

A CUSTOMER LOYALTY MODEL FOR E-SERVICE CONTEXT

Pin Luarn

Department of Business Administration
National Taiwan University of Science and Technology
luarn@ba.ntust.edu.tw

Hsin-Hui Lin

Department of Business Administration
National Taiwan University of Science and Technology
brenda@ocit.edu.tw

ABSTRACT

While the importance of customer loyalty has been recognized in the marketing literature for at least three decades, the conceptualization and empirical validation of a customer loyalty model for e-service context has not been addressed. This paper describes a theoretical model for investigating the three main antecedent influences on loyalty (attitudinal commitment and behavioral loyalty) for e-service context: trust, customer satisfaction, and perceived value. Based on the theoretical model, a comprehensive set of hypotheses were formulated and a methodology for testing them was outlined. These hypotheses were tested empirically to demonstrate the applicability of the theoretical model. The results indicate that trust, customer satisfaction, perceived value, and commitment are separate constructs that combine to determine the loyalty, with commitment exerting a stronger influence than trust, customer satisfaction, and perceived value. Customer satisfaction and perceived value were also indirectly related to loyalty through commitment. Finally, the authors discuss the managerial and theoretical implications of these results.

Keywords: Loyalty, e-service, trust, customer satisfaction, perceived value

1. Introduction

Retaining customers is a financial imperative for electronic vendor (e-vendor), especially as attracting new customers is considerably more expensive than for comparable, traditional, bricks-and-mortar stores (Reichheld and Schefter, 2000). Understanding how or why a sense of loyalty develops in customers remains one of the crucial management issues of our day. Aaker (1991) has discussed the role of loyalty in the brand equity process and has specifically noted that brand loyalty leads to certain marketing advantages such as reduced marketing costs, more new customers, and greater trade leverage. In increasingly competitive markets, being able to build loyalty in consumers is seen as the key factor in winning market share (Jarvis and Mayo, 1986) and developing sustainable competitive advantage (Kotler and Singh, 1981). While the importance of brand loyalty has been recognized in the marketing literature for at least three decades (Howard and Sheth, 1969), the conceptualization and empirical validation of a loyalty model for e-service context has not been addressed. E-commerce success, especially in the business-to-consumer area, is determined in part by whether consumers show loyalty to a particular e-service provider they cannot touch. Thus, research attention should more fruitfully focus on the development and validation of a loyalty model for e-service context.

Recognizing that a vital key to retaining customers is maintaining their trust in the e-vendor (Reichheld and Schefter, 2000), this study investigates customer trust as a primary factor for customer commitment and loyalty. In addition, our study incorporates customer satisfaction and perceived value as additional explanatory variables in understanding the determinants of why online customers show attitudinal commitment and behavioral purchase loyalty to a specific e-service provider. Accordingly, the primary purpose of this study is to explore the factors (i.e., customer satisfaction, trust, and perceived value) that influence attitudinal commitment and purchase loyalty in an e-service environment. This paper is structured as follows. First, we discuss the concept of e-service. Subsequently, the study defines the constructs of interest and develops a model of the relationships between the constructs. A comprehensive review of the marketing literature provides a theoretical basis for clarifying what the constructs mean. Next, hypotheses were proposed concerning these relationships. The methods, measures, and results of this study were then presented. Finally, the results were discussed in terms of their implications for research and managerial activity. Based on the findings of this study, Internet marketers will be able to justify expenditures, which promote increased online customer loyalty.

2. Conceptualization of E-Services

The concept of e-service seems to be inextricably linked to e-business. Several conceptualizations of e-service have been offered in the literature (de Ruyter et al., 2001; van Riel et al., 2001; Featherman and Pavlou, 2002; Pollard, 2003). As de Ruyter et al. (2001) contend, the self-service kind of marketplace environment has already made more and more customers look for company access and customer support through the Internet. In addition to the provision of peripheral service such as customer support, an increasing number of service providers are using electronic ways to distributing their core products/services (de Ruyter et al., 2001). Featherman and Pavlou (2002) also suggest that e-services enable electronic communication, information gathering, transaction processing and data interchange within and between businesses across time and space. Turban et al. (2002) defined pure e-commerce as a case where the product, the agent, and the process are all digitized. In most cases, products that are traded must be physically delivered to the customer, making pure e-commerce impossible. However, with the digital product/service industry, pure e-commerce can be used in most cases, since the industry deals with contents that can be digitized easily. When companies deal with pure e-commerce, the potential advantages are the greatest, since automating the entire process (including product/service delivery) can result in a substantial cost reduction. Delivering value-added, interactive services to customers on-line, in real time, in a shared community of users seems increasingly important to gaining a competitive edge in the electronic marketplace by strengthening relationships with key constituencies (de Ruyter et al., 2001). Consequently, banks, travel agencies, airlines, car rental companies, job placement agencies, real estate agencies, insurance agencies, brokerage houses, online publishers (e.g., newspapers, magazines, music, videos, games, and other digitizable information), management consulting companies and educational institutions are increasingly opting for online service delivery to meet e-customer demand (Forrest and Mizerski, 1996; Turban et al., 2002). Aforementioned issues lead us to compose the following conceptualization of e-service: "E-service is an interactive content-centered and Internet-based customer service, driven by customer and integrated with related organizational customer support processes and technologies with the goal of strengthening the customer-service provider relationship" (de Ruyter et al., 2001, p.185). With the rapid growth and proliferation of e-service, it seems, therefore, imperative to know what factors influence customer attitudinal commitment and repeat purchase behaviors towards e-service.

3. Research Model and Hypotheses

Given that an e-service in the Internet context is an electronic channel through which consumers received products/services, trust in electronic channel, customer satisfaction with e-service, and perceived value of products/services provided by an e-service vendor should work together to influence the decision to participate in repeat purchase with a particular e-service vendor. The research model used to guide the study is shown in Figure 1, which suggests that customer satisfaction, trust, and perceived value are all directly and indirectly related to loyalty, with the indirect path occurring through commitment. This section elaborates on the theory base and derives the hypotheses.

3.1 Definitions and Models

Oliver (1999) defines brand loyalty as "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior." This definition emphasizes the two different aspects of brand loyalty that have been described in prior studies on the concept—behavioral and attitudinal (Aaker, 1991; Jacoby and Chestnut, 1978; Oliver, 1999; Jacoby and Kyner, 1973; Day, 1969). Still, this view is not universally held, as others suggest that the two constructs are either not related (Oliva et al., 1992) or that they are synonymous and represent each other (Assael, 1987). Chaudhuri and Holbrook (2001) suggest that behavioral, or purchase, loyalty consists of repeated purchases of the brand, whereas attitudinal brand loyalty includes a degree of dispositional commitment in terms of some unique value associated with the brand. Hence, an intermediate view on the matter asserts the constructs are related, yet by definition are distinct, with commitment leading to loyalty (Beatty et al., 1988). In this study, commitment is defined as a consumer's psychological attachment to an e-service that develops before a customer would be able to determine that their repeat purchase behavior was derived from a sense of loyalty (Beatty and Kahle, 1988). Loyalty is defined as the intention of a consumer to repurchase products/services through a particular e-service vendor.

Trust has been conceptualized by previous research in a variety of ways, both theoretically and operationally, and researchers have long acknowledged the confusion in the field (e.g., Lewis and Weigert, 1985; McKnight et al., 1998, 2002; Shapiro, 1987). In e-commerce contexts, the diversity in trust conceptualization is also evident (Gefen et al., 2003). Prior studies have viewed trust as (a) trusting beliefs (Doney and Cannon, 1997; Ganesan, 1994; Gefen and Silver, 1999; McKnight et al., 1998, 2002; Gefen et al., 2003) or (b) trusting intentions (Gefen, 2000; Hosmer, 1995; Moorman et al., 1992; Mayer et al., 1995; McKnight et al., 1998, 2002). In e-commerce environment, trusting beliefs, which have also been referred to as "trustworthiness" by Mayer et al. (1995), are consumers' perceptions of particular attributes of e-vendors, including the abilities, integrity, and

benevolence exhibited by the vendors when they handle the consumers' transactions (McKnight et al., 2002; Kim and Benbasat, 2003). Trusting intentions means "the trustor is securely willing to depend, or intends to depend, on the trustee" (McKnight et al., 2002, p.337). Most researchers agree that trusting beliefs positively influence trusting intentions (McKnight et al., 1998, 2002; Kim and Benbasat, 2003; Gefen et al., 2003; Jarvenpaa and Tractinsky, 1999; Mayer and Davis, 1999; Mayer et al., 1995). Commonly discussed trust-related behavioral intentions in electronic commerce include sharing personal information, making a one time or repeating purchase, or acting on information provided by an e-vendor. Although some researchers have treated trust as a unitary concept (e.g., Rotter, 1971), most now agree that trust is multidimensional (Mayer et al., 1995; Rousseau et al., 1998; McKnight et al., 2002). In consonance with the definition of trust adopted by Gefen et al. (2003), this study defines trust is a set of specific beliefs dealing primarily with the integrity (trustee honesty and promise keeping), benevolence (trustee caring and motivation to act in the trustor's interest), competence (ability of trustee to do what the trustor needs), and predictability (trustee's behavioral consistency) of a particular e-service vendor (McKnight et al., 2002; Doney and Cannon, 1997; Ganesan, 1994; Gefen and Silver, 1999; Giffin, 1967; Larzelere and Huston, 1980). Gefen et al. (2003) suggest that this definition relies on separation between trust and actual behavioral intentions (e.g., repeat purchase intentions) in the ongoing economic relationship of customers and e-vendors, and that this trust conceptualization is akin to that of other studies dealing with ongoing economic relationships (e.g., Crosby et al., 1990; Gefen, 2002), including those with e-vendors (Jarvenpaa et al., 2000). We also included "predictability" dimension into our trust conceptualization because it is more relevant to an ongoing trust model than to an initial trust model (McKnight et al., 1998, 2002).

Traditionally, user satisfaction was employed as a label of IS success (Bailey and Pearson, 1983), and therefore frequently measured in past studies. Both user information satisfaction (UIS) and end-user computing satisfaction (EUCS) scales have been used to measure user satisfaction indirectly through information quality, system quality, and other variables (Bailey and Pearson, 1983; Ives, et al., 1983; Doll and Torkzadeh, 1988). Based on seven indirect measuring factors of overall level of Web customer satisfaction, Wang et al. (2001) developed a 21-item instrument for measuring customer satisfaction with a particular Web site that markets digital products/services. However, the concept of IS and/or e-commerce success has been refined in the context of integrated IS and/or e-commerce success models, including DeLone and McLean (1992, 2003), Seddeon (1997), and Molla and Licker (2001) models, to develop causal relations between antecedents (indirect measures) of overall user/customer satisfaction (e.g., system quality and information quality), overall user/customer satisfaction, and consequents of overall user/customer satisfaction (e.g., individual impact and customer loyalty). Given our interest in capturing a overall measure of customer satisfaction with e-service and concerns about survey length and respondent convenience, the conceptualization of customer satisfaction adopted here therefore corresponds to the summary affective response or feeling of a customer in relation to her/his experience with all aspects of an e-service put in place by an organization to market its products and services (Molla and Licker, 2001).

It is widely known that perceived value, the potential key determinant of loyalty, is composed of a "get" component--that is, the benefits a buyer derives from a seller's offering--and a "give" component--that is, the buyer's monetary and nonmonetary costs of acquiring the offering (e.g., Dodds et al., 1991; Zeithaml, 1988). This study focuses primarily on product and service quality, including Web site quality, as the get component and on time and money spent as the give component (Grewal et al., 1998; Lichtenstein et al., 1990; Zeithaml, 1988; Parasuraman and Grewal, 2000).

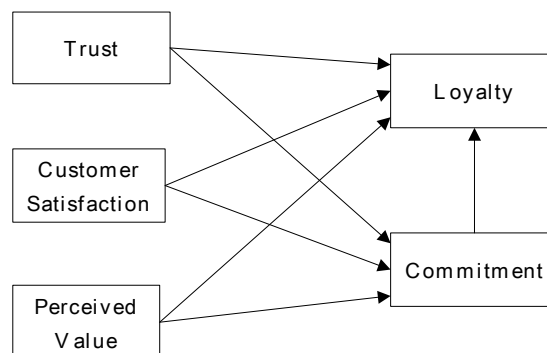


Figure 1. The Research Model

3.2 Hypotheses

As mentioned previously, it has been suggested that loyalty includes some degree of predispositional commitment toward a brand. Therefore, our notion of customer loyalty in this study includes both attitudinal commitment and behavioral purchase loyalty (see Figure 1). Based on the emerging theory of brand

commitment in relationship marketing (e.g., Fournier, 1998; Gundlach et al., 1995; Morgan and Hunt, 1994; Parasuraman and Grewal, 2000; Chaudhuri and Holbrook, 2001), we propose that trust, customer satisfaction, and perceived value are each related to both commitment and loyalty, consistent with the concept of one-to-one marketing relationships.

Trust is vital in many business relationships (Dasgupta, 1988; Fukuyama, 1995; Gambetta, 1988; Gulati, 1995; Kumar et al. 1995; Ganesan, 1994; Moorman et al. 1992), especially those containing an element of risk, including interacting with an e-vendor (Reichheld and Scheffer, 2000; Gefen et al., 2003). Lacking effective regulation in the Internet context, consumers have to trust that the e-service vendor will not engage in harmful opportunistic behaviors, or else the overwhelming social complexity will cause them to avoid purchasing (Gefen, 2000). Some researchers have suggested that online customers generally stay away from e-vendors whom they do not trust (Jarvenpaa and Tractinsky, 1999; Reichheld and Scheffer, 2000). Following McKnight et al. (1998, 2002), we integrate trust-related constructs mentioned earlier within the broad framework of the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975). TRA posits that beliefs lead to attitudes, which lead to behavioral intentions, which lead to the behavior itself. Applying the viewpoints of TRA, we posit that trusting beliefs (perceptions of specific e-service vendor attributes) lead to trust-related attitude (i.e., attitudinal commitment), which in turn result in intentions to engage in trust-related behaviors with a specific e-vendor (i.e., behavioral loyalty). As mentioned earlier, most researchers also agree that trusting beliefs directly influence trusting intentions (e.g., repeat purchase intentions) (McKnight et al., 1998, 2002; Kim and Benbasat, 2003; Gefen et al., 2003). We did not measure actual behavior in this study because prior research has confirmed a strong correlation between behavioral intentions and actual behavior (Sheppard et al., 1998; Venkatesh and Davis, 2000).

In the marketing literature, Morgan and Hunt (1994) also suggest that brand trust leads to brand loyalty and commitment because trust creates exchange relationships that are highly valued. Thus, loyalty or commitment underlies the ongoing process of continuing and maintaining a valued and important relationship that has been created by trust (Chaudhuri and Holbrook, 2001). We suggest that trust will contribute to both commitment and loyalty. Trusted e-services should be purchased more often and should evoke a higher degree of attitudinal commitment. Thus, the following hypotheses are tested:

H1a: Trust will positively affect loyalty.

H1b: Trust will positively affect commitment.

Dick and Basu (1994) have proposed that brand loyalty should be greater under conditions of more positive emotional mood or affect. The brands that make consumers happy or joyful or affectionate should prompt greater behavioral (purchase) loyalty and attitudinal commitment (Chaudhuri and Holbrook, 2001). Similarly, consumer satisfaction is believed to mediate consumer learning from prior experience and to explain key postpurchase behaviors, such as complaining, word of mouth, repurchase intention, and product usage (Oliver, 1980; Westbrook and Oliver, 1991). Indeed, Wang et al. (2001) has suggested that Web customer satisfaction have a significant influence on repurchase intention and postpurchase complaint. Therefore, we test the following hypotheses:

H2a: Customer satisfaction will positively affect loyalty.

H2b: Customer satisfaction will positively affect commitment.

Perceived value is the perceived e-service utility relative to its monetary and nonmonetary costs, assessed by the consumer and based on simultaneous considerations of what is received and what is given up to received it. Clearly, quality of product/service and Web site is a logical driver of perceived value. In instances where the core of what the e-vendor offers to the customers is a digitized product/service (e.g., online banking, content aggregators, and online stock trading), there is no tangible product and, as such, it is difficult for consumers to differentiate product quality, service quality, and Web site quality. Even in instances where the e-vendor offers to the buyers is a physical product, superior presale and postsale service rendered by the e-vendor can add to the benefits received (get component) and also reduce the customer's nonmonetary cost such as time, effort, and mental stress (give component). Furthermore, part of the "give" and "get" of the experience also involves the Web site quality. The online consumer gives time, cognition and effort to the experience of interacting with the Web site, and gets an experience enabled by the Web site that hopefully makes it easy to find needed/wanted products, to checkout quickly and to received confirmation about all important aspects of the purchase, such as order-confirmation and delivery-tracking. In this regard, the product quality, service quality, and Web site quality are also intertwined with each other.

Cumulative insights from prior studies support the general notion that perceived value contributes to customer loyalty (e.g., Parasuraman and Grewal, 2000; Dodds et al., 1991; Grewal et al., 1998; Voss et al., 1998). The value-loyalty linkage is also consistent with Reichheld's (1996) work on loyalty. Regardless of

whether the core offerings of an e-vendor are products or services, customer perceived value of products/services and Web quality provided by an e-vendor should be positively related to customer loyalty and commitment. Parasuraman and Grewal (2000) suggest that the influence of perceived value on loyalty is an issue in need of more empirical research. Therefore, this study tests the following hypotheses:

H3a: Perceived value will positively affect loyalty.

H3b: Perceived value will positively affect commitment.

Based on the TRA mentioned earlier, attitudinal commitment positively influences intentions to engage in repeat purchase behaviors with a specific e-vendor. Previous studies of purchase behavior (Beatty and Kahle, 1988), consumer expectations (Kelley and Davis, 1994), and advertising effectiveness (Robertson, 1976) all attest to commitment's ability to affect a variety of outcomes. Kiesler and Sakumura (1966) described customer commitment as a stable preference that was bound by an attitude of resistance to change. Crosby and Taylor (1983) also suggest that the "tendency to resist changing preference" provides the principle evidence of commitment. As the principle evidence of commitment, resistance to change is central to a variety of outcomes, the foremost of which is loyalty (Jacoby and Kyrner, 1973). Therefore, this study tests the following hypothesis:

H4: Commitment will have a positive effect on Loyalty

In sum, previous researches have implied that attitudinal commitment and behavioral loyalty should be the product of trust in e-service, customer satisfaction with e-service, and perceived value of products/services provided by an e-service vendor. But these perspectives have been examined independently by IS and marketing researcher. Integrating these perspectives and empirically examining the factors that build customer loyalty in an e-service context that lacks the typical human interaction advances our understanding of these constructs and their linkage to repeat Web purchase behavior.

4. Methodology

4.1 Measures

To ensure the content validity of the scales, the items selected must represent the concept about which generalizations are to be made. Therefore, items selected for the constructs were mainly adapted from prior studies to ensure content validity. Four items for the trust construct were adapted from Gefen et al. (2003). The items to measure customer satisfaction were taken from previous measures of overall level of user satisfaction or Web customer satisfaction (Wang et al., 2001; Doll et al., 1988; Palvia, 1996; Rai et al., 2002). Perceived value was measured by three items adapted from Lassar et al. (1995). Items for the loyalty were taken from the previous validated inventory (Chaudhuri and Holbrook, 2001) and modified to fit the e-service context studied. Finally, commitment was measured by four items adapted from the Pritchard et al. (1999) "resistance to change" scales. Likert scales (1~7), with anchors ranging from "strongly disagree" to "strongly agree" were used for all questions. Pre-testing and pilot testing of the measures were conducted by selected consumers from the B2C e-commerce field, as well as experts in the e-commerce research area. The items were modified to make them relevant to the e-service context. The Appendix lists the items used in this study.

4.2 Subjects

This study used online traveling services and video on demand (VOD) as the e-service categories of reference because these two categories are among the most popular B2C e-services. Data used to test the research model was gathered from a quota sample of 180 respondents attending an e-commerce exposition and symposium held in Taiwan, with an equal quota of 90 responses from each category of the traveling and VOD e-services. Respondents were asked first whether they had bought the traveling or VOD products/services through the e-service vendors, and if they replied in the affirmative, they were asked to participate in a survey. The screened and qualified respondents self-administered a 16-item questionnaire. The first part of the questionnaire focused on demographic data, while the second part required respondents to name one e-service vendor where they had purchased the product/service in question. This served to anchor the survey to a particular e-service vendor. For each question, respondents were asked to circle the response which best described their level of agreement with the statements.

A total of 572 approaches were made to obtain 180 completed surveys. Reasons for nonparticipation were either due to non-usage of the e-service category or a lack of time to complete the survey. 72 percent of the completed surveys were from male respondents. Respondents ranged from 16 to 45 years of age (mean = 32 years). 52 percent had completed one college or university degree.

5. Results

5.1 Measurement Assessment

Construct validity determines the extent to which a scale measures a variable of interest. In this study, we follow the Straub's (1989) processes of validating instruments in MIS research in terms of convergent validity and discriminant validity. Thus, a principal components factor analysis with varimax rotation was conducted to investigate the distinctions among customer satisfaction, trust, perceived value, commitment, and loyalty. In this study, Bartlett's test of sphericity ($p=0.00$) indicated the statistical probability that the correlation matrix has significant correlations among at least some of the variables, and the Kaiser-Meyer-Olkin measure of sampling adequacy (0.872) showed middling sampling adequacy. As shown in Table 1, the five factors emerged with no cross-construct loadings above 0.5, indicating good discriminant validity. The instrument also demonstrated convergent validity with factor loadings exceeding 0.5 for each construct. Consequently, these results confirm that each of the five constructs is unidimensional and factorially distinct and that all items used to operationalize a particular construct is loaded onto a single factor.

Reliability was evaluated by assessing the internal consistency of the items representing each construct using Cronbach's alpha. The reliability of each construct was as follows: customer satisfaction = 0.90; trust = 0.93; perceived value = 0.91; commitment = .94; loyalty = .89. All the values were above 0.8, exceeding the common threshold values recommended by Nunnally (1978).

Table 1. Factor Analysis Results: Principal Component Extraction

Scale items	Commitment	Trust	Perceived Value	Customer Satisfaction	Loyalty
C3	0.900				
C1	0.839				
C2	0.832				
C4	0.811				
T4		0.861			
T3		0.858			
T2		0.835			
T1		0.793			
V1			0.866		
V3			0.855		
V2			0.821		
S3				0.873	
S2				0.821	
S1				0.675	
L1					0.719
L2					0.615

Note: Suppress absolute values < 0.50.

5.2 Hypothesis Testing

The hypothesized relationships were tested using the multiple regression analysis of SPSS 9.0 for Windows. The average scores of the items representing each construct were used in the data analysis¹. The R^2 was used to assess the model's overall predictive fit. Properties of the causal paths, including standardized path coefficients, t-values, and variance explained for each equation in the hypothesized model are presented in Figure 2. In hypotheses H1a, H2a, H3a, and H4, we investigate the influence of trust, customer satisfaction, perceived value, and commitment on loyalty. As expected, trust ($\beta=0.163$, $t\text{-value}=2.707$, $p<0.01$) and customer satisfaction ($\beta=0.219$, $t\text{-value}=3.588$, $p<0.001$) had a strong positive influence on the loyalty. Also, perceived value ($\beta=0.230$, $t\text{-value}=4.237$, $p<0.001$) and commitment ($\beta=0.392$, $t\text{-value}=6.755$, $p<0.001$) had a significant positive effect on the loyalty. Therefore, hypotheses H1a, H2a, H3a, and H4 were supported. We found that the proposed model explained a significant percentage of variance in loyalty ($R^2=65.7\%$, $F\text{-value}=83.692$, $p<0.001$). According to the path coefficients shown in Figure 2, commitment exhibited the strongest direct effect on loyalty.

Hypotheses H1b, H2b, and H3b examine the paths from trust, customer satisfaction, and perceived value to commitment. Customer satisfaction ($\beta=0.343$, $t\text{-value}=4.580$, $p<0.001$) and perceived value ($\beta=0.302$, $t\text{-value}=4.534$, $p<0.001$) had a significant positive effect on the commitment. However, trust had no significant influence on the commitment ($\beta=0.142$, $t\text{-value}=1.836$, $p=0.068$) at the 0.05 level. Thus, hypotheses H2b and

¹ The covariance matrix used in the data analysis is available from the corresponding author upon request.

H3b were supported, while hypothesis H1b was rejected. About 42 percent of the variance in commitment was accounted for by trust, customer satisfaction, and perceived value. Customer satisfaction exhibited the strongest direct effect on commitment. The total effect of customer satisfaction on loyalty was 0.353 ($= 0.219 + 0.343 * 0.392$).

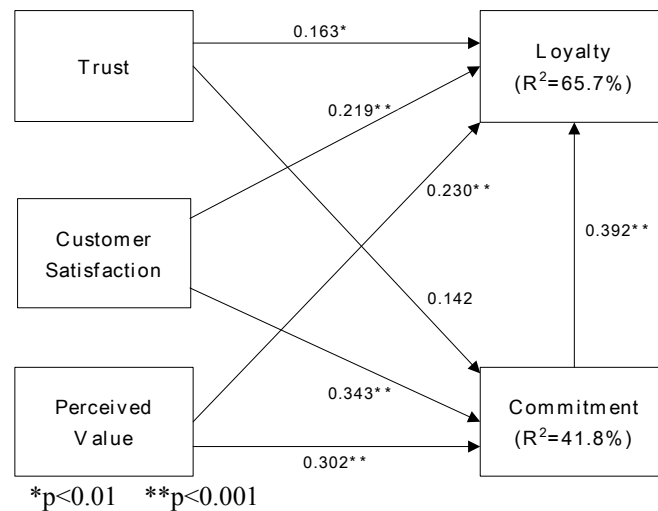


Figure 2. Hypothesis Testing Results

6. Discussion

This paper is an empirically validation of existing theories into the newly emerging context of e-service, which has become available and popular only recently. This study investigated the direct effects of customer satisfaction, trust, perceived value, and commitment on loyalty, and examined the indirect effects of customer satisfaction, trust, and perceived value on loyalty with the indirect path occurring through commitment. Integrating these perspectives and empirically examining the factors that build customer loyalty in an e-service context advance our understanding of these constructs and their linkage to repeat Web purchase behavior. The results suggest that trust, customer satisfaction, perceived value, and attitudinal commitment are separate constructs that combine to determine the purchase loyalty, with attitudinal commitment exerting a stronger influence than trust, customer satisfaction, and perceived value. While customer satisfaction and perceived value were each directly related to loyalty, they were also indirectly related to loyalty through commitment. This finding suggests that commitment plays a crucial intervening role in the relationship of customer satisfaction and perceived value to loyalty.

These findings also provide several implications for customer loyalty management in e-service context. While commitment has the strongest influence on loyalty, the customer loyalty management needs concern less with directly influencing loyalty through commitment. As suggested by our proposed model, loyalty and commitment should develop if the formation of customer satisfaction, trust, and perceived value is appropriately managed. Thus, management attention might more fruitfully focus on the “development” of these internal psychological processes. Accordingly, in order to increase the loyalty and commitment, it is important for customer loyalty managers to make their e-service a “satisfying” brand towards which consumers have an overall favorable disposition. Previous research (Wang et al., 2001) has shown that such factors as ease of use, information content, innovation, security protection, customer support, product/service itself, transaction process will influence Web customer satisfaction. Thus, creating and maintaining customer satisfaction through its antecedents is an appropriate and necessary strategy for developing customer satisfaction. In addition, managers should care about the consumer on-line experience of the e-service, from first encounter through purchase to delivery and beyond because the consumer on-line experience can influence consumer satisfaction with the e-service, which, in turn, influence the customer commitment and loyalty.

While trust had not a strong influence on commitment at the significance level of 0.05 ($p=0.068$), it appeared to have a significant influence on commitment at the significance level of 0.1 and to be an important determinant of loyalty. The findings suggest that in order to attract more consumers to repurchase products/services on a specific e-service vendor, it is not enough to develop customer satisfaction. It is of significant importance to develop an e-service towards which consumers perceive good integrity, benevolence, competence, and predictability attributes. It is worth noting that the mediating effect of attitudinal commitment on the relationship between trusting belief and purchase loyalty is slight. This finding also supports the prior researches' suggestion that trusting beliefs directly influence trusting intentions (e.g., repeat purchase intentions) (Jarvenpaa and Tractinsky, 1999; Mayer and Davis, 1999; Mayer et al., 1995; McKnight et al., 1998, 2002; Kim and Benbasat, 2003).

Additionally, perceived value was evidenced to be another significant determinant of attitudinal commitment and purchase loyalty. Cumulative insights from prior studies support the general notion that perceived value is determined by service quality, product quality, and price. Thus, in order to obtain higher loyalty and commitment, customer loyalty managers need to improve consumer perceived value through increasing their product/service and Web site quality and pricing their products/services reasonably. However, case studies and anecdotal evidence strongly suggest that achieving sustainable competitive advantage in the marketplace will be very difficult with just superior products and reasonable prices; regardless of whether a company's core offerings are products or services, superior service quality is essential for excellent market performance on an enduring basis (Berry, 1999). The primary rationale underlying this conclusion is that service quality is much more difficult for competitors to copy effectively than product quality and price (Parasuraman and Grewal, 2000).

The results of this study encourage customer loyalty managers to include measures of customer satisfaction, trust, perceived value, attitudinal commitment, and purchase loyalty into present customer loyalty valuation techniques. The present study has attempted to show the reliability and validity of the measures and has also provided some useful measures of these constructs. As the concise loyalty-related measures with good reliability and validity are periodically administered to a representative set of consumers, Internet marketers can use these measures to enhance their understanding of customer loyalty and its determinants and to take necessary corrective actions to improve them.

7. Conclusions

This research is a response to the call for customer loyalty research in the e-service context. Utilizing the proposed loyalty model as a theoretical framework, the direct and indirect influences of customer satisfaction, trust, perceived value, and attitudinal commitment on behavioral (purchase) loyalty were observed. The contributions of this study to customer loyalty research are twofold. First, it has successfully applied the traditional conceptualization of customer loyalty in a new e-service context that is different from the marketplace examined in prior studies. Second, customer satisfaction, trust, perceived value, and attitudinal commitment were found to be important determinants of purchase loyalty. It was also suggested in this study that commitment plays a crucial intervening role in the relationship of customer satisfaction and perceived value to loyalty. The findings of this study have implications for e-service managers to develop their customer loyalty. Considering the millions of dollars that have been invested in e-services worldwide, it is of paramount importance to ensure that customers will have repeat Web purchase behaviors and show loyalty to a specific e-service brand. In order to achieve this goal, attention must be placed in developing a satisfying, trustworthy, and highly valued e-service.

However, this empirical study has several limitations that can be addressed in the future research. First, investigation of e-service loyalty model is relatively new to e-commerce researchers. The discussed findings and their implications are obtained from one single study that examined two particular B2C e-service categories and targeted a specific consumer group in Taiwan. Thus, caution needs to be taken when generalizing our findings and discussion to other B2B e-service categories or user groups. It is imperative to validate our proposed loyalty model with different user populations in different contexts. In addition, the sample size used in this study is another limitation. A confirmatory analysis and cross-cultural validation using a large sample gathered elsewhere is required for greater generalization of the proposed model. Second, we did not incorporate firm level loyalty outcomes (e.g., market share, relative price, and profit) in the proposed model. Prior studies suggested that market share increases as purchase loyalty increases, and that relative price increases as attitudinal commitment increases (Chaudhuri and Holbrook, 2001). The influence of loyalty and commitment on the market share, relative price, and profit of an e-service is an important issue in need of systematic empirical research. Third, while the proposed model indicated a relative high R^2 , there is a need to search for additional variables that improve our ability to predict customer loyalty accurately. Finally, this study was conducted with a snapshot research approach. Additional research efforts are needed to evaluate the validity of the investigated models and our findings. Longitudinal evidence might enhance our understanding of the causality and interrelationships between or among variables important to customer loyalty in e-service context.

ACKNOWLEDGEMENTS

The authors would like to thank the special issue guest editors and three anonymous reviewers for their valuable comments and insightful suggestions.

REFERENCES

- Aaker, D.A., *Managing Brand Equity: Capitalizing on the Value of a Brand Name*, New York: The Free Press, 1991.
- Assael, H., *Consumer Behavior and Marketing Action*, 3rd ed. Boston: Kent, 1987.

- Bailey, J. E. and S.W. Pearson, "Development of a Tool for Measuring and Analyzing Computer User Satisfaction," *Management Science*, Vol.29, No.5:30-545, 1983.
- Beatty, S.E. and L.R. Kahle, "Alternative Hierarchies of the Attitude-Behavior Relationship: The Impact of Brand Commitment and Habit," *Journal of the Academy of Marketing Science*, Vol. 16, No.2:1-10, Summer 1988.
- Beatty, S.E., L.R. Kahle, and P. Homer, "The Involvement-Commitment Model: Theory and Implications," *Journal of Business Research*, Vol. 16, No. 2:149-167, March 1988.
- Berry, L.L., *Discovering the Soul of Service*, New York: The Free Press, 1999.
- Chaudhuri, A. and M.B. Holbrook, "The Chain of Effects from Brand Trust and Brand Affect to Brand Performance: The Role of Brand Loyalty," *Journal of Marketing*, Vol. 65, No. 2:81-93, April 2001.
- Crosby, L.A. and J.R. Taylor, "Psychological Commitment and Its Effects on Post-Decision Evaluation and Preference Stability among Voters," *Journal of Consumer Research*, Vol. 9, No. 4:413-431, March 1983.
- Crosby, L.A., K.R. Evans, and D. Cowles, "Relationship Quality in Service Selling: An Interpersonal Influence Perspective," *Journal of Marketing*, Vol. 54, No. 7:68-81, 1990.
- Dasgupta, P. "Trust as a Commodity," Trust, D.G. Gambetta (ed.), Basil Blackwell, New York, pp.49-72, 1988.
- Day, G.S., "A Two-Dimensional Concept to Brand Loyalty," *Journal of Advertising Research*, Vol. 9, No.3:29-35, September 1969.
- de Ruyter, K., M. Wetzels, and M. Kleijnen, "Customer Adoption of E-Service: An Experimental Study," *International Journal of Service Industry Management*, Vol. 12, No. 2:184-207, 2001.
- DeLone, W.H. and E.R. McLean, "Information Systems Success: The Quest for the Dependent Variable," *Information Systems Research*, Vol. 3, No. 1:60-95, 1992.
- DeLone, W.H. and E.R. McLean, "The DeLone and McLean Model of Information Systems Success: A Ten-Year Update," *Journal of Management Information Systems*, Vol. 19, No. 4:9-30, Spring 2003.
- Dick, A.S. and K. Basu, "Customer Loyalty: Toward an Integrated Conceptual Framework," *Journal of the Academy of Marketing Science*, Vol. 22, No. 2:99-113, Spring 1994.
- Dodds, W.B., K.B. Monroe, and D. Grewal, "Effects of Price, Brand, and Store Information on Buyers' Product Evaluations," *Journal of Marketing Research*, Vol. 28, No. 3:307-319, August 1991.
- Doll, W.J. and G. Torkzadeh, "The Measurement of End-User Computing Satisfaction," *MIS Quarterly*, Vol. 12, No. 2:259-274, 1988.
- Doney, P.M. and J.P. Cannon, "An Examination of the Nature of Trust in Buyer-Seller Relationships," *Journal of Marketing*, Vol. 61, No. 2:35-51, April 1997.
- Featherman, M. and P. Pavlou, "Predicting E-Services Adoption: A Perceived Risk Facet," *Eighth Americas Conference on Information Systems*, pp.1034-1046, 2002.
- Fishbein, M. and I. Ajzen, *Beliefs, Attitude, Intention and Behavior: An Introduction to Theory and Research*, Reading, MA: Addison-Wesley, 1975
- Forrest, E. and R. Mizerski, *Interactive Marketing: The Future Present*, American Marketing Association, Chicago, IL, 1996.
- Fournier, S., "Consumers and Their Brands: Developing Relationship Theory in Consumer Research," *Journal of Consumer Research*, Vol. 24, No. 4:343-373, March 1998.
- Fukuyama, F., *The Social Virtues and the Creation of Prosperity*, The Free Press, New York, 1995.
- Gambetta, D.G., "Can We Trust Trust?," Trust, D.G. Gambetta (ed.), Basil Blackwell, New York, pp.213-237, 1988.
- Ganesan, S., "Determinants of Long-Term Orientation in Buyer-Seller Relationships," *Journal of Marketing*, Vol. 58, No. 2:1-19, 1994.
- Gefen, D. and M. Silver, "Lessons Learned from the Successful Adoption of an ERP system," *Proceedings of the 5th International Conference of the Decision Sciences Institute*, Athens, Greece, pp.1054-1057, 1999.
- Gefen, D., "E-Commerce: The Role of Familiarity and Trust," *Omega*, Vol. 28, No.6:725-737, 2000.
- Gefen, D., "Nurturing Clients' Trust to Engourage Engagement Success During the Customization of ERP Systems," *Omega*, Vol. 30, No. 4:287-299, 2002.
- Gefen, D., E. Karahanna, and D.W. Straub, "Trust and TAM in Online Shopping: An Integrated Model," *MIS Quarterly*, Vol. 27, No. 1:51-90, 2003.
- Giffin, K., "The Contribution of Studies of Source Credibility to a Theory of Interpersonal Trust in the Communication Process," *Psychological Bulletin*, Vol. 68, No. 2:104-120, 1967.
- Grewal, D., K.B. Monroe, and R. Krishnan, "The Effects of Price-Comparison Advertising on Buyers' Perceptions of Acquisition Value, Transaction Value, and Behavioral Intentions" *Journal of Marketing*, Vol. 62, No. 2:46-59, April 1998.
- Gulati, R., "Does Familiarity Breed Trust? The Implications of Repeated Ties for Contractual Choice in Alliances," *Academy of Management Journal*, Vol. 38, No. 1:85-112, 1995.
- Gundlach, G.T., R.S. Achrol, and J.T. Mentzer, "The Structure of Commitment in Exchange," *Journal of Marketing*, Vol. 59, No. 1:78-92, January 1995.

- Hosmer, L.T., "Trust: the Connecting Link Between Organizational Theory and Philosophical Ethics," *Academy of Management Review*, Vol. 20, No. 2:379-403, 1995.
- Howard, J. and J. Sheth, *The Theory of Buyer Behavior*, New York: John Eiley & Sons, 1969.
- Ives, B., M.H. Olson, and J.J. Baroudi, "The Measurement of User Information Satisfaction," *Communications of the ACM*, Vol. 26, No. 10:785-793, 1983.
- Jacoby, J and R. Chestnut, *Brand Loyalty Measurement and Management*, New York: John Wiley & Sons, 1978.
- Jacoby, J. and D.B. Kyner, "Brand Loyalty versus Repeat Purchasing," *Journal of Marketing Research*, Vol. 10:1-9, February 1973.
- Jarvenpaa, S.L. and N. Tractinsky, "Consumer Trust in an Internet Store: A Cross-Cultural Validation," *Journal of Computer Mediated Communication*, Vol. 5, No. 2:1-35, 1999.
- Jarvenpaa, S.L., N. Tractinsky, and M. Vitale, "Consumer Trust in an Internet Store," *Information Technology and Management*, Vol. 1, No. 1-2:45-71, 2000.
- Jarvis, L.P. and E.J. Mayo, "Winning the Market-Share Game," *Cornell Hotel Restaurant Administration Quarterly*, Vol. 27, No. 3:72-79, November 1986.
- Kelley, S.W. and M.A. Davis, "Antecedents to Customer Expectations for Service Recovery," *Journal of the Academy of Marketing Science*, Vol. 22, No. 1:52-61, Winter 1994.
- Kiesler, C.A. and J. Sakumura, "A Test of a Model for Commitment," *Journal of Personality and Social Psychology*, Vol. 3:458-467, 1966.
- Kim, D. and I. Benbasat, "Trust-Related Arguments in Internet Stores: A Framework for Evaluation," *Journal of Electronic Commerce Research*, Vol. 4, No. 2:49-64, 2003.
- Kotler, P. and R. Singh, "Marketing Warfare in the 1980's," *Journal of Business Strategy*, Vol. 1, No. 3:30-41, Winter 1981.
- Kumar, N., L.K. Scheer, and J.-B.E.M. Steenkamp, "The Effects of Supplier Fairness on Vulnerable Resellers," *Journal of Marketing Research*, Vol. 32, No. 1:54-65, 1995.
- Larzelere, R.E. and T.L. Huston, "The Dyadic Trust Scale: Toward Understanding Interpersonal Trust in Close Relationships," *Journal of Marriage and the Family*, Vol. 42, No. 3:595-604, August 1980.
- Lassar, W., B. Mittal, and A. Sharma, "Measuring Customer-Based Brand Equity," *Journal of Consumer Marketing*, Vol. 12, No. 4:11-19, 1995.
- Lewis, J.D., and A.J. Weigert, "Trust as a Social Reality," *Social Forces*, Vol. 63, No. 4:967-985, 1985.
- Lichtenstein, D.R., R.G. Netemeyer, and S. Burton, "Distinguishing Coupon Proneness from Value Consciousness: An Acquisition-Transaction Utility Theory Perspective," *Journal of Marketing*, Vol. 54, No. 3:54-67, July 1990.
- Mayer, R.C. and J.H. Davis, "The Effect of the Performance Appraisal System on Trust in Management: A Field Quasi-Experiment," *Journal of Applied Psychology*, Vol. 84, No. 1:123-136, 1999.
- Mayer, R.C., J.H. Davis, and F.D. Schoorman, "An Integration Model of Organizational Trust," *Academy of Management Review*, Vol. 20, No. 3:709-734, 1995.
- McKnight, D.H., L.L. Cummings, and N.L. Chervany, "Initial Trust Formation in New Organizational Relationships," *Academy of Management Review*, Vol. 23, No. 3:472-490, 1998.
- McKnight, D.H., V. Choudhury, and C. Kacmar, "Developing and Validating Trust Measures for E-Commerce: An Integrative Typology," *Information Systems Research*, Vol. 13, No. 3:334-359, 2002.
- Molla, A. and P.S. Licker, "E-Commerce Systems Success: An Attempt to Extend and Respecify the Delone and MaClean Model of IS Success," *Journal of Electronic Commerce Research*, Vol. 2, No. 4:131-141, 2001.
- Moorman, C., G. Zaltman, and R. Deshpande, "Relationships between Providers and Users of Market Research: The Dynamics of Trust within and between Organizations," *Journal of Marketing Research*, Vol. 29, No. 3:314-328, August 1992.
- Morgan, R.M. and S.D. Hunt, "The Commitment-Trust Theory of Relationship Marketing," *Journal of Marketing*, Vol. 58, No. 3:20-38, July 1994.
- Nunnally, J.C., *Psychometric Theory*, 2nd ed., McGraw-Hill, NY, 1978.
- Oliva, T.A., R.L. Oliver, and I.C. MacMillan, "A Catastrophe Model for Developing Service Satisfaction Strategies," *Journal of Marketing*, Vol. 56, No. 3:83-95, July 1992.
- Oliver, R.L., "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions," *Journal of Marketing Research*, Vol. 17, No. 4:460-469, 1980.
- Oliver, R.L., "Whence Consumer Loyalty," *Journal of Marketing*, Vol. 63, Special Issue:33-44, 1999.
- Palvia, P.C., "A Model and Instrument for Measuring Small Business User Satisfaction with Information Technology," *Information & Management*, Vol. 31, No. 3:151-163, 1996.
- Parasuraman, A. and D. Grewal, "The Impact of Technology on the Quality-Value-Loyalty Chain: A Research Agenda," *Journal of the Academy of Marketing Science*, Vol. 28, No. 1:168-174, 2000.

- Pollard, C., "E-Service Adoption and Use in Small Farms in Australia: Lessons Learned from a Government-Sponsored Programme," *Journal of Global Information Technology Management*, Vol. 6, No. 2:45-63, 2003.
- Pritchard, M.P., M.E. Havitz, and D.R. Howard, "Analyzing the Commitment-Loyalty Link in Service Contexts," *Journal of the Academy of Marketing Science*, Vol. 27, No. 3:333-348, 1999.
- Rai, A., S.S. Lang, and R.B. Welker, "Assessing the Validity of IS Success Models: An Empirical Test and Theoretical Analysis," *Information Systems Research*, Vol. 13, No. 1:50-69, 2002.
- Reichheld, F.F. and P. Schefter, "E-Loyalty: Your Secret Weapon on the Web," *Harvard Business Review*, Vol. 78, No. 4:105-113, 2000.
- Reichheld, F.F., "Learning from Customer Defections," *Harvard Business Review*, Vol. 74, No. 2:56-67, March-April 1996.
- Robertson, T.S., "Low-Commitment Consumer behavior," *Journal of Advertising Research*, Vol. 16:19-24, April 1976.
- Rotter, J.B., "Generalized Expectancies for Interpersonal Trust," *American Psychologist*, Vol. 26, No. 5:443-452, 1971.
- Rousseau, D.M., S.B. Sitkin, R.S. Burt, and C. Camerer, "Not so Different After All: A Cross-Discipline View of Trust," *Academy of Management Review*, Vol. 23, No. 3:393-404, July 1998.
- Seddeon, P.B., "A Respecification and extension of the Delone and McLean Model of IS Success," *Information Systems Research*, Vol. 8, No. 3:240-253, September 1997.
- Shapiro, S.P., "The Social Control of Impersonal Trust," *American Journal of Sociology*, Vol. 93, No. 3:623-658, 1987.
- Sheppard, B.H., J. Hartwick, and P.R. Warshaw, "The Theory of Reasoned Action: A Meta Analysis of Past Research with Recommendations for Modifications in Future Research," *Journal of Consumer Research*, Vol. 15, No. 3:325-343, 1998.
- Straub, D.W., "Validating Instruments in MIS research," *MIS Quarterly* Vol. 13, No. 2:147-169, June 1989.
- Turban, E., D. King, J. Lee, M. Warkentin, and H.M. Chung, *Electronic Commerce: A Managerial Perspective*, New York: Prentice Hall, 2002.
- van Riel, A.C.R., V. Liljander, and P. Jurriëns, "Exploring Consumer Evaluation of E-Service: A Portal Site," *International Journal of Service Industry Management*, Vol. 12, No. 3/4:359-377, 2001.
- Venkatesh, V. and F.D. Davis, "A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies," *Management Science*, Vol. 46, No. 2:186-204, 2000.
- Voss, G.B., A. Parasuraman, and D. Grewal, "The Roles of Price, Performance, and Expectations in Determining Satisfaction in Service Exchanges," *Journal of Marketing*, Vol. 62, No. 4:46-61, October 1998.
- Wang, Y.-S., T.-I. Tang, and J.-T.E. Tang, "An Instrument for Measuring Customer Satisfaction Toward Web Sites That Market Digital Products and Services," *Journal of Electronic Commerce Research*, Vol. 2, No. 3:89-102, 2001.
- Westbrook, R.A. and R.P. Oliver, "The Dimensionality of Consumption Emotion Patterns and Consumer Satisfaction," *Journal of Consumer Research*, Vol. 18, No. 1:84-91, 1991.
- Zeithaml, V.A., "Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence," *Journal of Marketing*, Vol. 52, No. 3:2-22, July 1988.

APPENDIX

Trust

- T1 Based on my experience with the e-service in the past, I know it is not opportunistic.
- T2 Based on my experience with the e-service in the past, I know it cares about customers.
- T3 Based on my experience with the e-service in the past, I know it is honest.
- T4 Based on my experience with the e-service in the past, I know it is predictable.

Customer Satisfaction

- S1 I am satisfied with this e-service.
- S2 The e-service is successful.
- S3 The e-service has met my expectations.

Perceived Value

- V1 The products and/or services provided by the e-service is well priced.
- V2 Considering what I would pay for this e-service, I will get much more than the worth of my time, effort and money.
- V3 Based on simultaneous considerations of what I received and what I gave up to receive it, I consider this e-service to be valuable.

Commitment

- C1 My preference for this e-service would not willingly change.
- C2 It would be difficult to change my beliefs about this e-service.
- C3 Even if close friends recommended another online traveling (or video on demand) e-service, I would not change my preference for this e-service.
- C4 To change my preference from this e-service would require major rethinking.

Loyalty

- L1 I will buy products/services from this e-service provider the next time I buy traveling (or video on demand) product/service.
 - L2 I intend to keep purchasing products/services from this e-service provider.
-