

Comparisons of Competing Models between Attitudinal Loyalty and Behavioral Loyalty

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Abstract

A literature review identifies several classifications of customer loyalty; the most common are attitudinal and behavioral loyalties. Traditional studies, however, have not yet examined customer loyalty within a framework of these classifications. To address this deficit, this study uses linear structural modeling to explore the differences between attitudinal and behavioral loyalty models; 295 department store shoppers were used as subjects to determine how the influences of corporate image, switching costs and customer satisfaction found in an attitudinal loyalty model differ from those of a behavioral loyalty model. The results demonstrate that while these two competing models have goodness of fit, when comparing models with non-nested structures, behavioral loyalty exhibits better performance. In addition, no significant difference is observed between the influence of corporate image and that of customer satisfaction in attitudinal or behavioral loyalty model. Conversely, switching cost is shown to have a stronger influence on behavioral loyalty than it does on attitudinal loyalty.

Keyword : attitudinal loyalty, behavioral loyalty, corporate image, switching cost, customer satisfaction

Introduction

Oliver (1999) points out that since the 1970s, the number of studies focusing on customer satisfaction has declined as a result of the belief that pursuing customer loyalty is a more central imperative for business. Reichheld (1996) and Reynolds and Arnold (2000) agree that customer loyalty has become essential to business operation. According the research from Kumar and Shah (2006), Lam et al. (2004), Fullerton (2005), Bove et al. (2009), both attitudinal and behavioral dimensions of loyalty are considered to be equally critical. Attitudinal loyalty explains a consumer's identification with a particular service provider and preference of a product or service over alternatives (Jones and Taylor, 2007), when a customer is behaviorally loyal, he intends to repurchase the same brand and by that, maintain a relationship with a particular service provider (Jones and Taylor, 2007; Andreasen and Lindestad, 1998).

There are many articles separate loyalty into Attitudinal and behavioral loyalty. Most part of research treat Attitudinal loyalty as antecedent of behavioral loyalty (Bandyopadhyay, Martell, 2007; Jacoby, Kyner, 1973; Pritchard, Havitz, Howard, 1999; East, Gendall, Hammond, Lomax, 2005; Russell-Bennett, McColl-Kennedy, Coote, 2007; Reynolds and Arnold, 2000; Carpenter, 2008), but some are not, like Labeaga, Lado and Martos (2007) argue corporate image increase behavioral loyalty significantly. Reynolds and Beatty (1999) find satisfaction effect behavioral loyalty directly. Day (1969) mention behavioral loyalty happen because chance, custom or other factors, not necessary cause by attitudinal loyalty. Chaudhuri and Holbrook (2001) use attitudinal and behavioral loyalty as causes impact on market share, the believed the relationship of attitudinal and behavioral loyalty to be interrelated not cause-effect.

Sharp et al. (2002) further implicate attitudinal and behavioral loyalty has low relative. Based on the reasons

describe above illustrate, the study try to use the same antecedent variables to predict attitudinal and behavioral loyalty at the same time to understand what's the difference between attitudinal and behavioral loyalty. Most customer loyalty studies integrate multi-dimensional concepts into a single construct comprising: "repurchase intention", "recommendation intention", "customer retention", or "price tolerance". Researchers tally these components, combining them into a single dependent variable to determine factors that affect loyalty. According to studies by Kumar and Shah (2006), Lam et al. (2004), and Fullerton (2005), there are two kinds of loyalty: behavioral loyalty and attitudinal loyalty. Behavioral loyalty ensures that customer loyalty can be converted into actual purchase behaviors. While attitudinal loyalty will not ensure that customers will purchase merchandise themselves, they will, through word-of-mouth, help to create a positive image of a business to others. This may not directly bring profit, but will indirectly create a positive result. We determined the most common to comprise: behavioral loyalty (a substantial element) and attitudinal loyalty (a psychological construct). Hence, this study attempts to use the same variables to make predictions of behavioral and attitudinal loyalties to identify the differences between the behavioral loyalty model and attitudinal loyalty model.

With a rise in national income and the attendant swell in consumer spending, increasing numbers of Taiwanese consumers are shopping at department stores, giving this segment the largest share of the general merchandise retailing industry. According to 2010 data from the Department of Statistics at the Ministry of Economic Affairs, about 30% of business turnover from general merchandise retailing comes from department stores (including shopping malls). This makes department stores the leading segment within the general merchandise retailing industry (which also includes supermarkets, convenience stores and warehouses). Hence, this study used department store shoppers as research subjects to conduct an empirical study. The findings will be provided to department stores in the hope that they will provide guidance as management devises and implements different strategies for building behavioral and attitudinal loyalties among customers

Literature Review

1. Definition and Classification of Customer Loyalty

(1) Definition of Customer Loyalty

Customer loyalty is a customer's sense of belonging or identification with the employees, services or products of a company; these feelings have a direct impact on customer behavior (Jones and Sasser, 1995). Dick and Basu (1994) argue that loyalty is multi-dimensional. It does not simply indicate whether a customer will make repeat purchases; it also serves as a measure of customer support for a business. Zeithaml et al. (1996) and Bloemer and Odekerken-Schroder (2002) describe customer loyalty as a multi-dimensional construct consisting of purchase intention, recommendations, price tolerance, word of mouth, complaint behavior, and propensity to leave. In summary, customer loyalty is a customer's sense of identification with a business. This sense of identification affects repurchases intentions, spending amount, the possibility of recommendation, and even the willingness to become part of a business.

(2) Classifications of Customer Loyalty

Ganesh et al. (2000) empirically derive two distinct dimensions of the loyalty construct: active and passive loyalty. Active loyalty behaviors are those that require a conscious and deliberate effort to undertake, and are reflected in both purchase behavior and purchase intentions. Passive loyalty can be identified when customer purchase behaviors or intentions are affected by a change in price or switching cost.

Kumar and Shah (2006) describe two alternate forms of loyalty: behavioral loyalty and attitudinal loyalty. For
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Lam et al. (2004) loyalty is manifested in two other ways: repeat patronage and recommendation. Fullerton (2005) uses repurchase intention and advocacy to evaluate consumer brand loyalty to a single retailer; “advocacy” here is understood to signify positive word-of-mouth, meaning that customers will recommend a retailer to others. More researcher focus loyalty on attitudinal loyalty and behavioral loyalty (Kumar and Shah, 2006; Jones and Taylor, 2007; Kumar and Reinartz, 2006; Bove et al., 2009). Behavioral loyalty means consumers’ repurchase behavioral or intension of specific brand (Russell-Bennett et al. 2007). Attitudinal loyalty means consumers’ sense of specific products or service (Kumar and Reinartz, 2006). Bowen and Chen (2001) describe three approaches for the evaluation of customer loyalty: (1) behavioral measurement, (2) attitudinal measurement, and (3) composite measurement (a combination of behavioral and attitudinal measurements). From a review of the above literature, among the various classifications for customer loyalty, we determined the most common to comprise: attitudinal loyalty (a psychological construct) and behavioral loyalty (a substantial element). Generally speaking, studies on loyalty do not subdivide loyalty. This study attempts to distinguish behavioral loyalty from attitudinal loyalty and examine their differences.

Factors Influencing the Evaluation of Customer Loyalty

Customer Satisfaction

Customer satisfaction is determined by customer perception: following a service or purchase evaluation, customers form emotional perspectives toward a product (Churchill and Surprenant, 1982). Anderson et al. (1994) suggest that overall customer satisfaction is based primarily on the experience and satisfaction while purchasing merchandise or services: it is both an emotional evaluation and a process of comparison between a “pre-consumption expectation” and the “post-consumption perceived performance”. Customer satisfaction is the most widely discussed independent variable in studies on customer loyalty (Ibanez, Hartman and Calvo, 2006; Auh and Johnson, 2005; Host and Knie-Anderson, 2004; Hellier, Gaurson, Rondey and Rechard, 2003.) Bei and Chiao (2001) interviewed 495 customers across 15 service departments at Mitsubishi, Nissan and Toyota dealers.

The results suggested that the higher the customer satisfaction, the higher the loyalty to the company. Reichheld and Saser (1990) argue that improved customer satisfaction will affect the likelihood of repeat purchases. Tailor and Baker (1994) based their studies on four service industries in their examination of the relationships between service quality, customer satisfaction, and customer purchase intention. They determined that customer satisfaction is positively correlated to purchase intention. Fornell et al. (1996) also maintain that after a customer purchases a product or service, an attitude will be formed, which is satisfaction. If satisfaction is high, the likelihood of repeat patronage is great. This will create an attitudinal loyalty whereby the customer will recommend the product or service through word of mouth. In other words, customer satisfaction has a positive impact on both behavioral and attitudinal loyalty.

Service Quality

Service quality is a customer’s evaluation of overall superiority of a service encounter; it is a perceived, not objective, quality. The PZB model is most commonly used for evaluating service quality. Parasuraman et al. (1988) refined the PZB model by subdividing it into five aspects: Tangibility, Reliability, Responsiveness, Assurance, and Empathy. They created the 22 question service quality scale for the evaluation of a customer’s expected service quality and his/her perceived service quality.

This SERVQUAL model has been widely used in various service industry studies. Cronin and Taylor (1992)

proposed the SERVPERF (SERVice PERFormance) service quality scale, positing service quality can be measured by simple service results. This method evaluates service quality through a measurement of perceived service. Most studies maintain that customer satisfaction is based primarily on service quality. Bolton and Drew (1991) claim that service quality is the antecedent of customer satisfaction. Cronin and Taylor (1992) determined that higher service quality leads to improved customer satisfaction. Anderson and Sullivan (1993) also agree that service quality affects satisfaction, emphasizing that customer satisfaction is an integrated appraisal of the post-purchase experience. Ibanez et al. (2006) argue that the technical quality of a core service as well as the technical quality of peripheral and service process qualities also affect customer satisfaction, but that service quality does not directly affect loyalty: it affects loyalty only through satisfaction. A study by Host and Knie-Anderson (2004) contends that among the five constructs of service quality, reliability and assurance can best predict satisfaction. This study also classifies service quality as an antecedent variable of customer satisfaction.

Corporate Image

Corporate image is a consumer's perception of a corporate entity. This image will remain in a consumer's mind further affecting purchase behaviors or intentions. By means of the products, services and related information, consumers develop a subjective appraisal of a corporation, thus forming a corporate image. Robertson and Gatignon (1986) believe that a positive corporate image can decrease uncertainty in consumer decision making and establish a high level of recognition among certain businesses. Josee and Gaby (2002) defined corporate image as a society's overall impression, including the interaction between physical and invisible elements. In summary, corporate image is an integrated perception that represents the degree to which consumers identify with a business.

Nguyen and LeBlanc (1998) argued that corporate image has significant influence on customer loyalty and plays a key role in customer retention. Josee and Gaby (2002) used 357 European supermarket chain customers as subjects and determined that corporate image affects loyalty, they also proved that corporate image influences purchase decisions; the better a corporate image, the greater both the purchase frequency and dollar amount spent. The majority of department stores in Taiwan enjoy high brand awareness; however, consumers hold varying perceptions toward each department store in terms of image and reputation. In this study, a "corporate image" variable is included in the customer loyalty model in order to determine if this psychological variable exhibits differences when it comes to affecting behavioral and attitudinal loyalty.

Switching Costs

Switching cost can make it difficult or expensive for customers to switch service providers. When customers are considering switching service providers, they evaluate both the benefits and the costs; when required costs are higher than gained benefits (meaning an excessively high switching cost) an exit barrier is created, thus decreasing the possibility of switching (Jones et al., 2000). Hauser et al. (1994) point out that, when switching costs increase, sensitivity to satisfaction decreases. Therefore, switching costs play an important role when a customer considers changing service providers. Many studies indicated that perceived switching cost is an important factor when it comes to customer loyalty (Storbacka et al., 1994; Jones et al., 2000; Sharma and Patterson, 2000; Lewis, 2002; Whitehead, 2003). Many case studies reveal that an unsatisfied customer may continue with the same vendor only because he/she believes that extra time and effort spent on switching, will be costly.

In a study by Anderson and Sullivan (1993), it was found that in the airline and banking industries, customers

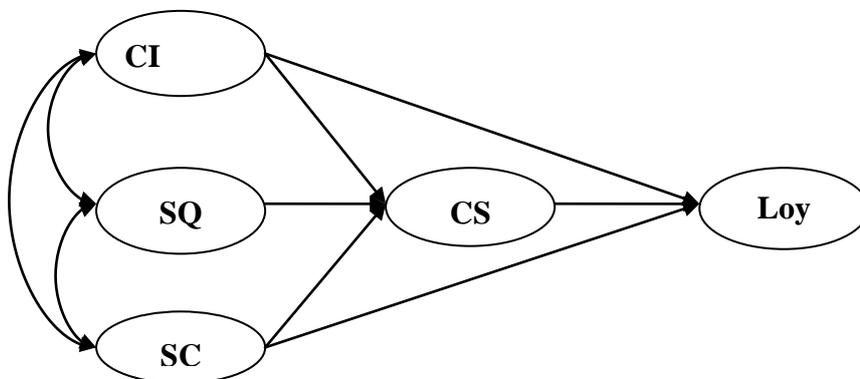
will remain with the same business even when the service quality deteriorates; however, in the case of supermarkets, they will switch if service quality decreases, because the switching cost for airlines and banks is higher than that of supermarkets; it can be concluded then, that customers have a higher sensitivity to the service quality of supermarkets; hence, when switching cost is low, customer loyalty can not be over-estimated. In this study, a switching cost variable is included in the customer loyalty model in order to determine if this substantial variable exhibits differences when it comes to affecting behavioral and attitudinal loyalty

Research Methodology

This study analyzes the department store business within the distribution industry and explores the influence of customer satisfaction, switching cost and corporate image on customer loyalty. Loyalty is divided into attitudinal loyalty and behavioral loyalty. Competing models were used to compare the two and to determine the differences among the influences of each factor.

Conceptual Models

Structural Equation Modeling (SEM) and Amos 18.0 were employed to conduct data analysis and model verification. Following a completion of the literature review, we summarized the information and built two competing models. Later, these two models were compared to allow us to choose the one which demonstrate higher adequacy and best represent the sample data. Figure 1 shows the conceptual model. Please note that, when analyzing loyalty, we used two separate conceptual models representing attitudinal loyalty and behavioral loyalty.



Note CI: corporate image; SQ: service quality; SC: switching cost; CS: customer satisfaction; Loy: included attitudinal loyalty(AL) and behavioral loyalty(BL).

Figure 1: Conceptual Model

Hypothesis

Chin (1998) subject in SEM analysis should be avoided is providing hypotheses statements for each structural path in the model. The only hypotheses we need is whether the model fit the data or not. So , the first hypothesis supposes that there is no difference between the model’s expected covariance matrix and the sample covariance matrix: $S - \Sigma(\theta) = 0$ (S denotes the sample covariance matrix, $\Sigma(\theta)$ denotes the model’s expected covariance matrix). Since this is a competing model, two sub-hypotheses were formed:

Hypothesis 1: There is no difference between the model’s expected covariance matrix and the sample covariance matrix

H_{0a} : There is no difference between the expected covariance matrix of the attitudinal loyalty model and the

sample covariance matrix

H_{0b} : There is no difference between the expected covariance matrix of the behavioral loyalty model and the sample covariance matrix

This study explores whether there is any difference in how psychological variables, such as corporate image, and substantial variables, such as switching cost, influence psychological attitudinal loyalty and substantial behavioral loyalty. Because the satisfaction construct is an essential factor in most loyalty analyses, three hypotheses have been formed:

Hypothesis 2: A corporate image has no more influence on attitudinal loyalty than it does on behavioral loyalty

Hypothesis 3: Customer satisfaction has no more influence on attitudinal loyalty than it does on behavioral loyalty

Hypothesis 4: Switching cost has no more influence on attitudinal loyalty than it does on behavioral loyalty

Operational Definition of Variables

To record consumer shopping behavior at department stores, a nominal scale was used to measure the frequency that consumers shopped at department stores. Nominal and ordinal scales were used for the demographics variables, with 6 questions that included: gender, age, marital status, occupation, education, and average monthly income. A 7-point Likert Scale was used for all variables in the study. Table 1 summarizes the operational definitions of the variables and the sources of related literature

Table 1: Operational Definitions for Variables and the Sources of Questions

Construct	Operational Definition	Sources
Attitudinal Loyalty	a consumer's identification with a particular service provider and preference of a product or service over alternatives	Jones and Taylor, 2007
Behavioral Loyalty	Customers' intentions for repeat patronage, repeat purchase, and actual purchase behavior	Kumar and Shah, 2006; Jones and Taylor, 2007; Bove et al., 2009)
Service Quality	Tangibility: service facilities, equipment, people, planning and implementation of service products Reliability: the ability to deliver promised services in a dependable, accurate manner Responsiveness: the willingness to spontaneously help customers and provide prompt service Assurance: service people with etiquette and expertise are available to help; the ability to inspire customer trust Empathy: customers are treated with special care and attentiveness	Parasuraman et al. (1990)
Customer Satisfaction	An integrated appraisal after a consumer's encounter with the store (e.g. product offerings, overall performance, pricing, etc.)	Anderson et al. (1994), Ibanez et al. (2006)
Corporate Image	The image (impression) of the business (store) in consumer minds; consumer identification with the business	Nguyen and Le Blanc (2001), Chang and Tu (2005)
Switching Cost	Barriers or costs as evaluated by customers when considering switching service providers	Jones et al. (2000), Fornell (1992), and Kim et al. (2004)

Estimation of Research Sample Size

SEM is an analysis technique for a large sample size. The general requirement for SEM is that the ratio for the observed variables to the sample size is between 1:10 and 1:15, while a sample size between 200 and 400 is appropriate (Hair et al. 1998). A method developed by MacCallum, Browne and Sugawara (1996) was employed for this study while R Language was used for programming. Root Mean Square Error of Approximation (RMSEA) was used to compute the sample size: for H_0 , RMSEA = 0.05, while the power was 0.8; for alternative hypothesis H_1 , RMSEA = 0.06, and degree of freedom was estimated to be 520. After computing, the sample size required for this study was 196.875. The number of valid samples gathered was 295, thus meeting the requirement for SEM sample analysis.

Subjects and Sampling Method

Department store shoppers were used as research subjects. Samples were collected using two methods: (1) interviewers intercepted shoppers who had made purchases at department stores in Kaohsiung, and (2) shoppers residing elsewhere were asked to fill out online questionnaires (emails with a link to the questionnaire were sent to the subjects). An Internet survey was conducted from the 5th of July to the 5th of October, 2009; 125 questionnaires were collected online; 99 were deemed valid while 26 were eliminated (as respondents indicated they did not shop at department stores). In the same time, interviewers intercepted respondents in front of department stores on weekends. 223 questionnaires were collected at department stores; 196 were deemed valid after incomplete questionnaires were eliminated. The total number of valid questionnaires collected was 295.

Since the samples came from two different sources, before combining the data, we conducted a homogeneity test to avoid inaccurate inferences. A Chi-square test was conducted for gender, marital status, age, education, and average monthly income to test homogeneity. Because the type of data contained categorical variables, SPSS 18.0 was used to perform the χ^2 test. The Chi-square values for each variable's test result were 1.54, 0.037, 0.85, 3.829, and 9.407. The p value for each variable was above 0.05; this means that information on gender, marital status, age, education, and average monthly income did not differ between the sources; therefore, we were able to confidently combine these two groups.

The majority of the 295 valid samples were female (200 people), and 95 were male; subject age ranged from 20 to 50 years old: 124 subjects were aged between 21 and 30, and 124 subjects were aged between 31 and 50. In terms of education, 8 subjects had high school education or less, 46 had junior college degrees, 185 had college degrees, and 56 had masters degrees or beyond. The majority (90) of subjects had military/government/teaching positions, while 57 held positions in business; other subjects held positions across various fields. For average monthly income, 56 subjects earned less than NT\$25K, 130 (the majority) earned between NT\$25K-\$60K, 55 earned between NT\$60K-NT\$90K, 40 earned NT\$90K-\$150K, and 14 earned more than NT\$150K (32 New Taiwan Dollar = 1 U.S. Dollar).

Measurement and Structural Model Analysis

Verification of Convergent Validity

Confirmatory Factor Analysis (CFA) is a part of SEM analysis. Thompson (2004) suggests that before conducting an analysis of structural models, SEM researchers should first analyze measurement models, since measurement models can correctly reflect the constructs of a study. The reduction of variables in the CFA measurement model was modified using the two-stage model by Kline (2005). The measurement model was examined before conducting the evaluation.

If the fit for the measurement model was acceptable, then we proceeded to the second step and conducted a complete SEM model evaluation. CFA analysis was applied to all six constructs: service quality, switching cost, corporate image, customer satisfaction, behavioral loyalty, and attitudinal loyalty. The loadings for all constructs ranged from 0.65 to 0.9, and all showed significance. Composite reliability values fell between 0.8 and 0.9, and the average variance extracted was between 0.46 and 0.78 (as shown in Table 2). These data meet the requirements of Hair et al. (2009) and Fornell and Larcker (1981): 1. Factor loading was above 0.5; 2. Composite reliability was above 0.6; 3. Average variance extracted was above 0.5; 4. The square of the multiple correlation coefficient was above 0.5. Even though satisfaction was slightly below 0.5, it is still within an acceptable range. All other constructs met the requirements; therefore, each of the six constructs showed evidence of convergent validity

Table 2: convergent validity of constructs

construct	index	Std. loading	Unstd. loading	χ^2	χ^2 (value)	P value	SMC	C.R.	AVE
SQ	tangibility	0.714	0.529	0.05	10.354	***	0.844		
	reliability	0.884	0.73	0.05	13.654	***	0.782		
	responsiveness	0.897	0.835	0.05	16.177	***	0.51	.914	.682
	assurance	0.919	0.722	0.06	11.326	***	0.804		
	empathy	0.687	0.512	0.05	9.766	**	0.472		
SC	SC1	0.89	1				0.793		
	SC2	0.876	1.052	0.06	17.25	***	0.767	.847	.588
	SC3	0.664	0.738	0.06	12.492	***	0.441		
	SC4	0.594	0.718	0.07	10.831	**	0.353		
CI	CI1	0.862	1				0.742		
	CI2	0.964	1.085	0.05	19.993	***	0.929	.899	.75
	CI3	0.759	0.875	0.06	15.888	***	0.577		
CS	CS1	0.625	1				0.391		
	CS3	0.686	1.103	0.12	8.995	***	0.47		
	CS4	0.676	1.117	0.13	8.911	***	0.457	.81	.46
	CS5	0.738	1.28	0.14	9.408	***	0.545		
	CS6	0.66	1.08	0.12	8.759	**	0.435		
	AL1	0.68	1				0.462		
AL	AL2	0.865	1.234	0.09	13.37	***	0.748	.915	.78
	AL3	0.935	1.283	0.09	14.115	***	0.874		
BL	BL1	0.872	1				0.76		
	BL2	0.938	1.103	0.05	20.642	***	0.88	.907	.77
	BL3	0.81	0.937	0.05	17.558	***	0.657		

Verification of Discriminant Validity

Discriminant validity assesses whether two constructs differ statistically. This study employs the confidence interval method (Torkzadeh, Koufteros, Pflughoeft, 2003): if the confidence interval between two constructs does not include 1, they are deemed completely relevant revealing evidence of discriminant validity between the two constructs. When we built the confidence interval for the correlation coefficient at a 95% level in SEM, a bootstrap was used for estimation. If the confidence interval did not include 1, then the null hypothesis was rejected pointing to evidence of discriminant validity between the two constructs. Otherwise, there was no evidence of discriminant validity. Hancock and Nevitt, J. (1999) recommend that when calculating path coefficients, bootstrapping needs to be conducted at least 250 times. In this study, when conducting bootstrapping procedures, the computer program was set to re-sample for 1,000 times in order to estimate the confidence interval of a standardized correlation (at a 95% confidence level). AMOS bootstrap provides two methods for estimating confidence interval: the Bias-corrected Percentile Method, and the Percentile Method. The results of these two estimation methods are shown in the table 3. As we can see from the table 3, neither of the confidence intervals in the standardized correlation includes 1, therefore, there is evidence of discriminant validity between constructs.

Table 3: discriminant validity between constructs

Parameter	Estimate	Bias-corrected		Percentile	
		Lower	Upper	Lower	Upper
SQ <--> SC	0.484	0.355	0.588	0.357	0.595
SQ <--> CI	0.46	0.307	0.586	0.323	0.605
SQ <--> CS	0.712	0.578	0.810	0.588	0.818
SQ <--> BL	0.357	0.204	0.493	0.205	0.494
SQ <--> AL	0.528	0.343	0.673	0.358	0.686
SC <--> CI	0.23	0.084	0.371	0.085	0.373
SC <--> CS	0.416	0.247	0.532	0.271	0.548
SC <--> BL	0.408	0.245	0.539	0.257	0.543
SC <--> AL	0.426	0.266	0.555	0.282	0.571
CI <--> CS	0.48	0.331	0.592	0.337	0.596
CI <--> BS	0.242	0.102	0.373	0.096	0.364
CI <--> AL	0.538	0.405	0.657	0.396	0.655
CS <--> BL	0.323	0.184	0.455	0.180	0.445
CS <--> AL	0.542	0.4	0.660	0.401	0.661
BL <--> AL	0.477	0.377	0.573	0.371	0.568

Overall Fit for Competing Models

When SEM is used to verify a theoretical model, a greater goodness of fit is required for SEM analysis (Byrne, 2010): the better the fit, the closer the model matrix and the sample matrix. This study accepted the opinions of the following scholars in order to conduct the assessment of overall model fit: Schreiber (2008), McDonald and Ho (2002), Boomsma (2000), Jackson Gillasp, Andpurc-Stephenson (2009), Hoyle and Panter (1995), Schreiber, Stage, King, Nora and Barlow (2006).

Several fit indices were selected: a χ^2 test, the ratio of χ^2 to degree of freedom, the Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), the Root Mean Square Error of Approximation (RMSEA), the Non-Normed Fit Index (NNFI), the Incremental Fit Index (IFI), the Comparative Fit Index (CFI), and the Standardized Root Mean Square (SRMR). When conducting the comparison between the non-nested competing models, three information fit indices were also included: the Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC), and the Expected Cross-Validation Index (ECVI) For structural model comparison, two competing models were created: Model 1 was an attitudinal loyalty model and Model 2 was a behavioral loyalty model. Table 4 illustrates a goodness of fit comparison for behavioral and attitudinal loyalties between the competing models. Because the questions asked in the questionnaire were not identical for both models (the number of questions was three for the models), the models contain non-nested structures.

Fit indices ECVI, AIC and BIC were used for the comparison: the lower the value, the better the model fit. From Table 6 we can see that the values of ECVI, AIC and BIC for the behavioral loyalty model were smaller than those for attitudinal loyalty although these two sets of data do not show huge differences. Δ CFI is less than 0.01 and thus does not meet the significance criteria (Cheung and Rensvold, 2002.) Most of the fit indices meet the requirements for SEM analysis; even though the values for GFI and AGFI do not exceed 0.9 (the threshold value), they still met the requirement suggested by Baumgartner and Homburg (1995), and Doll, Xia, and Torkzadeh (1994): the value is acceptable if above 0.8. SRMR is also close to the threshold value, while the RMSEA values for both models are below 0.08. The confidence interval at a 90% level does not include 0.08, meaning that it is not a coincidence that RMSEA was below 0.08; therefore, these two competing models have better or great goodness of fit. Hence, hypothesis 1 is valid: Model 1 and Model 2 do not differ from the sample matri

Table 4: overall models fit comparison of competing models

Model fit	Acceptable level	Model 1 attitudinal loyalty	Model 2 behavioral lopyalty
χ^2	smaller, the better	1077.45 (p=.000)	1041.26 (p=.000)
χ^2/df	<3	1.858 (df=580)	1.795 (df=580)
GFI	>0.9	.835	.838
AGFI	>0.9	.811	.814
RMSEA	<0.08	.054 90% CI=[.049 .059]	.052 90% CI=[.047 .057]
SRMR	<0.5	.0505	.0527
TLI (NNFI)	>0.9	.913	.917
IFI	>0.9	.920	.924
CFI	>0.9	.920	.924
ECVI	smaller, the better	4.250	4.127
AIC	smaller, the better	1249.45	1213.26
BIC	smaller, the better	1566.53	1530.35

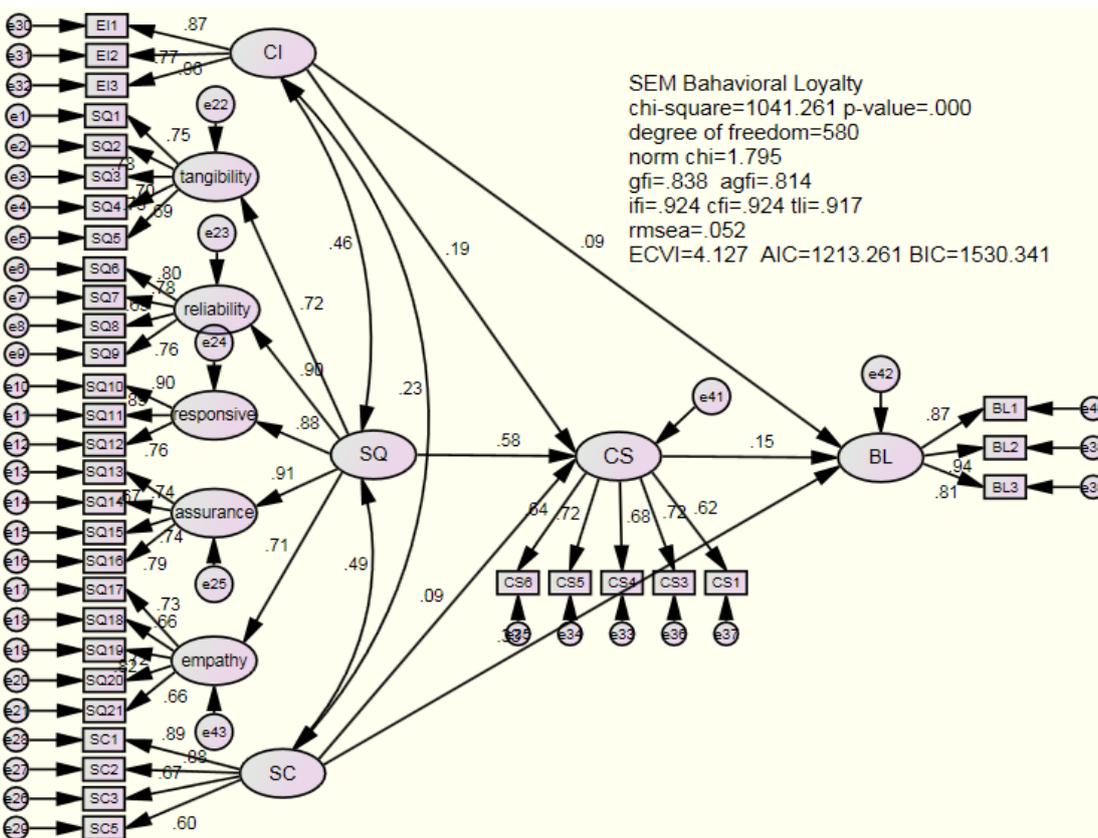
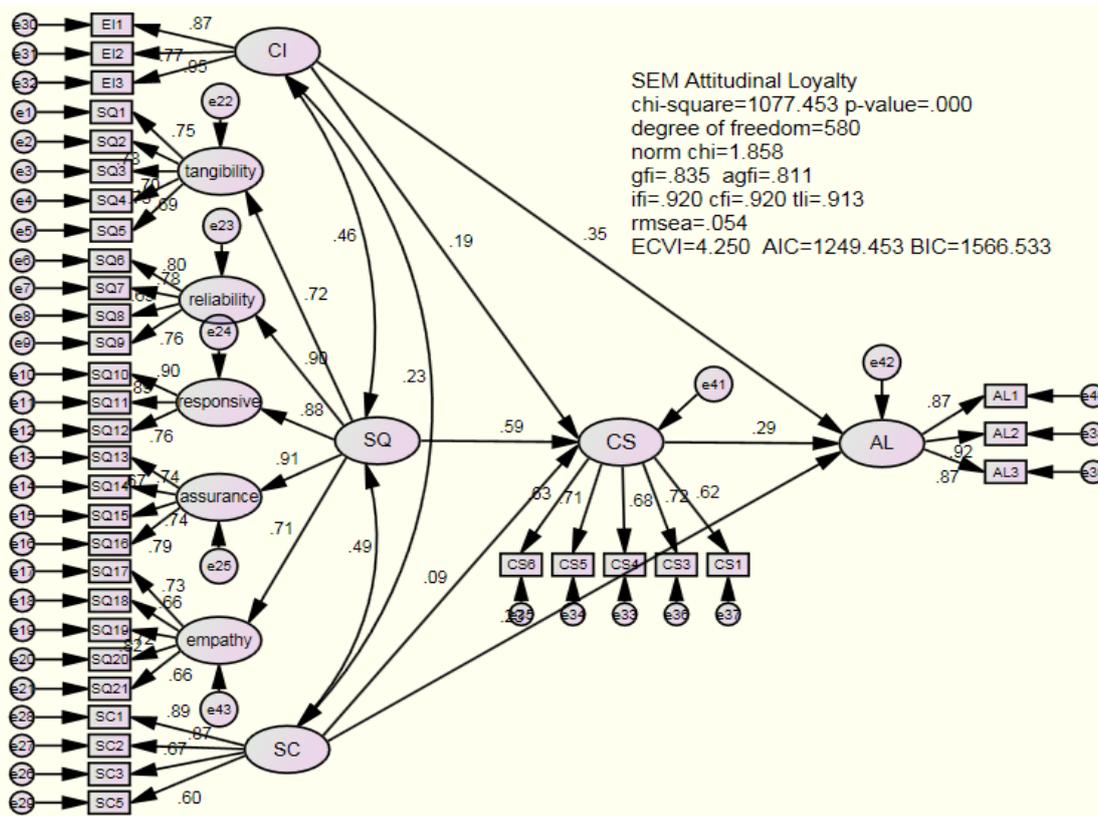


Figure 2: statistical models of attitudinal and behavioral loyal

Path Coefficient for Loyalty Structural Model

We can determine from the study results in Table 5 that in the attitudinal loyalty structural model, the regression coefficient for switching cost and satisfaction does not show significance; the regression coefficients for any two of the alternate constructs show significance.

Table 5: the path coefficients of attitudinal loyalty's statistical model

construct			Std. weight	Unstd. weight	S. E.	C.R. (t-value)	P value	SMC
SQ	→	CS	0.589	0.914	0.144	6.329	***	
SC	→	CS	0.086	0.082	0.06	1.378	0.168	.549
CI	→	CS	0.189	0.151	0.049	3.092	0.002	
CS	→	AL	0.295	0.345	0.083	4.156	***	
CI	→	AL	0.347	0.325	0.056	5.765	***	.447
SC	→	AL	0.226	0.252	0.066	3.803	***	

From the study results in Table 6, we determined that in the behavioral loyalty structural model, neither the regression coefficient for switching cost and satisfaction nor the regression coefficient for corporate image and behavioral loyalty shows significance. The regression coefficients for service quality and satisfaction, for switching cost and satisfaction, and for switching cost and behavioral loyalty do show significance

Table 6: the path coefficients of behavioral loyalty's statistical model

construct			Std. weight	Unstd. weight	S. E.	C.R. (t-value)	p	SMC
SQ	→	CS	0.583	0.9	0.144	6.262	***	
SC	→	CS	0.09	0.085	0.06	1.423	0.155	.543
CI	→	CS	0.189	0.151	0.049	3.094	0.002	
CS	→	BL	0.154	0.276	0.141	1.953	0.051	
CI	→	BL	0.091	0.132	0.097	1.358	0.174	.207
SC	→	BL	0.326	0.554	0.119	4.663	***	

Cross-validation

In order to further assess the stability of the model, this study tested the invariance of two sample groups that included an analyses of factor loading, structural/ path coefficient and factor covariance of the measurement model. If these values from the two groups show no variance, it is an indication that the model has stability (showing evidence of cross-validation.) We used a random sampling distribution feature in SPSS 18 to obtain two sample groups; 295 samples were randomly selected and evenly distributed into two sample groups: one containing 142 (48.1%) samples and the other containing 153 (51.9%) samples.

Assuming that the researcher's model is correct, we compared the invariance of the two sample groups for attitudinal loyalty; the result is shown in Table 7. First, the factor loadings of the two groups were set as equal. The attitudinal loyalty structural model contained 27 factor loadings (DF=27), each set with the same value. In this way, when CMIN increased to 35.119, and the test result to P=.136; the level of significance .05 was not reached. This means that it was acceptable for these 27 factor loadings to be set equally; therefore, we determined that the 27 factor loadings were equal. 2.

Besides maintaining the limitations of the measurement model, 10 more settings for the structural path coefficient were added. In this way, when CMIN increased to 19.127, and test result to P=.039; a level of significance .05 was reached. This indicates that these 10 structural path coefficients were not equal, and that $\Delta CFI = 0.002$, not meeting the practical significance criteria. 3. In addition to maintaining the limitations of the measurement model, 6 more variances and covariances were added. In this way, when CMIN increased to 14.1212, and the test result to P=.028; the level of significance .05 was reached; however, $\Delta CFI = 0.001$ did not meet the practical significance criteria. This indicates that it was acceptable for these 6 variances and covariances to be set equally. These 6 variances and covariances were then set equally.

Table 7: Invariance of attitudinal loyalty

Model	χ^2	df	Δdf	$\Delta \chi^2$	P	CFI	RMSEA	p close fit
Unconstrained	1844.074	1160	—	—	.000	.893	.045	.987
Measurement weights	1863.589	1187	27	19.516	.850	.894	.044	.995
Structural weights	1884.617	1197	10	21.027	.021	.892	.044	.994
Structural covariances	1892.453	1203	6	7.837	.250	.892	.044	.995
Structural residuals	1906.815	1210	7	14.362	.045	.891	.044	.994
Measurement residuals	2013.055	1246	36	106.239	.000	.880	.046	.970

In comparing the invariance of the two sample groups on behavioral loyalty, from Table 8 we determined that when CMIN increased to 36.36, and the test results to P=.108, the level of significance .05 was not reached. In addition, when CMIN increased to 10.82, and the test result to P=.099, the level of significance at .05 was not reached. This indicates that it is acceptable to set these 10 structural path coefficients equally; therefore, the value of 10 structural path coefficients were deemed identical. In addition to maintaining the limitations of the measurement model, 6 more variances and covariances were added. In this way, CMIN increased to 12.84, and the test result to P=.046, thus reaching the level of significance .05; however, $\Delta CFI = 0.000$, lower than the threshold of 0.01, indicating that it is acceptable for these 6 variances and covariances to be set equally. These 6 variances and covariances were then set equally.

Table 8: Invariance of behavioral loyalty

Model	χ^2	df	Δdf	$\Delta \chi^2$	P	CFI	RMSEA	p close fit
Unconstrained	1851.278	1160	—	—	.000	.891	.045	.984
Measurement weights	1887.637	1187	27	36.359	.108	.889	.045	.988
Structural weights	1898.456	1197	10	10.818	.372	.889	.045	.990
Structural covariances	1911.296	1203	6	12.840	.046	.888	.045	.989
Structural residuals	1927.499	1210	7	16.204	.023	.886	.045	.987
Measurement residuals	1993.903	1246	36	66.404	.002	.882	.045	.984

The analyses above meet the requirements of Kline’s (2005) “moderate testing”: if the data from two sample groups shows homogeneity, this means the two groups are equal. Once these two groups pass a cross-validation examination (meaning the model was not falsely built or designed), a comparison of the competing models can proceed.

Comparison of Variance between Competing Model Coefficients

As previously discussed, the two competing models showed fairly good reliability, validity and model fit. Therefore, we further examined the variance between the two models. This study asked whether the

influence of independent variables (corporate image, switching cost and satisfaction) on an attitudinal loyalty model differ from that on a behavioral loyalty model. Duncan (1975) recommends that standardized and non-standardized coefficients be used when conducting a comparison of coefficients of different models. However, he contends that using non-standardized coefficient testing better captures the essence of statistics. As a result, this study used a non-standardized coefficient examination; Duncan’s formula is as follows:

$$z = \frac{b_1 - b_2}{\sqrt{se_{b_1}^2 + se_{b_2}^2}}$$

If the absolute value for a z score is greater than 1.96, then there is a significant difference between the two non-standardized regression coefficients; otherwise, there is no significant difference. From the analysis result shown in Table 9, the influence of satisfaction on attitudinal and behavioral loyalty shows no significant difference, although satisfaction was shown to have a greater influence on attitudinal loyalty. The influence of corporate image on attitudinal loyalty was greater than that on behavioral loyalty (although the data was close to the threshold of significance). As for switching cost, its influence on behavioral loyalty was significantly greater than it was on attitudinal loyalty.

Table 9: comparison of competing models’ coefficient

	Attitudinal loyalty		Behavioral loyalty		z	p
	Unstd. Coefficient	s.e.	Unstd. Coefficient	s.e.		
CS	0.345	0.083	0.276	0.141	.421	.067
CI	0.325	0.056	0.132	0.097	1.72	.085
SC	0.252	0.066	0.554	0.119	2.22	.026

Conclusion

Comparison of Competing Models

This study found that the behavioral loyalty model was slightly superior to the attitudinal loyalty model; however, there was no significant difference between the goodness of fit in the two models. This result differs from that of Bowen and Chen (2001) who contend that better predictability can be achieved if a synthetic evaluation of attitudinal loyalty and behavioral loyalty is conducted. The results are different because in the abovementioned study, the correlation of loyalty sub-constructs is high, whereas in this study loyalty sub-constructs show only medium or low correlations. Only when the correlations of attitudinal and behavioral loyalties are high can synthetic evaluation be conducted. In other words, if future researchers want to conduct research on a loyalty model, they should take the correlation of sub-constructs into consideration since it can be an indicator of the need for a synthetic evaluation.

From the comparison between competing models of attitudinal loyalty and behavioral loyalty, we determined that only the influence of switching cost on attitudinal loyalty significantly differs from that on behavioral loyalty, and that influence of switching cost on behavioral loyalty is greater than that on attitudinal loyalty. The influence of switching cost on attitudinal loyalty is as significant as that on behavioral loyalty, meaning that it has influence on both kinds of loyalty:

this finding matches the results of most previous studies (Jones et al., 2000; Sharma and Patterson, 2000; 162

Lewis, 2002; Whitehead, 2003.) Regarding the influence of corporate image on attitudinal and behavioral loyalties, corporate image and attitudinal loyalty are significantly and positively correlated. This proves that corporate image has an impact on loyalty. This result matches the study results of Allison and Philip (2004), Nguyen and LeBlanc (1988), and Josee and Gaby (2002). On the other hand, corporate image does not show a significant influence on behavioral loyalty; this result differs from H.C.Huang's study (2001.) Satisfaction shows a positive and significant influence on attitudinal loyalty. This result agrees with most previous studies, for they used synthetic methods to evaluate loyalty; however, in this study, satisfaction was not shown to have a significant influence on behavioral loyalty. This result is at odds with the study results obtained by Fornell et al. (1996): the greater a customer's satisfaction, the stronger the possibilities of repeat patronage.

Managerial Implication of Variables' Significant/Insignificant Influences on Attitudinal Loyalty and Behavioral Loyalty

Building customer loyalty is a critical goal in business. Customer loyalty can be categorized into attitudinal and behavioral loyalty. This study has determined that satisfaction, corporate image and switching cost all show significant and positive influences on attitudinal loyalty; therefore, if we want to improve consumer attitudinal loyalty (that is, creating positive word-of-mouth or persuading consumers to recommend to others), improving customer satisfaction, holding events that build corporate image and raising customer switching costs are all feasible solutions. It was found from the analysis of the behavioral loyalty model that corporate image does not have a significant influence on behavioral loyalty, and that the influence of satisfaction on behavioral loyalty verges on the level of significance: only switching cost shows a significant and positive influence on behavioral loyalty; therefore, if we want to stimulate repurchase intentions, raising switching cost becomes a priority. Service staff must spend more time cultivating relationships with customers, customized services should be provided, deeply cut prices or discounts should be provided to existing customers, and services provided should differ from those at other department stores.

Each of these implementations can increase the possibility of repurchase intentions; however, enhancing corporate image is not an effective way to stimulate consumer purchase intentions and behavior. It is far-fetched to expect a company to stimulate purchase behaviors or intentions only through the enhancement of corporate image. This explains why a department store with a solid corporate image still needs to hold numerous promotions (e.g. co-branded cards, discounts, gifts, etc.) to attract customers and increase its business turnover during annually-held anniversary sale events. In addition, this study suggests that when switching cost is low, real customer loyalty can not be over-estimated. If a department store uses switching cost as a variable for market differentiation, it can better allocate its efforts based on a combination of varying satisfaction levels and varying customer switching costs. For example, a department store must allocate a significant portion of its efforts on those customers that communicate a high level of satisfaction but perceive switching costs to be low. These customers show high levels of loyalty to the department store and make significant contributions to the business's bottom line.

Research Restrictions and Directions for Future Research

The main purpose of this study was to explore and discuss a comparison of competing models; however, there are quite a few independent variables not mentioned in the loyalty model.

Future studies might aim to determine the antecedent factors for attitudinal and behavioral loyalties in the

hope of conducting business diagnoses using a method which is both economical and effective.

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