent with his behavior [29].

Subjective Norm stands for the impact and stress from the social groups around a person when he decides to act

certain behavior. The stress from these surrounding social groups (such as parents and friends) is mainly caused by the thought that this person considers them as his important others and cares about their agreement of his behavior. Ajzen and Fishbein [1] thought that if the influence of the attitude toward behavior is larger than the social stress, the attitude will decide the intention of behavior, and vice versa.

Perceived Behavioral Control is defined as simplicity degree that a person tries to perform certain behavior. The control may be dominated by the past training, experience and the current obstacles. If a person has more chances, resources and performing capabilities, and believes there are fewer obstacles, then the degree of Perceived Behavioral Control is higher, and the control cognition is stronger. Hence, the influence of this perceived behavioral control tends to be more obvious.

TPB is based on the hypothesis that the behavior intention will become more obvious when the attitude toward the behavior tends to be more positive, the stress from the surrounding social groups is stronger, and the degree of the presumed control abilities is larger. Mathieson [32] adopted TPB to explain the behaviors of students using the trial balance and found out that the three major components of this theory (the Attitude toward Behavior, the Subjective Norm and the Perceived Behavioral Control) could explain the Behavior Intention properly. Talor & Todd [42] used TPB to study the cognitive and psychological factors which affect the use of information, and they proposed a behavior model for the use of Information Technology to analyze the service behavior of the computer center in business school. The result indicated that TPB could effectively explain the use of information.

IV. Research Model

TPB is adopted in this research to explain the loyalty of online customers. The research model includes five constructs: LOYalty of online customers (LOY), behavior INTention (INT) of online customers, ATTitude toward behavior (ATT) of online customers, SUBjective norm (SUB) of online customers and PERceived behavioral control (PER) of online customers; the definitions of constructs is listed in Table 1.

IV.1 Loyalty of Online Customers

According to Griffin's definition of loyalty [18], this research proposes the following four dimensions of LOY: "Continued Sales" is when customers having the same purchasing demand, they are willing to come back to use the same online transaction service; "Extended Consumption" is when customers having the other purchasing demand, the request from customers for further related online transaction services; "Resistance against a competitor's discount offers" can be viewed as when other retailing channels offer promotion discounts or decent services, customers will not take the offers and stay with online transaction services they originally used; and "recommendation of the product or

service to others" is the enthusiastic recommendation way of customer behaving about the use of online transaction services.

IV.2 Behavior Intention of Online Customers

INT is defined as the intentional degree of certain behavior a person acts for purchasing online, which can reflect his own will. In the operational level, this research proposes the intentional degree of collecting and requesting product or service information through the Internet can reflect customers' will for further purchasing merchandise or service online. The operational items for INT include searching for products information [12, 43] and new products information [40] through the Internet, using the information or searching services provided by retailing websites [12, 28, 30, 43], and responses from retailing websites to the requests of customer problems [28, 42].

TABLE 1. Construct Definitions

Construct	Definition
LOY	The loyal degree of online customers when a customer purchases merchandise or service on the Internet, including the following four dimensions: continued sales, extended consumption, resistance against a competitor's discount offers, and recommendation of the product or service to others.
INT	The intentional degree of certain behavior a person acts for purchasing online, which can reflect his own will.
ATT	The goodness or badness a person feels about the behavior of online purchasing or the positive or negative judgment after performing such behavior.
SUB	The impact and stress from the social groups around a person when he comes to a decision to perform online purchasing behavior.
PER	Simplicity degree that a person tries to perform online purchasing behavior.

IV.3 Attitude toward Behavior of Online Customers

The research defines ATT as the goodness or badness a person feels about the behavior of online purchasing or the positive or negative judgment after performing such behavior. In the operational level, this research refers to the related literatures for most feelings the online customers experience and develops the following items: ease of use [28, 29, 31], personal customization [15, 31, 44], convenience [12], autonomy [12], interference [12], privacy [31, 38], and security [12, 17, 44].

IV.4 Subjective Norm of Online Customers

The research defines SUB as the impact and stress from the social groups around a person when he comes to a decision to perform online purchasing behavior. In the operational level, this research refers to related literatures [28, 32] and develops the following items of SUB: some information to promote the convenience of online purchasing through newspapers and media; the advertisement and the marketplaces business owners provide on the Internet; and the purchasing experiences, recommendations and consulting of the relatives and friends.

IV. 5 Perceived Behavioral Control of Online Customers

The research defines PER as the simplicity degree that a person tries to perform online purchasing behavior. Past training, experiences and current obstacles may influence PER. In the operational level, this research refers to related literatures [14, 30, 44] and develops the following items of PER: the accumulating experience of using the Internet by time and frequency; the familiar degree of using the Internet; the ability to gather enough product and service information, to make purchasing decisions, and to judge the safety of websites.

The overall research framework is shown in Figure 2. The research hypotheses are as follows:

- H1: Behavior intention has positive effect on loyalty of online customers.
- H2: Attitude toward behavior has positive effect on behavior intention of online customers.
- H3: Subjective norm has positive effect on behavior intention of online customers.
- H4: Perceived behavioral control has positive effect on behavior intention of online customers.

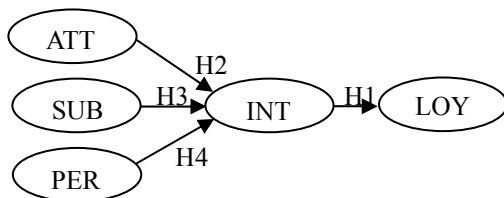


FIG 2. Overall Research Framework

V. Research Model

V. 1 The Research Process

The survey method is used to collect the empirical data. A questionnaire is developed and a five-point scale is applied to the measurement of total 45 questionnaire items. In order to effectively represent the constructs in the research model, this study adopts certain procedures to ensure that the measurement can achieve the expected quality. In respect of the content validity, this study refers to the viewpoints of the TPB theory and relevant EC papers to develop questionnaire items. In respect of the face validity, this study invited ten users with Internet shopping experiences to discuss the questionnaire wording in order to ensure that the person can

understand all the questionnaire items. Furthermore, thirty-five graduate students in the areas of business and information management participated in the pre-test. Thirty-five valid samples are obtained and analyzed by the tool SPSS 10.0 for Windows. The initial reliability analysis and exploratory factor analysis are conducted to check the reliability of questionnaire items and the appropriateness of their factor structure.

The Structural Equation Modeling (SEM) method is adopted and the software LISREL 8.71 is used to conduct the SEM analysis. This study first evaluates measurement models by the Confirmatory Factor Analysis (CFA) method. The structure model is then examined to test the hypothetical relationships. This study also proposes an alternative model with the construct Satisfaction of Online Customers as a mediator. Multiple goodness-of-fit indexes are compared between the two competing models.

V. 2 The Data Collection

In addition to one hundred and fifty samples distributed via the Internet, three hundred questionnaires are distributed to college students (including undergraduate and graduate), staffs and faculties with Internet shopping experiences from a university in northern Taiwan. Out of the total 450 questionnaires distributed, 423 valid samples are collected after deducting the samples with more than three items not answered. The effective response rate is 94%. The correlation matrix for all constructs is shown in Table 2, in which SAT (SATisfaction of online customers) is a mediated variable proposed in the alternative model. The descriptive statistics of respondents' characteristics are shown in Table .The operational definition of SAT and the details of the alternative model are further described in section 5.4.

TABLE 2. Correlation Matrix

	LOY	INT	ATT	SUB	PER	SAT
LOY	1.00					
INT	0.60	1.00				
ATT	0.41	0.68	1.00			
SUB	0.40	0.66	0.65	1.00		
PER	0.40	0.67	0.73	0.51	1.00	
SAT	0.63	0.73	0.50	0.48	0.49	1.00

V. 3 The Data Analysis

The measurement model

Through the CFA method, this study basically examines the following two subjects: (1) whether the factor loading estimates are significant, that is, the t-values should be greater than 1.96 at the significant level of 0.05; (2) whether the measurement models are good of fit. The overall fit of the model to the data can be evaluated by goodness-of-fit measures. The goodness of fit of the whole model may be judged by means of the following measures:

- Chi-square (χ^2)
- Comparative Fit index (CFI) [9]
- Normed Fit Index (NFI) and Non-Normed FI (NNFI) [7]
- Root Mean Square Error of Approximation (RMSEA) [10]
- Standardized Root Mean square Residual (SRMR)

According to Joreskog and Sorbom [23], if the model is correct and the sample size is sufficiently large, the χ^2 test may be used for testing whether the model fits the data well. Instead, χ^2 may be regarded as a goodness-of-fit measure in the sense that the degrees of freedom (df) is provided to judge whether χ^2 is large or small. Large χ^2 values correspond to bad fit and small χ^2 values to good fit. The criteria of goodness-of-fit measures are as follows: χ^2/df is suggested to be smaller than 2 for good of fit [11] and 3 for acceptable fit [13]; CFI greater than 0.95 for good of fit [8]; NFI, NNFI greater than 0.9 for good of fit [21]; SRMR smaller than 0.08 for good of fit [21]; and RMSEA smaller than 0.05 for good of fit and 0.08 for acceptable fit [33].

This study deletes SAT4, SAT9, ATT8, SUB5, SUB7, and PER2 which are suggested by the standardized residuals output to have large negative/positive residuals between variables. For model modification, LISREL8 provides modification indices (MI) which indicate an improvement in fit measured by a reduction in χ^2 . It is recommended only when relaxing a parameter makes sense from a substantive point of view [23]. This study follows the principle of unidimensionality in developing index and scale [6] and deletes PER3 which is suggested by MI to have multidimensional factor loadings.

The Maximum Likelihood (ML) results of loading estimates and goodness-of-fit measures are shown in Table 4 and Table 5. The values of the factor loading between all latent variables and their first observable variable are fixed to 1 for the purpose of standardization. All t-values for loading estimates are greater than 1.96. χ^2 of the two measurement models are 340.83 with 116 degrees of freedom ($\chi^2/df=2.9381$, $p<0.0000$) and 378.66 with 132 degrees of freedom ($\chi^2/df=2.8686$, $p<0.0000$) respectively. And other goodness-of-fit measures indicate that the measurement models are acceptable (CFI>0.95; NFI, NNFI >0.9; RMSEA<0.08; and SRMR<0.08).

The reliability

The reliability statistics are shown in Table 6. The values of Cronbach's α are all above the 0.7 level and thus satisfy the reliability requirement.

The structure model

As the statistics for the base model shown in Table 9, χ^2 of the structure model is 905.50 with 343 degrees of freedom ($\chi^2/df=2.6399$, $p<0.0000$). Other goodness-of-fit measures are as follows: CFI=0.96, NFI=0.94, NNFI=0.96, RMSEA=0.062, and SRMR=0.072. The statistics indicate that the structure model is acceptable.

The structure model with standardized solutions is shown in Figure 3. All path coefficients are significant indicating that the hypothesized relationships H1~H4 are supported. Square Multiple Correlations (SMC) for the structural equations are also reported. SMC for the structural equations indicate the explained proportion of variance in the endogenous variables accounted for by the variables in the structural equations [23]. The effect results of the path analysis are shown in Table 7. The test results of hypothesis are shown in Table 8.

V. 4 Alternative Model Comparison

Furthermore, this study proposes an alternative model with a mediated variable SATisfaction of online customers (SAT) added into the base model. SAT concerns a customer view of online transaction quality. A shared expression of satisfaction includes the consumer's perceived expectations [36]. SAT is therefore coupled with the consumer's prior intention about the online quality and very possible to influence the subsequent behavior.

TABLE 6. Coefficient of Reliability

Construct	α
LOY	0.8143
INT	0.7554
ATT	0.7653
SUB	0.7626
PER	0.7672
SAT	0.7251

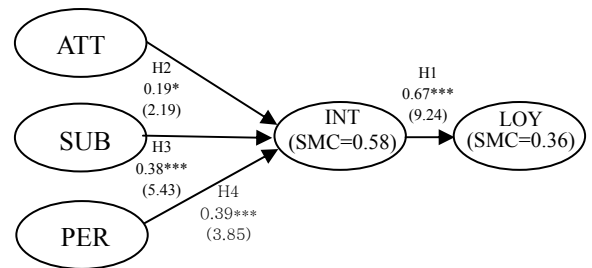


FIG 3. Structure Model with Parameter Estimation

TABLE 7. Effects of Path Analysis

Latent endogenous variable	Latent exogenous variable	Indirect	Direct	t-value	Total
INT	ATT	-	0.19	2.19*	0.19
	SUB	-	0.38	5.43***	0.38
	PER	-	0.39	3.85***	0.39
LOY	INT	-	0.67	9.24***	0.67
	ATT	0.13	-	2.16*	0.13
	SUB	0.26	-	4.93***	0.26
	PER	0.26	-	3.66***	0.26

* $p<0.05$, ** $p<0.01$, *** $p<0.001$

TABLE 8. Test of Hypotheses

Hypothesis	t value	Decision
H1	9.24***	Accepted
H2	2.16*	Accepted
H3	4.93***	Accepted
H4	3.66***	Accepted

*p<0.05, **p<0.01, ***p<0.001

This study defines the concept of SAT as a perceived level of electronic transaction quality resulting when a customer purchases merchandise and receives services on the Internet. This study also proposes that SAT has components such as product satisfaction with price [12, 30, 43], time and energy consumed [12, 30, 43], and quality of product from Internet shopping [28]; and service satisfaction with service items [30, 31], order and transaction processing [12, 28, 30, 43, 44] and services after sales [24, 28, 35, 42].

As shown in Figure 4, SAT is proposed to influence LOY and to be influenced by INT. The two added research hypotheses are as follows:

- H5: Behavior intention has positively effect on satisfaction of online customers.
- H6: Satisfaction has positively effect on loyalty of online customers.

In Figure 4, all path coefficients are significant indicating that the hypothesized relationships H1~H6 are supported. The SMC of LOY is 0.44 for the alternative model greater than 0.36 for the base model. This indicates that the alternative model has higher explained proportion of variance in the endogenous variable “online customer loyalty”.

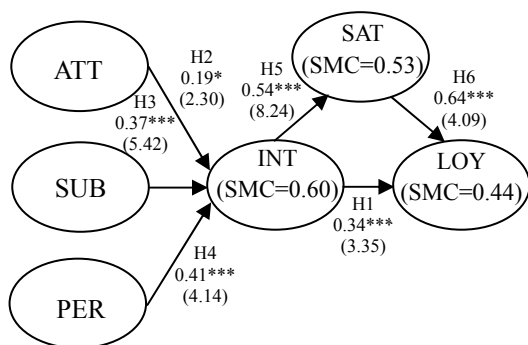


FIG 4. Alternative Model with Parameter Estimates

The results of model comparison are shown in Table 9. χ^2/df is 2.45168 for the alternative model smaller than 2.63994 for the base model. This indicates that the alternative model has a smaller χ^2 value corresponding to better fit after considering the degrees of freedom. And the comparison for other goodness-of-fit measures is as the follows:

- The CFI-values are the same.
- Although NFI is 0.93 for the alternative model smaller than 0.94 for the base model, the NNFI values are even indicating that the fits for the two

models are the same after considering the degrees of freedom.

- RMSEA is 0.059 for the alternative model slightly smaller than 0.062 for the base model. This indicates that the alternative model fit the data a little better.
- SRMR is 0.071 for the alternative model a little smaller than 0.072 for the base model. This indicates that the alternative model is with a slightly smaller error.
- ECVI [10], AIC and CAIC [4] are indexes indicating the level of model parsimony, especially useful for comparing competing models. The smaller the three indexes, the more parsimonious the model is. The ECVI, AIC, and CAIC values for the base model smaller than the ones for the alternative model. This indicates that the base model is more parsimonious.

TABLE 9. Model Comparison

Fit measure	Base model	Alternative model
χ^2	905.50	1350.88
df	343	551
χ^2/df	2.63994	2.45168
CFI	0.96	0.96
NFI	0.94	0.93
NNFI	0.96	0.96
RMSEA	0.062	0.059
SRMR	0.072	0.071
ECVI	2.44	3.58
AIC	1031.5	1508.88
CAIC	1349.49	1907.62

In summary, both the base model and the alternative model are acceptable when judged by the criteria of goodness-of-fit measures. The alternative model fits the data slightly better by having smaller χ^2/df , RMSEA, and SRMR. The alternative model also has higher explained proportion of variance in LOY than the base model. However, the base model is more parsimonious.

VI. Discussion and Conclusion

Internet, one of the fastest growing media, was developed for facilitating the supply of all kinds of products and service. It attracts millions of people to participate the online activities everyday through the friendly explorer interfaces. In addition to providing electronic information and integrated functions, the next stage of company websites is to provide electronic transaction service including online order and payment mechanisms [22]. It's essential for website owners to have knowledge of the behavior of online customers. How to attract more people to visit and shop on the website, and continue to become a loyal customer is extremely of importance.

The study develops a research model of loyalty for online customers based on TPB. Some results are found after

the SEM analysis:

- TPB can be used to explain the loyal behavior of online customers.
- Behavior intention directly influences the actual loyal behavior of online customers. This result indicates that if we want to keep an individual continuing to purchase online, it's practical to increase the intensity of his/her behavior intention.
- Attitude toward behavior is the largest effect factor for behavior intention of online customers. The second effect factor is subjective norm. And the last one is perceived behavioral control. The result indicates that the factors which influence the intention in sequence are: the positive feeling and evaluations the users have toward the online behavior, the reference opinions from surrounding people, and the final is the capability and resource of the users to use the Internet.
- In the alternative model, behavior intention indirectly influences loyalty of online customers through the mediated variable satisfaction. The SMC of loyalty for the alternative model is 44% exceed 36% for the base model. The result displays that the alternative model has a great explanatory power on loyalty of online customers.

The research limit of this research is that the data were not randomly selected. Most samples are collected from the college/graduate students. Although the online users are in reality younger and have higher academic background [26, 28], the results still cannot be generalized. In addition, the universities in Taiwan have provided overall environment for the Internet use and basic courses of computer information are opened in many departments. Hence, the samples collected in this research may cause a lower estimation of the influence of Perceived Behavioral Control of online customers.

The future research can expand to various influential models, and continue discussing these influential factors that involve in users' adoption of online behavior. In the SEM analysis, the comparison of competing models can help to measure and evaluate these influential factors and their effects. Besides, this research expects to examine competing models such as moderated models and multi-group models, in order to establish a better research model for explaining the online behaviors.

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TABLE 3. Descriptive Statistics of Respondents' Characteristics (N=423)

Characteristic	Range	Frequency	Percentage	Cumulative percentage
Gender	Male	190	44.9 %	44.9%
	Female	223	55.1 %	100 %
Age	≦ 20	91	21.5 %	21.5 %
	21~25	246	58.2 %	79.7 %
	26~30	48	11.3 %	91.0 %
	31~35	23	5.4 %	96.5 %
	36~40	8	1.9 %	98.3 %
	≧ 41	7	1.7 %	100 %
Career	Student	338	79.9%	79.9 %
	Military, public servant, teacher	32	7.6 %	87.5 %
	Health cares	26	6.1 %	93.6 %
	business and Manufacturing	12	2.8 %	96.4 %
	Financial and banking	3	0.7 %	97.1 %
	Info and mass communication	2	0.4 %	97.5 %
	Other	10	2.4%	100 %
Education	Senior high school	11	2.6 %	2.6 %
	Junior college	13	3.1 %	5.7 %
	College	310	73.3 %	79.0%
	Graduate school	89	21.0 %	100 %
Purchase frequency within one year	1-2	164	38.8 %	38.8 %
	3-4	110	26.0 %	64.8 %
	5-6	65	15.4 %	80.1 %
	7-8	19	4.5 %	84.6 %
	9-10	22	5.2 %	89.8 %
	≧ 11	43	10.2 %	100 %
Average of purchase expenditure	≦ NT 500	144	34.0 %	34.0 %
	NT 501~1000	155	36.6 %	70.7 %
	NT 1001~2500	73	17.3 %	87.9 %
	NT 2501~5000	35	8.3 %	96.2 %
	NT 5001~10000	10	2.4 %	98.6 %
	≧ NT 10000	6	1.4 %	100 %

TABLE 4. ML Estimates and Fit Indexes for Measurement Model of LOY, INT and SAT

	Var.	Std. solution	Completel y Std	Std. error	t-value		Var.	Std. solutio	Completel y Std	Std. error	t-value
LOY2	0.58	0.72	0.07	12.74	SAT2	0.46	0.53	0.14	7.55		
LOY3	0.66	0.78	0.07	13.55	SAT3	0.39	0.40	0.14	6.25		
LOY4	0.66	0.77	0.07	13.37	SAT5	0.47	0.49	0.15	7.20		
LOY5	0.55	0.53	0.08	9.62	SAT6	0.50	0.61	0.14	8.19		
INT	INT1	0.63	0.77	-	-	SAT7	0.45	0.51	0.14	7.36	
	INT2	0.59	0.74	0.06	14.61	SAT8	0.58	0.63	0.16	8.32	
	INT3	0.65	0.77	0.07	15.14	$\chi^2=340.83$, $df=116$, $\chi^2/df=2.93818$, $p=0.00000$ CFI=0.96, NFI=0.93, NNFI=0.95 IFI=0.96 GFI=0.91, PGFI=0.69, RMSEA=0.068 RMR=0.044, SRMR=0.055					
	INT4	0.54	0.67	0.07	13.20						
	INT5	0.24	0.25	0.08	4.75						

TABLE 5. ML Estimates and Fit Indexes for Measurement Model of ATT, SUB and PER

	Var.	Std. solution	Completely Std solution	Std. error	t-value		Var.	Std. solution	Completely Std solution	Std. error	t-value
SUB2	0.69	0.88	0.07	16.24	ATT2	0.49	0.56	0.11	6.82		
SUB3	0.65	0.83	0.07	15.61	ATT3	0.56	0.65	0.12	7.23		
SUB4	0.59	0.68	0.08	13.01	ATT4	0.62	0.67	0.13	7.30		
SUB6	0.27	0.29	0.08	5.58	ATT5	0.63	0.68	0.13	7.33		
SUB8	0.28	0.27	0.09	5.24	ATT6	0.61	0.64	0.13	7.17		
PER	PER1	0.49	0.53	-	-	ATT7	0.60	0.63	0.13	7.17	
	PER4	0.60	0.66	0.13	9.31	$\chi^2=378.66$, $df=132$, $\chi^2/df=2.86863$, $p=0.00000$ CFI=0.96, NFI=0.94, NNFI=0.96 IFI=0.96 GFI=0.91, PGFI=0.70, RMSEA=0.067 RMR=0.052, SRMR=0.059					
	PER5	0.64	0.73	0.13	9.80						
	PER6	0.69	0.77	0.14	10.04						
	PER7	0.52	0.52	0.13	8.04						