

The Effect of Pre- and Post-Service Performance on Consumer Evaluation of Online Retailers

Insu Park
(ipark@memphis.edu)
University of Memphis

Jeewon Cho
(jeewon.cho@bus.oregonstate.edu)
Oregon State University

H. Raghav Rao
(mgmtrao@buffalo.edu)
State University of New York at Buffalo

Abstract

This study examines the effect of consumers' pre- and post- service encounter performance (SEP) on their satisfaction and repurchase intention in online markets. Specifically, we suggest that, in an online context, the different service performances: pre- and post-Service over time, affects consumer evaluation (i.e., overall satisfaction and repurchase intention) of a vendor. We introduce the experience-dissonance process in this research by integrating cognitive consistency theory as well as expectation-confirmation theory in order to investigate the consumer satisfaction formation processes in online transactions. Theoretical and practical implications are discussed.

Keywords: Online shopping, Experience-dissonance, Overall satisfaction, Service performance, Repurchase intention

1. INTRODUCTION

Consumers constantly experience service encounters throughout the process of purchasing products from vendors, and these service encounters have been regarded as an important indicator for consumers when estimating the quality of those products [11, 16, 33, 43, 63, 64, 66].

In a typical offline market for a product, consumers have a certain expectation about products prior to purchasing, and they engage in a process of evaluation about their experience of the products after the purchase. When the perceived service performance after the purchase is less than expectations formed before the purchase, the consumers experience insufficient satisfaction, leading them to experience a sense of discomfort [50, 81]. This feeling of discomfort is derived from the *expectation-confirmation process*, the comparison of the expectation about products before purchasing and perceived performance afterward. This sense of discomfort causes consumers not only to have negative attitudes toward a vendor (i.e., consumer dissatisfaction), but also to reduce their intention to repurchase from that vendor [45, 69, 73].

However, in an online context, consumers' satisfaction formation process may be different from the offline market experience due to the unique features of the online market. The following example allows a useful insight into understanding how an online consumer establishes his/her satisfaction of the service given by an online vendor.

After researching many vendors who sold a particular digital camera, Mr. Williams ordered one from ABC Company, an online vendor. Because ABC offered excellent services, including general as well as detailed information about the features of the camera, its usage, and a free shipping option, Mr. Williams was satisfied with his choice of the vendor. However, the camera was delivered much later than the arrival date the vendor indicated, and while he was waiting for the camera, the order-tracking service was not available. He contacted the customer service center in ABC, but the recurring answering machine only wasted his time. Finally, he received the camera 10 days later than the original promised date without any reasonable explanation from the vendor regarding the delay. Overall, he was completely dissatisfied with the service from ABC.

This example shows that the service encounters experienced by Mr. Williams occurred at two

different points in the process of ordering the product: pre- and post-services. Unlike offline vendors, online vendors' services engage in two basic functions, which include a relatively long time gap: (1) *providing information regarding products and prices before the purchase that users can find and compare easily*, and (2) *delivering the product to consumers after the purchase* [15]. Therefore, the services of online vendors include pre- and post-service aspects [82]. In Mr. Williams' situation, since he had perceived high levels of pre-service encounter performance (SEP) with ABC, he decided to purchase a camera from the vendor. After the purchase, however, the vendor's services were inconsistent with his pre-SEP perceptions. Therefore, Mr. Williams experienced cognitive inconsistency between the two different SEPs; the pre-SEP was high, while the post-SEP was low (pre-SEP > post-SEP). These aspects of online vendors suggest an important consideration: it is important to understand whether pre- and post-SEPs affect the consumer's satisfaction formation in different ways.

Furthermore, note that, on evaluation, such different phases of SEP could play a distinct role in consumers' decision-making processes. In the example of Mr. Williams, pre-SEP played a crucial role in the decision to purchase the product from that particular online vendor, providing that the product is identical to what other vendors offer. However, his experience of the initial purchase decision was influenced more by post-SEP when he compared the given service qualities after purchasing from the chosen vendor to those prior to the purchase. In other words, in online transactions, pre-SEP may be influential in choosing a vendor, and post-SEP may be important in repurchase intention after comparing pre- to post-SEP.

The purpose of this study is to investigate the impact of pre- and post-SEP on consumer satisfaction and repurchase intention for of an online vendor. Specifically, we focuses on two main issues. First, based upon cognitive consistency theory [62] and expectation-confirmation theory [51], we theorize that online consumers establish SEP that arises in multiple phases, and examine how it affects their overall satisfaction for an online vendor. We then examine how pre- and post- SEP influences consumer satisfaction via dissonance.

This study has several implications for both theory and practice. First, this study applies a

comprehensive perspective called an experience-dissonance process to consumer satisfaction formation in online markets, based on cognitive consistency theory and expectation-confirmation theory. In examining the experience-dissonance process, the current study articulates the different functions of pre- and post-SEP on consumers' evaluation, which represents an online market feature. To our knowledge, this study is the first attempt to identify the potential existence of dissonance between pre- and post-SEP in online transactions by identifying the difference between the effects of pre- and post-SEP. In this study, we strive to incorporate this feature of an online vendor into consumer satisfaction and repurchase intention. This theoretical framework helps gain an understanding of consumers' attitudes and behavioral intentions toward an online retailer in that it allows practitioners not only to establish their own strategies that are suitable for their current situations, but also to maximize their consumers' levels of satisfaction and repurchase intention on the vendor. Consumers' pre- and post-SEP will be a useful indicator when estimating online vendors' effectiveness with existing products.

2. THEORETICAL FOUNDATION

2.1. Service Encounter Satisfaction

Service encounters occur during the period when a consumer and a service firm interact in person, over the telephone, or through other media [22, 28]. A service encounter refers to "a discrete event occurring over a definable period of time", and service encounter satisfaction is defined as "the consumer's satisfaction/dissatisfaction with a discrete service encounter" [12 p.74]. Service encounter satisfaction refers to the consumer's attitude regarding their evaluation of the experiences and behaviors that occurred during their interaction with the service providers. Because consumers view service encounters as a series of events, multiple experiences are evaluated separately. Therefore, each service encounter comprises a consumer's cumulative impressions of a vendor.

Past research has examined the relationship between service encounter satisfaction and consumer satisfaction, including the link between consumer satisfaction and different service encounters [74]. According to Shankar et al. [70], consumer satisfaction is *relationship-specific*, derived from the

cumulative effect of a series of discrete service encounters or transactions with online vendors over a certain period of time. In contrast, service encounter satisfaction is *transaction-specific*, indicating that it comprises several different encounters ranging from transaction to transaction. Thus, because consumer overall satisfaction reflects the customer's feelings about multiple experiences or encounters of retailers, it is distinguished from service encounters or transaction-specific satisfaction [21].

In offline contexts, on the other hand, service encounters include face-to-face interaction between consumers and service representatives [46]. The service encounters represent the service attributes (encounters) provided by online vendors. Specifically, according to Oliver [51, p. 34], "*the object of expectations for retail are the attributes of the store which constitute its' image, such as merchandise assortment, services, physical facilities, convenience, store atmosphere, and promotion campaigns*. Due to this characteristic, most research on service encounters has focused primarily on interpersonal interactions between consumers and service representatives. However, unless the consumers want to communicate with service representatives about the product or service, these interactions are less likely to occur in online environments. Therefore, service encounters in offline environments are viewed as "high-touch, low-tech [46]," while in an online context they are defined as "high-tech, low-touch [8]."

In this study, to avoid confusion, we hereafter replace service encounter satisfaction with the term, *service encounter performance (SEP)*.

2.2. Expectation-Confirmation Process

Expectation-confirmation theory has been widely accepted as a way of understanding consumer satisfaction [42, 54]. This theory has been also extensively used to draw the substantial difference between initial behavior and continued usage behavior in the IT context [9, 10, 31, 48]. The theory describes two underlying processes that take place in satisfaction formation: *the creation of expectations* and *the confirmation/disconfirmation of those expectations by assessing the perceived performance through the comparison process* [53]. According to expectation-confirmation theory, each individual consumer has a certain level of expectation for the performance of the chosen retailers' services. As the

consumer uses the given service, he/she compares the expectation with his/her actual perceptions of the service performance. Through this comparison process, the consumer derives either *positive* (expectation < perceived performance) or *negative disconfirmation* (expectation > perceived performance). In other words, if a consumer rates the service lower than his/her level of expectation, negative disconfirmation occurs. Conversely, if a consumer evaluates the service as of a higher quality than his/her level of expectation, then positive disconfirmation transpires. Thus, consumers' overall satisfaction is a function of the "positivity of disconfirmation" [55 p. 319].

2.3. Experience-Dissonance Process

Since consumers experience at least two or more service encounters with Internet-based merchants, it is possible for consumers to experience different levels of customer service. When such an event occurs, this can lead to customers experiencing inconsistent attitudes toward the vendor. In this study, such inconsistent process occurring in a transaction is termed *experience-dissonance process*. The focus of the comparison in *experience-dissonance process* is on two distinct and consecutive (pre- and post-) SEP.

Researchers have noted that such inconsistent attitudes can lead to feelings of dissonance [62]. Such feelings of dissonance are explained by cognitive dissonance theory. According to Festinger [25], feelings of dissonance are uncomfortable and individuals are motivated to alleviate this discomfort. Likewise, people tend to maintain consistency among the elements of their cognitive system through a minimum of dissonance. Within an online market situation, when an online consumer experiences conflicting attitudes or feelings toward a vendor from the two phases in the transaction process, he/she would have inconsistent attitudes (i.e., dissonance) toward the vendor. He/she, eventually, would resolve this dissonance through a process of evaluating overall satisfaction, and if satisfied, then decide to repurchase from the vendor. This dissonance concept was used for evaluation of post-decision products by Cohen [20]. Regarding this theory, Parasuraman [59] mentioned an example of cognitive dissonance based his experience. When he was at a hotel in somewhere, on entering the hotel room, he found a menu for pillows - he could choose from 10 different types of pillows. He was very pleasantly surprised and

expected that all the services to be provided by the hotel would be great. However, from then on, it was downhill. For example, the shower did not work, the towel was not clean, the breakfast that he ordered was 45 minutes late and though he had asked for a wakeup call, there was no wakeup call in the morning. Even though the first impression had been great, with each unsatisfactory event, he was trying to rationalize that the bad service may be an aberration. However, when the services had been never improved, his dissonance kept increasing and his final feeling was of deep dissatisfaction, resulting in his vowing never to return to that hotel.

Note that the concepts of disconfirmation (described in Section 2.2.) and dissonance are obtained through different processes. Figure 1A shows a consumer's satisfaction formation process in an offline context. Since there is no time-lag issue between expectation and perceived performance, a consumer evaluates satisfaction based on disconfirmation in terms of retailers' service attributes. It is also important to note that in a disconfirmation process, the dissonance between expectation and performance emerges by comparing a specific service attribute. For example, the attributes of the store are constitute its' image, such as merchandise assortment, services, physical facilities, convenience, store atmosphere, and promotion campaigns. [51, p. 34], as shown in Figure 1A, the consumer's dissonance is derived from attribute-level comparison and the referent is the attribute of the product

Figure 1 about here

However, in online markets, due to a time lag between pre- and post-SEP, a consumer experiences multiple service encounters in each stage (Figure 1B). A consumer evaluates several attributes regarding a product given by a vendor and such assessed perceptions are integrated to form overall service encounter performance through pre-SEP and post-SEP stages. Since each stage has a different focus of services, the consumer faces and evaluates different kinds of attributes of services in nature, as shown in Figure 1B. In this situation, the dissonance between pre- and post-SEP arises by comparing overall service performance in pre-SEP with that in post-SEP (service-level comparison). That is, the referent is the services provided by the same vendor.

Since a transaction itself includes multiple phases (which allow multiple attributes of a product), when online consumers evaluate satisfaction, they are more likely to integrate those experienced attributes. In addition, the consumers reflect these perceptions to establish overall satisfaction in terms of the service performance in pre- and post-purchase stages. This is labeled, *abstraction strategy*, which refers to “concrete attributes that differ across services are converted to abstract decision criteria to allow meaningful comparison of the alternatives” [60, p. 289]. In other words, when comparing different constructs (i.e., pre- and post-SEP) and calculating dissonance, the same referent issue is not based on the same attribute of a service, but based on the same vendor’s overall service performance. For example, suppose that a consumer should make a decision to purchase either a particular music stereo described by its sound quality and power or a particular bicycle described by its style and various options for the speed [35]. When the consumer selects one of the two alternatives, there are various, different attributes of the services as mentioned above. These specific attributes are integrated, and then, result in establishing overall preference for either the stereo or bicycle. In this situation, the referent level is not having either the stereo or the bicycle. After an instance of decision-making, the consumer may have the dissonance from his/her decision because he/she may think that the “not chosen option” was the better choice. Dissonance can occur when there is the same referent and it does not necessarily have to be derived from the comparison among the same attributes.

Figure 2 shows *expectation-disconfirmation* and *experience-dissonance processes* in online shopping contexts. As shown in the figure, we argue that a satisfaction formation process consists of three steps in online markets: *building pre- SEP (step 1)*, *building post- SEP (step 2)*, and *comparing and integrating pre- and post- SEP (step 3)*. In addition, building each pre- and post- SEP separately is a part of the *expectation-confirmation process*, while comparing and integrating pre- and post-SEP is a part of the *experience-dissonance process*. In this study, we focus on the experience-dissonance process (the shaded part in Figure 2).

In Step 1, as a typical case of an expectation-confirmation model, consumers assess pre-SEP through the disconfirmation process that results from comparing their expectations and perceived performance,

such as ease of use, clarity of product, or Website design. In online transactions, Step 1 is regarded as a pre-purchase phase, and the given pre-SEP acts as a guide for choosing a vendor. In this step, the initial expectation or prior images of the vendor are established. As a result, if consumers are not satisfied with pre-service encounters from an online vendor, they are more likely to terminate engagement with the purchasing process with that vendor. In Step 2, the consumers estimate post-SEP perception through their experience of post-service encounters, such as the fulfilled delivery, order tracking, and customer support. In this situation, pre-SEP could affect *post-service expectation* as a baseline that has been experienced, in evaluating post-SEP. Since consumers already experienced pre-service encounters and built overall pre-SEP before purchasing goods, the previous experiences regarding pre-service encounters are considered in building their expectations for post-service encounters. For example, if consumers experienced a good service from pre-service encounters, they would hold the expectation that post-service encounters corresponding to pre-service encounters would be good. Using a similar logic, consumers' post-SEP would be derived from the comparison process between post-service expectation and the post-service performance of the post-service encounter. The expectation and confirmation process is comprised of Steps 1 and 2.

Figure 2 about here

Finally, Step 3 (the experience-dissonance process) manifests the achievement of consumers' overall satisfaction. In Step 3, the consumers compare two different attitudes resulting from the pre- attitudes vs. the post-service attributes. In doing so, the consumers evaluate their overall satisfaction by using *SEP disconfirmation which is affected by pre- and post-SEP* (Steps 1 and 2).

As a final link, as shown in Figure 2, this study assumes a positive relationship between consumer satisfaction and repurchase intention. Previous research has consistently shown that consumer satisfaction is an important factor for their repurchase intention [4, 13, 61]. This is because consumers tend to depend more upon their experiences after conducting an initial transaction than on reputation or store brands. Based on the information that the consumers collect from their experiences, they could alter their

subsequent purchasing behaviors.

3. HYPOTHESES

3.1. Pre- and post- Service Encounter Performance

The proposed model in Figure 2 shows how pre-SEP and post-SEP become important factors in estimating consumer satisfaction through comparison sub-processes. In this section, we focus on the impact of pre- and post- SEP on consumers' overall satisfaction through the dissonance process in online shopping.

First, however, it is important to clarify why pre- and post-SEP are better indicators to use when estimating satisfaction than expectation and perceived performance. Previous research has found that expectation, as a standard of comparison, is a function of a consumer's perceptions of service performance [56, 57, 81]. Because beliefs can systematically distort a consumer's perceptions, only perceptions are assimilated into expectations [71]. In fact, several studies have provided empirical evidence linking expectation and perceived performance [14, 73].

In this study, the levels of pre- and post-SEP are applied to the satisfaction formation process in order to assess overall satisfaction. As stated earlier, pre-SEP is given as a result of evaluation for the real performance of pre-service encounters, such as clarity of information, ease of finding, and look and design, which enhance a user-friendly interface [27, 51]. Pre-SEP also anticipates and provides a comparative referent for the evaluation of the post-service encounter. As expectation does in the offline context, Pre-SEP would be a good reference point for motivating perceived performance because experiences that help form consumers' perceptions provide more explanatory power when determining post-experiences than beliefs (expectations). Accordingly, pre-SEP positively affects post-SEP: High pre-SEP will predict high post-SEP. This leads to hypothesis 1 in this study:

Hypothesis 1: Pre-service encounter performance will be positively related to post-service encounter performance.

3.2. Service Encounter Performance in Online Shopping

Higher pre-SEP can lead to higher post-SEP and also lead to higher dissonance, leading to perceptions that the vendor provides worse post-SEP than pre-SEP as experienced from pre-service encounters. Regarding comparison of two factors (i.e., expectation and performance), previous research on expectation and disconfirmation has shown mixed results in this relationship. Some researchers claim that the two are unrelated [50], whereas others suggest that there is a negative relationship [19, 75, 80]. In fact, any setback in perceived performance would contribute to higher perceived disconfirmation. With low expectation, the consumers are more likely to have those expectation surpassed as normal perceived performance levels would be considered better than experienced low services quality. That is, although consumers have high pre-SEP, if they experience relatively low post-SEP, the dissonance will be negatively high. On the other hand, post-SEP affects positive dissonance. Churchill and Surprenant [19], who introduced performance to disconfirmation theory researchers have found that generally the better a product is perceived to perform, the less likely users will experience disconfirmation. As a perceived performance of service encounters, post-SEP provides consumers with a positive criterion for evaluating overall satisfaction, in contrast to pre-SEP acting as negative criterion.

In this theoretical frame, pre- and post-service encounter aspects assume different roles for consumers in purchase-making decisions. Pre-service focuses on the decision-making role for choosing a vendor prior to the purchase, while the post-service encounter relates to an enriching role, which reinforces or justifies consumers' decisions in regards to their chosen vendors after purchase. The enriching role is similar to "enriched attribute" of a product that Nowlis et al. [49] suggested, in that it has "a tendency to receive relatively greater weight when preferences are formed on the basis of separate evaluations of individual options [49]." In the offline shopping context, this enriching role of post-SEP has been regarded as one way to justify consumers' purchase decisions [6]. Therefore, when a consumer faces the different perceptions between pre-SEP and post-SEP, his/her dissonance will be determined based on post-SEP more than pre-SEP.

Hypothesis 2a: *Post-service encounter performance will more affect dissonance than pre-service*

encounter performance does.

Although a positive relationship between SEP and consumer satisfaction is consistently supported by prior research, very little research has explored this relationship in *online contexts* by focusing on a unique feature of online markets such as pre- and post-SEP. Because consumers evaluate discrete encounters or transactions and then integrate these evaluations into their overall perception of the service vendor, multiple encounters can be experienced in multiple service episodes as well as multiple discrete components of an interaction between a customer and vendor.

Pre- and post-services can be clarified using the hypothetical example in Section 1. If Mr. Williams had not been satisfied with the pre-service encounter, regardless of price or product quality, he would not have chosen ABC, and would instead have searched for other vendors who offer better services. That is, the level of satisfaction with the pre-service encounter will determine the consumer's vendor selection. On the other hand, if Mr. Williams had been satisfied with the pre-service encounter, and this was followed with a satisfying post-service encounter, he would have high levels of overall satisfaction that would correspond to these two positive service encounters. However, if his post-SEP levels were less than pre-SEP, his decision to choose ABC would have not been justified. Because his initial decision was not reinforced by his post-service encounter, Mr. Williams would experience negative dissonance. This would negatively affect his overall satisfaction. Thus, pre- and post-SEP play distinct roles in choosing the vendor, buying products, and reinforcing dissonance and overall satisfaction.

Furthermore, we expect that the level of consumer satisfaction is determined more by post-SEP than pre-SEP for the following reasons: (1) consumers tend to focus on post-SEP justifying their purchase decisions and (2) adjust their pre-SEP evaluation based upon their post-SEP evaluation [24]. That is founded upon the recency effect, which explains that consumers place more weight on recent information given by post-SEP than that of pre-SEP [e.g., 30]. Therefore, we argue that post-SEP is a more decisive factor than pre-SEP in assessing consumer satisfaction, which leads to the hypothesis 2b of this study:

Hypothesis 2b: Consumer satisfaction will be more affected by post-service encounter

performance than by pre-service encounter performance.

3.3. The Impact of Dissonance on Consumer Satisfaction

As stated earlier, an online consumer's dissonance could arise in two different ways: positive and negative dissonance. As shown in Figure 3, positive dissonance occurs when expectation of retailer's service as a reference point is lower than perceived quality (expectation < perceived quality), whereas negative dissonance arises when expectation is higher than perceived quality (expectation > perceived quality).

Past research has showed the impact of positive dissonance on consumer satisfaction [52, 77]. According to previous research, consumer satisfaction results from a process of comparison between expectation and perceived performance. Specifically, expectation creates a frame of reference for comparative judgments. Then consumers evaluate satisfaction of service with dissonance that results from comparison with their expectations about service performance. Cognitive dissonance resulting from a dissonance process renders consumers satisfied or dissatisfied with the service. As mentioned earlier, in this context, positive dissonance will lead to feelings of high satisfaction. In addition, when perceived quality is lower than the expectation for the service, negative dissonance occurs and the result will be feelings of dissatisfaction. This argument is concerned with the direction of consumer satisfaction, depending upon the kind of the dissonance. Therefore, the current study proposes hypothesis 3 in this study:

Hypothesis 3: *High positive dissonance will be positively related to consumer satisfaction.*

3.4. Consumer Satisfaction and Repurchase Intention

Numerous researchers have found support for a positive relationship between customer satisfaction and repurchase intention, suggesting that repurchase intention is a positive outcome of customer satisfaction [3]. This relationship is explained by the mechanism between attitude and behavior, indicating that attitudes are the strongest predictor of behavioral intention [2]. According to Ajzen et al. [2], behavioral intention follows judgment/attitude with cognitive and affective dimensions. That is, when

consumers perceive satisfaction, a cognitive and affective attitude toward a vendor [80], they strongly intend to purchase from that vendor again. Consequently, consumer satisfaction is linked to repurchase intention. This leads to the last hypothesis of this study:

Hypothesis 4: Consumer satisfaction is positively related to repurchase intention.

In summary, Figure 3 illustrates the overall conceptual model of this study.

Figure 3 about Here

4. METHODS

4.1.Data Collection

We used archival data (N= 544 vendors) from *BizRate.com*, a well-known Web site that provides price comparison services. *Bizrate.com* independently tabulates consumer's experiences with online merchants at www.bizrate.com, using a set of items to measure e-store attributes identified previously, thereby generating ordinal data reflecting consumers' perceptions of the quality of e-store attributes.

The data collection process was conducted with two steps. In the first step, the data was individually collected by Bizrate.com. Bizrate.com surveyed respondents who had purchased from an online retail site and, upon purchase, received a banner ad requesting them to complete a survey of the site prepared. Respondents were asked to rate the performance of the site on a set of attributes and answer a series of questions about their likelihood of returning to the same site for their next purchase. Attributes of online vendors' services were evaluated using a ten-point scale and an overall measure of satisfaction was asked for at the conclusion of the survey. The set of attributes used for the store ratings was selected from a series of tests aimed at finding the most important/descriptive attributes with regard to repurchase internet. Ratings on each measure were aggregated across individual respondents to get the average score on that measure for each of the 544 rated online vendors. These aggregated ratings were used to test the proposed model. Thus, the sample size for the model estimation is 544. Therefore, each sample in the data

represents one vendors' evaluation resulted from ratings of a number of respondents which might be able to be more generalized than the data from survey methods with subject to limited participants. Finally, the survey results were published on Bizrate's web site and are available, for the organizational unit, to the public. This allows us to examine the effect of pre- and post-SEP on satisfaction and repurchase intention at the organizational level rather than individual level .

For this study, we selected 544 online vendors ratings from the Web site between August 24 and September 15, 2005. The data includes online vendors with at least 1,000 customer evaluations since the year 2000. This ensures an expected minimum average number of more than 100 customer reviews per three months for stores in this category.

The ratings of service attributes of vendors provided by *Bizrate.com* have been widely used in online markets. For example, Shopper.com, Shopping.com, and Price.com have all referred to the ratings of Bizrate.com. In addition, numerous vendors present themselves as certified sellers by Bizrate.com on their own websites (e.g., Motorola.com, CD Universe.com, and Euclid Computers.com, etc.). This suggests that vendors' ratings from *Bizrate.com* are accepted as a credible evaluation¹ [15, 29, 58, 67, 68, 79].

4.2.Measures

4.2.1. Service Encounter Performances

We divided service encounters into two stages: pre- and post-SEP. Based on that, we performed an exploratory factor analysis with varimax rotation for 8 evaluation items (each with a 10-point scale) that were offered by Bizrate.com in order to measure pre- and post-SEP. Table 1 presents the measures and their specific explanation using this study.

Table 1 about Here

¹ The following studies used data from *Bizrate.com*: Cao and Gruca, 2004, Grover et al., 2006, Pan et al., 2004, Ratchford et al., 2003, Reibstein, 2002, Wu and Padgett, 2004.

4.2.2. Dissonance

In this study we estimated dissonance by a single item provided by Bizrate.com: Product Met Expectations. We used the degree that consumers met their expectation on the product they bought, as a proxy for dissonance. Compared to disconfirmation construct that should be collected longitudinally, dissonance construct was based on the performance after use and measured by cross sectional data.

4.2.3. Consumer Satisfaction and Repurchase Intention

Consumer satisfaction (SAT) and repurchase intention were measured using a single-item on a 10-point scale. Specifically, consumer satisfaction was assessed using a scale called “overall rating,” and repurchase intention was evaluated using the phrase “would shop here again.” Using a single-item measure has precedence in many studies, including studies in marketing [e.g., 39, 44, 47] as well as information systems research [65]. For instance, Kekre, Krishnan, and Srinivasan (1995) use a single-item measure for assessing consumer satisfaction in their large-scale study of drivers of customer satisfaction in the computer industry. Furthermore, Yi [80] compared the levels of reliability between multiple-items and single-item scales in measuring satisfaction, showing an adequate reliability in the use of single-item scales.

4.2.4. Control Variables

When testing the conceptual model, we controlled for the following three variables: perceived price, shipping charge, and vendor category. First, we controlled for perceived price because it influences both consumers’ satisfaction [32] and repurchase intention [34]. Second, we controlled for perceived shipping cost because it could affect consumers’ satisfaction with a specific online vendor. [23, 78]. Both variables were measured using a 10-point scale. Finally, a vendor category was controlled based on the type of the products that vendors provided: (1) books and magazines; (2) clothing and accessories; (3) DVDs and videos; and (4) gifts, flowers, and food.

Table 2 about Here

Table 2 shows the descriptive statistics of this study. The sample of the study was classified into four categories: (1) books and magazines, (2) clothing and accessories, (3) DVDs and videos, and (4) gifts, flowers and food. These four product categories were obtained based on the criteria for the degree of involvement, and similarity of product attributes [5].

5. ANALYSES AND RESULTS

5.1. The Effect of SEP Dissonance on Consumer Satisfaction

5.1.1. Analysis Strategy

The conceptual model was tested to identify specific causalities among the variables by using the partial least squares structural equation modeling technique (PLS). The PLS approach allows researchers to assess measurement model parameters and structural path coefficients simultaneously [7, 17]. It focuses on a prediction-oriented and data-analytic method, seeking to maximize the variances that are explained in constructs [7]. The primary reasons for using PLS in this study are: (1) This study was primarily intended for causal-predictive analysis, a condition for PLS suggested by Chin and Newsted [18] and Joreskog and Wold [36], (2) PLS requires fewer statistical specifications and constraints on the data than the covariance-based strategy of LISREL (e.g., assumptions of normality), and (3) PLS is effective for those early-theory testing situations that characterize this study. Therefore, PLS is an appropriate statistical analysis tool for the current study².

5.1.2. PLS Measurement Model

The measurement model in PLS was assessed by examining reliability as well as convergent and discriminant validity using factor loadings, composite scale reliability (C.R.), average extracted variance

² For multicollinearity check, Variance Inflation Factor (VIF) values were calculated by using regression analysis for independent variables, VIF indicates if the values are below 4, there is no evidence on the multicollinearity. Pre-SEP (1.403), Post-SEP (2.374), and Disconfirmation (2.529) showed no evidence on multicollinearity among those values.

(AVE) [17]. Table 3 and 4 shows the results of the measurement model. In PLS, convergent and discriminant validity is inferred when the square root of each variable's average variance extracted (AVE) is higher than its correlations with other variables [17]. As shown in Table 3, the square root of the AVE for each variable (the boldfaced diagonal elements) in the models was higher than its correlations with other constructs³. Therefore, adequate convergent and discriminant validity was obtained based on the results of the measurement models. In addition, pre- and post-SEP's C.Rs. were higher than .85, thereby exceeding the recommended cut-off of .70.

Table 3 about Here

In order to check individual measurement items that might not exhibit adequate discriminant validity, a matrix of factor loadings and cross-loadings was constructed for the model. Table 4 provides the factor structure matrix of loadings and cross-loadings. The factor matrix shows that all items, with the exception of the charge statement, exhibited, at least, loadings of 0.64 (the recommended cut-off of .70) on their respective constructs. Based on the results above, we concluded that the measures of the study showed excellent psychometric properties for ensuring adequate reliability and validity.

Table 4 about Here

5.1.3. Testing the Structural Model

The PLS structural model and hypotheses were assessed by examining path coefficients and their significance levels. As recommended by Chin [17], bootstrapping was performed in order to test the statistical significance of each path coefficient by using *t*-tests. Table 5 and Figure 4 summarize the results of the structural model for hypotheses. The model explained the variances for post-service ($R^2=22.6\%$), disconfirmation ($R^2=61.1\%$), overall satisfaction ($R^2=88.9\%$), and repurchase intention

³ Each variable should share more variance with its items than with those of other variables in the model to obtain convergent and discriminant validity (Chin, 1998). As shown in Table 1, the boldfaced diagonal values (convergent validities) exceeded those values in the respective columns (discriminant validities).

($R^2=87.5\%$), which is noticeably high.

Table 5 about Here

For the hypothesis 1, as shown in the figure, the results of the magnitude of the effects of pre- on post-SEP indicated that the effect of pre-SEP on post-SEP ($\beta = .475, p < .001$) was considerably significant. Therefore, hypothesis 1 was strongly supported.

For the effect of pre- and post-SEP on disconfirmation and overall satisfaction, both pre-SEP ($\beta = .229$) and post-SEP ($\beta = .646$) for disconfirmation were statistically significant. However, for the overall satisfaction, pre-SEP ($\beta = .032$) was not significant but post-SEP ($\beta = .751$) was significant. The comparative results between the effect of pre- and post-SEP on dissonance and overall satisfaction are in Table 6. Since hypothesis 2a and 2b need to identify which variable has more impact on dissonance and overall satisfaction, we conducted a test of the differences in path coefficients between pre- and post-SEP [1, 38] by calculating t-statistics to evaluate the differences in path coefficients across models⁴.

Table 6 about Here

Table 6 shows the results of comparison between two path coefficients. The differences between two path coefficients show positive directions which indicate post-SEP is larger than pre-SEP for the dissonance ($\beta = .646 > \beta = .229$) and overall satisfaction ($\beta = .751 > \beta = .032$) according to the impact of two coefficients. Specifically, the t-value ($t = 21.69$) for difference (.416) between pre- and post-SEP on dissonance shows that path coefficients of post-SEP to dissonance were significantly stronger than the corresponding path coefficient of pre-SEP to dissonance. In addition, the difference (.719) between pre- and post-SEP for overall satisfaction also showed statistically significant ($t = 40.436$) that path coefficients of post-SEP were significantly stronger than the corresponding path coefficients of pre-SEP

⁴ $Spooled = \sqrt{[(N_1 - 1) / (N_1 + N_2 + 2)] \times SE_1^2 + [(N_2 - 1) / (N_1 + N_2 + 2)] \times SE_2^2}$, $t = (PC_1 - PC_2) / [Spooled \times \sqrt{(1/N_1 + 1/N_2)}]$, where, spooled indicates pooled estimator for the variance, N_i is sample size of dataset of group i , SE_i is standard error of path in structural model for group i , and PC_i is path coefficient in structural model of group i . *in this study, two group sizes = 50.*

(see Table 6). Therefore, hypothesis 2a and 2b were statistically supported.

In addition, Figure 4 shows that hypothesis 3 and 4 were statistically significant for the effect of dissonance on overall satisfaction ($\beta = .332, p < 0.001$) and the effect of overall satisfaction on repurchase intention ($\beta = .934, p < 0.001$)⁵. Thus, all hypotheses were statistically supported.

Figure 4 about Here

6. DISCUSSION & CONCLUSION

6.1. Research Findings

The purpose of this study was to investigate the impact of pre- and post-SEP on consumer satisfaction and repurchase intention by applying the experience-dissonance process. Specifically, we focused on examining three major issues: (1) The different effects of pre- and post-SEP on consumer satisfaction; and (2) the different impacts of pre- and post-SEP on consumer satisfaction and repurchase intention. By applying PLS analysis and multiple regression analyses, the results of the study show strong support for the proposed hypotheses.

The results are summarized as follows: First, that online consumers perceive SEP in two different stages (i.e., pre- and post-SEP)—rather than recognizing the SEP as a whole—when evaluating their satisfaction. This indicates that online consumers' satisfaction can be cumulative from multiple service encounters experienced in online transactions. Consistent with this idea, the results revealed that in general post-SEP had a greater impact on consumer satisfaction than pre-SEP. This suggests that consumers tend not only to focus on post-SEP when assessing their satisfaction in order to justify their vendor choice, but also in order to adjust their evaluation given the new information from post-SEP that is compared against pre-SEP, based upon the recency effect.

Second, the results suggested that when dissonance exists, the degree of consumer satisfaction was

⁵ For the high correlation and R^2 , in their study, Spreng et al.[72] R.A. Spreng, G.D. Harrell, R.D. Mackoy, Service recovery: Impact on satisfaction and intentions, *Journal of Services Marketing*, 9(1) (1995) 15-23. showed that with only one item for each construct, satisfaction and repurchase intention have strong relationship that the path coefficient of the relationship between satisfaction repurchase intention is 1 which indicate perfect relationship

affected by the level of dissonance. In addition, the effects of pre- and post-SEP has a different impact on dissonance and consumer satisfaction. The impact of post-SEP was greater on dissonance and consumer satisfaction than pre-SEP. This implies that when post-SEP is higher than pre-SEP, the service experience is more salient and influential for consumers in order to evaluate their satisfaction with vendors and/or service qualities.

Finally, based on the results of the study, consumer satisfaction was positively related to repurchase intention. The theoretical and practical implications are discussed in the following section.

6.2. Theoretical Implications

This study makes several theoretical contributions to further understanding of consumers' satisfaction formation processes in online markets. First, this study develops a comprehensive theoretical framework, identifying how consumers' satisfaction is established and why they choose to repurchase from a particular vendor by integrating cognitive consistency theory with expectation-confirmation theory. This framework allows us to have a better understanding about online consumers' attitudes and behavioral intentions by reflecting upon those unique characteristics peculiar to online markets.

Second, to our knowledge, this study is the first attempt to apply SEP in order to articulate consumer satisfaction and repurchase intention in online markets by identifying the relationship between pre- and post-SEP and consumer satisfaction. Previously, the concept of expectation has been defined in various ways [e.g. 40, 73, 76] and prior research on expectation-confirmation processes has reported mixed results on whether expectations can predict consumer satisfaction [73]. However, this study suggests that consumer satisfaction can be approached based on consumers' cognitive efforts to reduce dissonance.

Third, this study extends prior research on satisfaction formation process by applying a unique perspective, embedded in online shopping, to evaluate overall satisfaction regarding online vendor services using the comparison of different types of service performance occurring in pre- and post-purchase stages. These features have not been clearly addressed in the information systems arena [73]. Unlike offline transactions, in online transactions, the consumer's purchase is not executed until they have

experienced pre-SEP. Even if the consumer is satisfied with the pre-service encounter, unless this satisfaction is corroborated with a post-service encounter, the overall satisfaction is not guaranteed. The results of the study provided strong support for the hypothesis that there is a positive association between post-SEP and overall satisfaction. Our findings are consistent with the results of prior research on satisfaction formation process in a way that dissonance determines overall satisfaction.

In Internet-based services, vendors' offerings are changing rapidly. For example, vendors introduce important novelty elements (e.g., usability, searching ability, and tracking systems, etc.) inherent in information technology that limits consumers' ability to form accurate expectations. This causes rapid or constant changes in nature and the level of cognitive standards [41]. Since online satisfaction is likely to be more dynamic in nature with higher variability of its determinants over time [41], this leads consumers to evaluate their overall satisfaction by comparing two different, but cognitively comparable service experiences from two periods of time that a transaction occurs.

Bhattacheree [10] suggested that post-hoc standards of evaluation were likely to change as a result of accumulated experiences during the transaction. In other words, as Gardiel et al. [26] noted, consumers' evaluation criteria can change across the time between pre- and post-purchase. Along these lines, the relative time gap between pre- and post-purchase, one of the aspects of online shopping was also a primary motive for this study to examine how consumers satisfaction and repurchase intention are formed in online shopping contexts. Such an investigation in terms of experience-discrepancy dissonance process in online transactions allows us to have a better understanding of the underlying psychological mechanisms of the online consumers/end-users and this explains the importance of dynamic nature in online shopping characteristics.

Finally, we theorized that each SEP has its own set of functions. For example, pre-SEP helps decision-making for choosing vendors, while post-SEP assumes an enriching role that reinforces the consumers' purchasing decision. By examining the impacts of pre- and post-SEP on consumer satisfaction and repurchase intention, this study enhances the predictability of consumers' satisfaction formation processes that underlie the online marketplace.

6.3. Practical Implications

This study also has implications for practitioners in online markets. First, by assessing consumers' pre- and post-ordering SEP and SEP dissonance, online vendors are able to explore whether they provide products, services, and/or information that achieve high levels of consumers' satisfaction and repurchase intention. In other words, consumers' SEP will be a useful indicator for estimating a vendor's current effectiveness in providing quality of a retailer's services. In addition, online vendors could strategically manage their consumers' levels of satisfaction and repurchase intention by focusing on the different functions of SEP. For example, as described, the distinct roles of pre- and post- SEP—that pre-SEP helps consumers choose a certain vendor while post-SEP encourages them to repurchase from that vendor by enriching and justifying their initial decisions—allows online vendors to design their own strategies according to their current situations and targets. By creating a concordant relationship between pre- and post- SEP, online vendors can maximize their consumers' levels of satisfaction and repurchase intention.

The importance of satisfying consumers' pre- and post- SEP can be emphasized for existing as well as new consumers. Once a consumer has established a familiarity with a vendor, he/she will likely spend less time and effort on the next purchase than the initial one. As long as their vendor choice continues to be confirmed by post-SEP, consumers will likely continue to purchase from the same vendor. Consequently, it is vital for online vendors to appeal to new consumers in order to secure the initial transaction. By satisfactorily meeting new consumers' pre- and post-SEP, online vendors will not only be able to achieve the high levels of consumer satisfaction and repurchase behaviors, but also to retain loyal consumers. Since dissonance between pre- and post-SEP indicates importance of both SEPs in establishing consumers' decision-making (i.e., repurchase intention), practitioners can help retain consumers by balancing factors between SEPs. More importantly, these two pre- and post-SEPs have different characteristics; factors in pre-SEP are more involved in tangible facets for vendor's website such as ease of use and look & design of website.

This research also contributes to online shopping managers, especially for electronic commerce

providers (e.g., online banks, online brokerages) whose business models and revenue streams are founded upon Internet website design based on IS. Pre- and post-SEP can provide the effective design for Web sites in online businesses. After initial transaction with the vendor, consumers can repeatedly purchase at the same online vendor in next transaction as long as they judge that their decision making for the vendor is not wrong because of their tendency to spend relatively less efforts for repurchasing than initial purchasing and familiarity with the vendor. Effective management of WebPages requires ex ante identification of belief and attitude changes (that govern the Websites) and understanding the key levers of the changes. Such understanding can assist online shopping managers in the proactive planning of website design (e.g., usability, convenience, or tracking systems) to minimize the probability and impacts of change. By enriching or justifying consumers' decision, post-service encounter satisfaction leads to high consumer satisfaction in online contexts. By keeping a balance between pre- and post-SEP, online vendors can manage their services with high levels that consumers want to purchase repeatedly.

6.4. Limitations and Suggestions for Future Research

The present study has some methodological limitations to be considered in future research. First, in estimating each factor in the satisfaction formation process, some measurement issues on the concept of dissonance are worth mentioning. To measure the concept of dissonance in this study, we used '*Product Met Expectations*', that indicated if a correct product was delivered and it worked as described/depicted. This single item, however, may not fully tap into the concept of dissonance. It would be valuable if future research could investigate the hypothesized relationships using a more sophisticated measure of *dissonance*.

Second, we admit that there is a debatable issue regarding our theoretical framework for the consumers' satisfaction formation process. That is, in an online shopping context, it may not be clear whether a consumer perceives the services provided by a vendor as two different kinds, pre- and post-SEP as we framed in this study. It could be possible for online consumers to consider these services as a single package service performance based on expectation-confirmation theory. Since using pre- and post-SEP in

online settings is a new theoretical perspective, it would be enormously valuable if future research replicates our hypothesized relationships using measurements that are more elaborate.

Third, this study was conducted with a cross sectional data set. Karahanna et al. mentioned [37], that cross-sectional data should be used for testing static constructs. Based on this, our study used cross-sectional data to carry out restricted temporal comparisons of pre-SEP and post-SEP constructs. However, discrepancy theory uses only performance items, while expectation-confirmation theory uses expectation and performance which indicate time differences. As mentioned, discrepancy is derived from pre-service experience items and post-service experience items that are both conducted after consumers' experience. Compared to expectation-confirmation theory, which uses expectation before the consumers measure their expectation and performance after they evaluate, discrepancy theory does not need to use longitudinal data.

In addition, the usage of the data from a secondary source did not allow us to control the effects of vendor reputation, vendor familiarity, and consumers' trust toward vendors. Such constructs were not available in the data used in this study. Further, consumer satisfaction and repurchase intention were assessed using a single-item measure. Although using a single-item measure does not lead to invalid results in the structural equation modeling analysis, it may deteriorate the measurement model and, ultimately, may lead to theoretical weakness [38]. Therefore, in order to alleviate the aforementioned limitations, it would be enormously valuable if future research replicates the conceptual model of this study using data collected directly from online consumers.

A fourth limitation is about the measure for dissonance. The item 'product met expectation' used as a proxy in this study helps to find the fit between consumers' expectation with actual experience regarding the product after the product was delivered and if it worked as described/depicted. Future research needs to develop multiple items to measure the dissonance construct so that it can have solid and clear results.

Lastly, in this study, even though since our primary concern was the SEP dissonance derived from inconsistent levels of pre- and post-SEP, we did not consider those situations in which consumers perceive a consistency between pre- and post-SEP nor their effects on consumer satisfaction and

repurchase intention. Therefore, the examination of SEP consistency and its impact on online consumers' purchasing attitudes and behaviors remains a topic for future research.

6.5. Conclusion

Despite these limitations, this study contributes to identifying a better understanding about online consumers' satisfaction formation processes by investigating some features that are unique to online transactions: the roles of pre- and post-SEP in the experience-dissonance process. Conceptually, this study incorporated expectation-confirmation theory in order to support theoretical arguments as well as present solid empirical results supporting the hypotheses. These results suggest that pre- and post-SEP become critical factors in establishing and affecting consumer satisfaction and repurchase intention. Our aim in this paper was to provide some fundamental work that stimulates continuing endeavors into the unique features of online markets by information systems researchers. We hope that this study encourages future research to examine and amplify the potential roles of pre- and post-SEP in various transactions in online contexts.

Acknowledgements

We would like to thank the Editor in Chief for his encouragement, as well as the AE and referees for their comments that have greatly improved the clarity of the paper. We also would like to thank Dr.

Parasuraman for providing an example, based on his experience, to improve our theoretical framework.

The research of the third author has been funded in part by NSF under grant 0916612 and by Sogang Business School's World Class University Project (R31-20002) funded by Korea Research Foundation.

The usual disclaimer applies.

References

- [1] M.K. Ahuja, J.B. Thatcher, Moving Beyond Intentions and Toward the Theory of Trying: Effects of Work Environment and Gender on Post-Adoption Information Technology Use, *MIS Quarterly*, 29(3) (2005) 427.
- [2] I. Ajzen, M. Fishbein, *Understanding Attitudes and Predicting Social Behavior*, (Prentice Hall, Englewood Cliffs, NJ, 1980).
- [3] E.W. Anderson, C. Fornell, D.R. Lehmann, Customer satisfaction, market share, and profitability: Findings from Sweden, *Journal of Marketing*, 58(3) (1994) 53.
- [4] E.W. Anderson, M.W. Sullivan, The antecedents and consequences of customer satisfaction for firms, *Marketing Science*, 12(2) (1993) 125.
- [5] A. Aribarg, N. Arora, H.O. Bodur, Understanding the role of preference revision and concession in group decisions, *JMR, Journal of Marketing Research*, 39(3) (2002) 336.
- [6] R.P. Bagozzi, The Role of Psychophysiology in Consumer Research, in: T.S. Robertson, H.H. Kassarian Eds. *Handbook of Consumer Research*, (Prentice Hall, Englewood Cliffs, NJ, 1991), pp. 124-161.
- [7] D.C. Barclay, C. Higgins, R. Thompson, The Partial Least Squares Approach to Causal Modeling: Personal Computer Adoption and Use as an Illustration, *Technology Studies*, 2(2) (1995) 285-308.
- [8] P.D. Berger, R.N. Bolton, D. Bowman, E. Briggs, et al., Marketing actions and the value of customer assets: A framework for customer asset management, *Journal of Service Research : JSR*, 5(1) (2002) 39.
- [9] A. Bhattacharjee, An empirical analysis of the antecedents of electronic commerce service continuance, *Decision Support Systems*, 32(2) (2001) 201-214.
- [10] A. Bhattacharjee, Understanding information systems continuance: An expectation-confirmation model, *MIS Quarterly*, 25(3) (2001) 351.
- [11] M.J. Bitner, S.W. Brown, M.L. Meuter, Technology infusion in service encounters, *Academy of Marketing Science. Journal*, 28(1) (2000) 138.
- [12] M.J. Bitner, A.R. Hubbert, Encounter Satisfaction Versus Overall Satisfaction Versus Quality, in: R.T. Rust, R.L. Oliver Eds. *Service Quality: New Directions in Theory and Practice*, (SAGE Publications Ltd., Thousand Oaks, CA, 1994), pp. 72-94.
- [13] R.N. Bolton, A dynamic model of the duration of the customer's relationship with a continuous service provider: The role of satisfaction, *Marketing Science*, 17(1) (1998) 45.
- [14] W. Boulding, A. Kalra, R. Staelin, V.A. Zeithaml, A dynamic process model of service quality: From expectations to behavioral intentions, *JMR, Journal of Marketing Research*, 30(1) (1993) 7.
- [15] Y. Cao, T.S. Gruca, The influence of pre- and post-purchase service on prices in the online book market, *Journal of Interactive Marketing*, 18(4) (2004) 51.
- [16] A.N.K. Chen, S. Sen, B.B.M. Shao, Strategies for effective Web services adoption for dynamic e-businesses, *Decision Support Systems*, 42(2) (2006) 789-809.
- [17] W.W. Chin, Issues and opinion on structural equation modeling, *MIS Quarterly*, 22(1) (1998) VII.

- [18] W.W. Chin, P.R. Newsted, Structural Equation Modeling Analysis with Small Samples Using Partial Least Squares, in: R.H. Hoyle Ed. *Statistical Strategies for Small Sample Research* (Sage Publications, Thousand Oaks, CA, , 1999), pp. 307-341.
- [19] G.A. Churchill, Jr., C. Surprenant, An Investigation into the Determinants of Customer Satisfaction, *JMR, Journal of Marketing Research*, 19(4) (1982) 491.
- [20] J.B. Cohen, M.E. Goldberg, The dissonance model in post-decision product evaluation, *JMR, Journal of Marketing Research* (pre-1986), 7(000003) (1970) 315.
- [21] L.A. Crosby, N. Stephens, Effects of Relationship Marketing on Satisfaction, Retention, and Prices in the Life Insurance Industry, *JMR, Journal of Marketing Research*, 24(4) (1987) 404.
- [22] J.A. Czepiel, M.R. Solomon, C.F. Surprenant, E.G. Gutman, Service Encounters: an overview, in: J.A. Czepiel, M.R. Solomon, C.F. Surprenant Eds. *The Service Encounter: Managing Employee/Customer interaction in service businesses*, (Lexington, MA, 1985), pp. 3-15.
- [23] S. Devaraj, M. Fan, R. Kohli, Antecedents of b2C channel satisfaction and preference: Validation e-Commerce metrics, *Information Systems Research*, 13(3) (2002) 316.
- [24] H.J. Einhorn, R.M. Hogarth, Ambiguity and Uncertainty in Probabilistic Inference. [Article], *Psychological Review*, 92(4) (1985) 433-461.
- [25] L. Festinger, *A Theory of Cognitive Dissonance*, (Stanford University Press, Stanford, California, 1957).
- [26] S.F. Gardial, D.S. Clemons, R.B. Woodruff, D.W. Schumann, M.J. Burns, Comparing consumers' recall of prepurchase and postpurchase, *Journal of Consumer Research*, 20(4) (1994) 548.
- [27] E.J. Garrity, B. Glassberg, Y.J. Kim, G.L. Sanders, S.K. Shin, An experimental investigation of Web-based information systems success in the context of electronic commerce, *Decision Support Systems*, 39(3) (2005) 485.
- [28] D.D. Gremler, M.J. Bitner, K.R. Evans, The internal service encounter, *International Journal of Service Industry Management*, 5(2) (1994) 34.
- [29] V. Grover, J. Lim, R. Ayyagari, The Dark Side of Information and Market Efficiency in E-Markets*, *Decision Sciences*, 37(3) (2006) 297.
- [30] C.P. Haugtvedt, D.T. Wegener, Message order effects in persuasion: An attitude strength perspective, *Journal of Consumer Research*, 21(1) (1994) 205.
- [31] S. Hong, J.Y.L. Thong, K.Y. Tam, Understanding continued information technology usage behavior: A comparison of three models in the context of mobile internet, *Decision Support Systems*, 42(3) (2006) 1819-1834.
- [32] F. Huber, A. Herrmann, M. Wricke, The relationship between customer satisfaction and price acceptance: An empirical study, *American Marketing Association. Conference Proceedings*, 11(2000) 175.
- [33] Y. Hwang, D.J. Kim, Customer self-service systems: The effects of perceived Web quality with service contents on enjoyment, anxiety, and e-trust, *Decision Support Systems*, 43(3) (2007) 746-760.

- [34] P. Jiang, B. Rosenbloom, Customer intention to return online: price perception, attribute-level performance, and satisfaction unfolding over time, *European Journal of Marketing*, 39(1/2) (2005) 150.
- [35] M.D. Johnson, The Differential Processing Of Product Category And Noncomp, *Journal of Consumer Research*, 16(3) (1989) 300.
- [36] K.G. Jöreskog, H. Wold, *Systems Under Indirect Observation, Part I and II*, (North Holland, Amsterdam, 1982).
- [37] E. Karahanna, D.W. Straub, N.L. Chervany, Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs, *MIS Quarterly*, 23(1999) 183-213.
- [38] M. Keil, B.C.Y. Tan, K.-K. Wei, T. Saarinen, et al., A cross-cultural study on escalation of commitment behavior in software projects, *MIS Quarterly*, 24(2) (2000) 299.
- [39] S. Kekre, M.S. Krishnan, K. Srinivasan, Drivers of customer satisfaction for software products: Implications for design and service support, *Management Science*, 41(9) (1995) 1456.
- [40] W.J. Kettinger, C.C. Lee, Pragmatic perspectives on the measurement of information systems service quality, *MIS Quarterly*, 21(2) (1997) 223.
- [41] M. Khalifa, V. Liu, Explaining the Determinants of Satisfaction at Different Stages of Adoption in the Context of Internet-based Services, in: *Proceedings of International Conference on Information Systems 2002*, (2002).
- [42] D.J. Kim, D.L. Ferrin, H. Raghav Rao, Trust and Satisfaction, the two Wheels for Successful e-Commerce transactions: A Longitudinal Exploration, *Information Systems Research*, (Forthcoming).
- [43] J. Kim, A. Segev, A Web Services-enabled marketplace architecture for negotiation process management, *Decision Support Systems*, 40(1) (2005) 71-87.
- [44] P.A. LaBarbera, D. Mazursky, A longitudinal assessment of consumer satisfaction/dissatisfaction: The dynamic aspect of the cognitive process, *Journal of Marketing Research*, 20(4) (1983) 393.
- [45] V. McKinney, K. Yoon, F. Zahedi, The measurement of Web-customer satisfaction: An expectation and disconfirmation approach, *Information Systems Research*, 13(3) (2002) 296.
- [46] M.L. Meuter, A.L. Ostrom, R.I. Roundtree, M.J. Bitner, Self-service technologies: Understanding customer satisfaction with technology-based service encounters, *Journal of Marketing*, 64(3) (2000) 50.
- [47] V. Mittal, J. William T. Ross, P.M. Baldasare, The asymmetric impact of negative and positive attribute-level performance on overall satisfaction and repurchase intentions, *Journal of Marketing*, 62(1) (1998) 33.
- [48] D. Nevo, Y.E. Chan, A temporal approach to expectations and desires from knowledge management systems, *Decision Support Systems*, 44(1) (2007) 298-312.
- [49] S.M. Nowlis, I. Simonson, Attribute-task compatibility as a determinant of consumer preference reversals, *JMR, Journal of Marketing Research*, 34(2) (1997) 205.
- [50] R.L. Oliver, A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions, *JMR, Journal of Marketing Research*, 17(4) (1980) 460.

- [51] R.L. Oliver, Measurement and Evaluation of Satisfaction Processes in Retail Settings, *Journal of Retailing*, 57(3) (1981) 25.
- [52] R.L. Oliver, Cognitive, affective, and attribute bases of the satisfaction response, *Journal of Consumer Research*, 20(3) (1993) 418.
- [53] R.L. Oliver, P.V.S. Balakrishnan, B. Barry, Outcome satisfaction in negotiation: A test of expectancy disconfirmation, *Organizational Behavior and Human Decision Processes*, 60(2) (1994) 252.
- [54] R.L. Oliver, W.O. Bearden, Disconfirmation Processes and Consumer Evaluations in Product Usage, *Journal of Business Research*, 13(3) (1985) 235.
- [55] R.L. Oliver, R.T. Rust, S. Varki, Customer delight: Foundations, findings, and managerial insight, *Journal of Retailing*, 73(3) (1997) 311.
- [56] R.W. Olshavsky, J.A. Miller, Consumer expectations, product performance, and perceived product quality, *JMR, Journal of Marketing Research* (pre-1986), 9(000001) (1972) 19.
- [57] J.C. Olson, P.A. Dover, Disconfirmation of Consumer Expectations Through Product Trial, *Journal of Applied Psychology*, 64(2) (1979) 179.
- [58] X. Pan, B.T. Ratchford, V. Shankar, Price dispersion on the internet: A review and directions for future research, *Journal of Interactive Marketing*, 18(4) (2004) 116.
- [59] A. Parasuraman, Intertwining of Service Productivity, Quality and Innovation: for Services Implications in Emerging Markets, in: 1st International Conference on Services in Emerging Markets Indian School of Business, (Hyderabad, India, 2010).
- [60] C.W. Park, D.C. Smith, Product-Level Choice: A Top-Down Or Bottom-Up Process?, *Journal of Consumer Research*, 16(3) (1989) 289.
- [61] I. Park, A. Bhatnagar, H.R. Rao, Assurance Seals, On-Line Customer Satisfaction, and Repurchase Intention, *International Journal of Electronic Commerce*, 14(3) (2010) 11-34.
- [62] R.E. Petty, J.T. Cacioppo, Attitudes and Persuasion: Classic and Contemporary Approaches, (Wm. C. Brown Company Publishers, Dubuque, Iowa, 1981).
- [63] T. Pilioura, S. Hadjiefthymiades, A. Tsalgatidou, M. Spanoudakis, Using Web Services for supporting the users of wireless devices, *Decision Support Systems*, 43(1) (2007) 77-94.
- [64] Z. Qu, H. Zhang, H. Li, Determinants of online merchant rating: Content analysis of consumer comments about Yahoo merchants, *Decision Support Systems*, In Press, Corrected Proof.
- [65] A. Rai, S.S. Lang, R.B. Welker, Assessing the validity of IS success models: An empirical test and theoretical analysis, *Information Systems Research*, 13(1) (2002) 50.
- [66] N. Ramasubbu, S. Mithas, M.S. Krishnan, High tech, high touch: The effect of employee skills and customer heterogeneity on customer satisfaction with enterprise system support services, *Decision Support Systems*, 44(2) (2008) 509-523.
- [67] B.T. Ratchford, X. Pan, V. Shankar, On the efficiency of Internet markets for consumer goods, *Journal of Public Policy & Marketing*, 22(1) (2003) 4.

- [68] D.J. Reibstein, What attracts customers to online stores, and what keeps them coming back?, *Academy of Marketing Science. Journal*, 30(4) (2002) 465.
- [69] K.A. Saeed, Y. Hwang, M.Y. Yi, Toward an integrative framework for online consumer behavior research: A meta-analysis approach, *Journal of End User Computing*, 15(4) (2003) 1.
- [70] V. Shankar, A.K. Smith, A. Rangaswamy, Customer satisfaction and loyalty in online and offline environments, *International Journal of Research in Marketing*, 20(2) (2003) 153.
- [71] M. Sherif, C.I. Hovland, *Social Judgment: Assimilation and Contrast Effects in Communication and Attitude Change*, (Yale University Press, New Heaven, CT, 1961).
- [72] R.A. Spreng, G.D. Harrell, R.D. Mackoy, Service recovery: Impact on satisfaction and intentions, *Journal of Services Marketing*, 9(1) (1995) 15-23.
- [73] R.A. Spreng, S.B. MacKenzie, R.W. Olshavsky, A reexamination of the determinants of consumer satisfaction, *Journal of Marketing*, 60(3) (1996) 15.
- [74] C.F. Surprenant, M.R. Solomon, Predictability and Personalization in the Service Encounter, *Journal of Marketing*, 51(2) (1987) 86.
- [75] J.E. Swan, Consumer Satisfaction Related to Disconfirmation of Expectations and Product Performance, *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 1(1988) 40-47.
- [76] T.P. Van Dyke, L.A. Kappelman, V.R. Prybutok, Measuring information systems service quality: Concerns on the use of the SERVQUAL questionnaire, *MIS Quarterly*, 21(2) (1997) 195.
- [77] R.A. Westbrook, Product/Consumption-Based Affective Responses and Postpurchase Processes, *JMR, Journal of Marketing Research*, 24(3) (1987) 258.
- [78] M.L. Williams, S.B. Malos, D.K. Palmer, Benefit system and benefit level satisfaction: An expanded model of antecedents and consequences, *Journal of Management*, 28(2) (2002) 195.
- [79] J. Wu, D. Padgett, A direct comparative framework of customer satisfaction: An application to Internet search engines, *Journal of Interactive Marketing*, 18(2) (2004) 32.
- [80] Y. Yi, A Critical Review of Consumer Satisfaction, in: V. Zeithaml Ed. *Review of Marketing*, (American Marketing Association, 1990).
- [81] Y. Yi, The Determinants of Consumer Satisfaction: The Moderating Role of Ambiguity, *Advances in Consumer Research*, 20(1) (1993) 502-506.
- [82] V.A. Zeithaml, Service excellence in electronic channels, *Managing Service Quality*, 12(3) (2002) 135.