

*Full Length Research Paper*

# The effect of website quality on consumer emotional states and repurchases intention

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**Although, website features can significantly affect consumers' emotional responses, very little is known about how website quality predicts consumer emotions. Because of the increasing importance of online shopping, finding a successful method for inducing consumers' repeat purchase intention is critical to the survival of online service providers. Using the stimulus-organism-response (S-O-R) paradigm as a theoretical framework, this study proposed a research model for examining the relationships among website quality, consumer emotions, and repurchase intention. The analytical results strongly supported the appropriateness of the research model. This study discussed the theoretical and managerial implications of these findings and offered directions for future research.**

**Key words:** Website quality, consumer emotions, purchase intention, stimulus-organism-response (S-O-R) paradigm.

## INTRODUCTION

The emergence of the Internet as an electronic marketplace is profoundly impacting marketing. The convenience of online shopping has given online service providers the ability to manage consumers' orders through the Internet, which has made transaction processes much easier and more efficient. According to the Nielsen Company's research in 2010, more than half (70%) of consumers prefer to shop online via websites that allow them to select products or services from various online stores (e.g., Yahoo! Shopping, AOL Shopping, and MSN Shopping) (Nielsen, 2010).

With the increasing the importance of online stores, recent studies drawn from the stimulus-organism-response (S-O-R) paradigm (Mehrabian and Russell, 1974) have suggested that consumers' behavioral intentions are determined by various stimuli in the online environment and by the consumers' emotional responses (Eroglu et al., 2003). For example, researchers posit website features as environmental stimuli that influence the consumers' psychological processes (that is, emotions) and lead their purchase behaviors (Jiang et al., 2010;

Parboteeah et al., 2009). Inducing customer repeat purchases is critical to the survival of online service providers (Reichheld and Scheffer, 2000). Sometimes, online service providers face the problem of low purchase conversion rates (Moe and Fader, 2004), which invokes a significant concern over usability issues derived from poor website design (Venkatesh and Agarwal, 2006). Because consumers interact with websites to shop for products and services and because they have abundant choices in selecting online stores, website characteristics are crucial components of the online shopping environment (Jiang et al., 2010).

Although, the S-O-R model has been applied to the context of online shopping, existing research examines the various impacts of website stimuli on consumers' online shopping, such as high- and low-task relevant cues (Eroglu et al., 2003), task- and mood-relevant cues (Parboteeah et al., 2009), human and computer factors (Koo and Ju, 2009), and interactivity (Jiang et al., 2010). More importantly, the quality of an e-commerce website plays an important role in influencing consumers' purchasing decisions (DeLone and McLean, 2004) because consumers are more likely to shop at well-designed websites (Liang and Lai, 2002). However, scholars are uncertain what element of website quality acts as stimulus to influence online consumers' emotional reactions

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and behavioral responses. Given the theoretical relevance, this study uses the S-O-R model by investigating website stimuli in the context of online shopping. Therefore, the goal of this study is to report on empirical investigations that examine how variations in website quality influence the online consumer's emotional reaction, which in turn derives repurchase intention.

## LITERATURE REVIEW

### Stimulus-organism-response model

The research model draws from the S-O-R model, which posits that environmental cues act as stimuli that affect the consumers' emotional states (organism), which in turn affect their behaviors (responses). This study operationalizes "stimulus" as website quality (that is, information quality, system quality, and service quality), "organism" as positive and negative emotions, and "response" as the repurchase intention of consumers. This study has two advantageous reasons for the application of the S-O-R framework. First, it provides a parsimonious and theoretically justified way to investigate website quality as an environmental stimulus. Second, it enables an examination of the effect of emotional reactions to a website environment on the consumer's likelihood to repeat purchase in online shopping.

### Stimulus of website quality and emotional states

In the context of online shopping, website quality refers to the consumer's perception of the overall quality of a website (Poddar et al., 2009). This has emerged as an important determinant of consumer intention (Poddar et al., 2009). Moreover, website quality can only be measured from the consumer's viewpoint by separating information quality, system quality, and service quality (DeLone and McLean, 2004). This perspective provides a theoretical justification for considering website quality as a higher-order construct driven by these three fundamental factors. There are two primary reasons for the proposed formative construct: (1) each dimension can independently cause the perception of website quality; (2) no dimension necessarily has a covariance effect (for example, a consumer could have a high perception of system quality but a low perception of information quality). Therefore, the study construes website quality as a formative construct in order to capture its multidimensional nature parsimoniously.

Although, Mehrabian and Russell's (1974) scale offers a bipolar framework for emotional responses to environmental stimuli, previous studies have suggested that the unipolar view is more suitable for investigating consumption experiences. The scale has some limitations in its application to consumption-related emotion studies, such as ambivalence (that is, the joint occurrence of

pleasant and unpleasant states (Westbrook, 1987) or the simultaneous occurrence of positive and negative emotions (Babin et al., 1998). In line with the arguments of previous research, this study adopted the unipolar approach to consumption emotions (that is, positive and negative emotions) in response to website quality. Previous studies have shown that the design of a website plays a key role in influencing consumers' emotional states, such as excitement and enjoyment (Ha and Stoel, 2009; Lin and Lu, 2000). In line with this discussion, it is expected that consumer perception of website quality will predict consumers' positive and negative emotions. Therefore, we propose the first two hypotheses:

H<sub>1</sub>: Website quality has a positive effect on positive emotion.

H<sub>2</sub>: Website quality has a negative effect on negative emotion.

### Emotional states and behavioral intention

A response, in the S-O-R framework, represents approach or avoidance behaviors. The former includes all positive behaviors that might be directed toward a particular place, such as the desire to stay, explore, and affiliate, whereas avoidance behavior reflects the opposite (Mehrabian and Russell, 1974). Because behavioral intentions have been specified as a proxy of actual behavior in marketing studies (Fishbein and Ajzen, 1975), behavioral intentions in this study are selected as the target approach behavior is influenced by emotions. Repurchase intention refers to the likelihood that an individual will purchase from the site in the future (Pavlou and Gefen, 2004). Regarding the links between emotional states and approach or avoidance behavior, extant research supported that two emotions (that is, positive and negative) influence this behavior; shoppers who experience positive emotions are more likely to adopt approach behavior, whereas negative emotions are more likely to produce avoidance behavior (Yalch and Spangenberg, 2000). Accordingly, we propose the next two hypotheses.

H<sub>3</sub>: Positive emotion has a positive effect on repurchase intention.

H<sub>4</sub>: Negative emotion has a negative effect on repurchase intention.

The present study, based on the S-O-R model, aims to test the research model (including website quality, consumer emotions, and repurchase intention) in order to predict consumers' online shopping behaviors in online stores. It is expected that consumer perception of website quality predicts consumers' positive emotion (H<sub>1</sub>) and negative emotion (H<sub>2</sub>). It is also expected that consumer

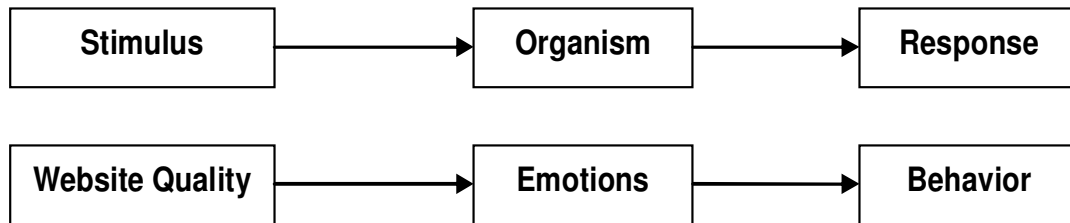


Figure 1. An S-O-R model of consumer response to website quality.

positive emotion predicts repurchase intention ( $H_3$ ). In addition, the impact of consumer negative emotion on repurchase intention is explored ( $H_4$ ). Figure 1 represents a framework that is convergent with the S-O-R paradigm in the context of online shopping, which is consistent with environmental psychology literature.

## METHODOLOGY

The structured questionnaire was generated based on academic and practitioner-oriented literatures and interviews. The data were secured by means of a four-page self-administered questionnaire as part of a wider examination of Yahoo! Shopping consumers' emotions, perceptions of website quality, and repurchase intentions. Following the suggestions of Churchill (1979), existing scales were adopted, modified, and extended. Information was gathered employing five-point Likert-type scales that ranged from (1) strongly disagree to (5) strongly agree.

### Sample and data collection

The respondents completing the questionnaire were 383 online users (180 men, 203 women); 57.4% were under 25 years of age, and 68.4% had earned at least a college degree, indicating that the respondents were primarily young and educated. In addition, 63.4% purchased from Yahoo! Shopping more than 10 times in one year. A Web-based survey was employed to test the research model with data from shoppers in Yahoo! Shopping. Yahoo! Shopping was chosen because it is the largest online marketplace in Taiwan. To increase the response rate of online shoppers, a banner with a hyperlink connecting to the web survey was published on Yahoo! Shopping's chat rooms and virtual communities. The first page of the questionnaire addressed the purpose of this study, the length of the questionnaire, and the incentive; it also assured the respondent of the survey's confidentiality. Respondents were instructed to answer all of the questions based on their experience buying products from sellers in Yahoo! Shopping. As an incentive, 30 randomly selected respondents were contacted using e-mail in order to obtain their names and addresses so we could mail each chosen respondent a NT\$100 certificate. In total, 383 responses were found to be complete and valid for data analysis. The data were collected during October and December of 2009.

Because the data were self-reported, the study used Harmon's one-factor test (Podsakoff and Organ, 1986) to examine whether a common-method bias was present. The items used to measure the dependent and independent variables were entered into a single exploratory factor analysis. The six extracted factors accounted for 72.7% of the variance. A single factor did not emerge, and the first factor accounted for 31.1% of the total variance. Common method bias is an unlikely concern in the data. Therefore, the data are considered suitable for validating the proposed research model.

## Measures

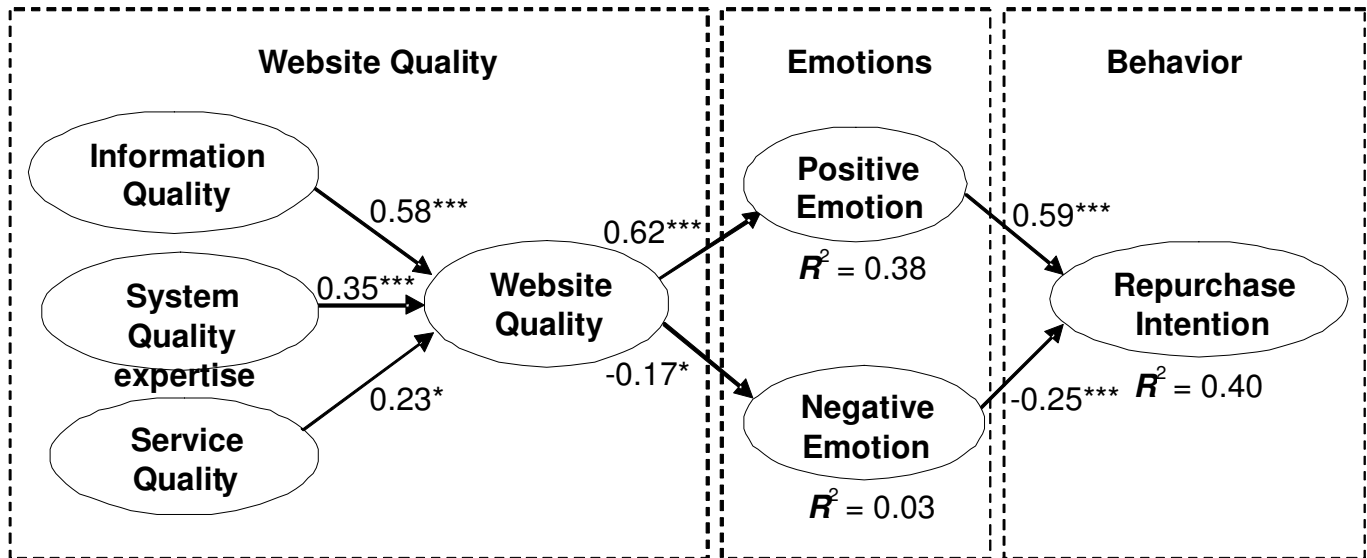
A minimum of three items was selected to measure each construct. Website quality was based on the basic concept of the IS success model and was assessed using first-order constructs to measure information quality, system quality, and service quality (DeLone and McLean, 2004). Information quality was measured using four items adapted from the research of Wixom and Todd (2005), focusing on the extent to which website content should be completeness, accuracy and currency. System quality was measured using five items adapted from Wixom and Todd (2005), focusing on system characteristics such as availability, reliability, and timeliness. Service quality was measured using five items adapted from Jayawardhena (2004), focusing on support activities delivered by the service provider, including reliability, responsiveness, assurance, and empathy. Consistent with its conceptualization, website quality was proposed as a second-order construct formed by the three first-order constructs. Emotions were mainly modified from Jang (2009) and were measured by two constructs, positive emotion and negative emotion. Positive emotion was measured by four items: joy, excitement, peacefulness, and refreshment. Negative emotion was measured using five items: anger, distress, disgust, fear, and shame. Repurchase intention was adopted and modified mainly from Pavlou and Gefen (2004), and it was measured with three items.

## RESULTS

The partial least squares (PLS) method was primarily used to evaluate the research hypotheses. PLS is helpful because it can estimate models that incorporate both reflective and formative indicators (Chin, 1998), as was the case with the present research. Hence, the structural equation modeling procedures implemented in PLS Graph 3.0 (Chin, 2003) was used to perform a simultaneous evaluation of both the quality of measurement (the measurement model) and construct interrelationships (the structural model).

### Measurement properties

Scale reliability was tested, and the Cronbach alpha values were 0.73-0.93 for the six constructs, indicating a high internal consistency of measure reliability (Nunnally, 1978). Composite reliability was then assessed by examining the  $\rho_c$  values for the constructs, all of which were above the suggested threshold of 0.7. The average variance extracted (AVE) values were all above the



**Figure 2.** Test results of the research model  
 \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

recommended threshold of 0.50, and the square root of the AVE of each construct was greater than the construct correlation (Fornell and Larcker, 1981). The convergent and discriminant validity tests were both satisfied. Overall, the results suggest a satisfactory fit of the model to the data.

### Hypotheses testing

Hypotheses were tested within the structural model shown in Figure 2. The path coefficients for the research constructs are expressed in a standardized form. The significance levels of paths in the research model were determined using bootstrap resampling procedures. All four links were significant in supporting the four proposed hypotheses. Hypothesis 1, proposing that website quality has a positive and significant effect on positive emotion, is supported ( $\beta = 0.62$ ,  $t = 13.43$ ,  $p < 0.001$ ). Hypothesis 2, theorizing that website quality has a negative and significant effect on negative emotion, is supported ( $\beta = -0.17$ ,  $t = 2.04$ ,  $p < 0.05$ ). Hypothesis 3, assuming that positive emotion has a positive and significant effect on repurchase intention, is supported ( $\beta = 0.59$ ,  $t = 12.74$ ,  $p < 0.001$ ). Hypothesis 4, suggesting that negative emotion has a negative and significant effect on repurchase intention, is supported ( $\beta = -0.25$ ,  $t = 4.95$ ,  $p < 0.001$ ).

For  $R^2$  values, website quality explains 0.38 of the variance in positive emotion, which exceeds the cutoff value of 0.26 for a large effect size; additionally, it explains 0.03 of the variance in negative emotion, which exceeds the cutoff value of 0.02 for a small effect size (Cohen, 1988). Together, positive emotion and negative emotion explain 40% of the variance in repurchase

intention. An important part of model evaluation is the examination of fit indexes that reflect the predictive power of estimated inner and outer model relationships. Two elements have been suggested as global fit measures for the PLS path modeling (Tenenhaus et al., 2005): goodness of fit ( $GoF$ ;  $0 < GoF < 1$ ), defined as the geometric mean of the average communality, and average  $R^2$  (for endogenous constructs). In this study, the  $GoF = \sqrt{[(0.71) \times (0.20)]} = 0.37$ , which is satisfactory.

### DISCUSSION

This study develops a research framework and empirically investigates the effect of website quality on repurchase intention through consumer emotions. The study used the website quality construct based on the IS success model to conceptualize the relationships among information quality, system quality, and service quality. In this manner, the study explained how these elements of quality can affect consumer emotions, consequently influencing repurchase behaviors in online shopping. With all hypotheses supported, the present study contributes to the literature by proving the usefulness of the S-O-R model for encompassing the additional aspect of stimulus (that is, website quality) in the context of online shopping. The empirical results provide strong overall validation, and they emphasize the important role of website quality (which is formed by three elements) in facilitating the formation of consumer emotions. Moreover, a discrete positive or negative emotion provides unique influences on repurchase responses, and it is associated with the stimulus of website quality. Therefore, this empirical evidence could establish an important link among website

quality, emotions, and repurchase intention, rooted in the S-O-R model.

In addition to discussing theoretical implications, this study also provides managerial implications. Website quality plays a critical role in fostering consumer emotions. Hence, it is imperative for online service providers to design well-structured store websites and to deliver their promised services. Before beginning major online marketing programs, online service providers should focus on improving website quality, in order to evoke consumers' positive emotions, and on implementing superior-quality services, in order to inhibit negative emotions. Similarly, e-commerce site designers often must support online marketing programs, and instituting a managerial mechanism can help them adopt and maintain guidelines and managerial policies that will ensure successful website quality. This study suggests that website quality might need to exceed expectations in order to generate positive emotions and reduce negative emotions. Therefore, this goal is more challenging for online service providers operating in e-commerce environments that have high levels of e-commerce site designer interdependence and intense service activities. Furthermore, online service providers should meet or exceed consumer standards. Careful consideration must be given to implementing electronic customer relationship management (e-CRM) in such environments.

An understanding of the emotions that affect repurchase intention will better prepare e-commerce site designers to elicit positive emotions and, consequently, to enhance consumers' online repurchase intention. However, consumers are easily irritated by service failure, which results in negative emotions, especially since e-commerce lacks a face-to-face environment. The amplification effect of negative emotions about failure shopping experience will restrain consumers' repeat purchase intentions.

Thus, online service providers not only need to emphasize positive emotions in order to retain consumers but also need to take corrective actions if consumer emotions display warning signs. Furthermore, managers should allocate more service resources into their online marketing programs and campaigns and should foster closer relationships with consumers in order to generate positive emotions, to create new services accordingly, and eventually to produce future favorable behaviors.

### Limitations and future research

When interpreting the findings of this study, consider its limitations. First, this research is restrained by some limitations. All of the examined consumers were selected from a single online shopping store. Other well-known online shopping stores in Taiwan should also be investigated, such as PChome Online, which is known primarily as a shopping store. The generality of this study's model and findings to other online shopping stores would

require additional research. Second, individuals who had already purchased from Yahoo! Shopping might have different perceptions about the influence of website quality, which could have affected their emotions differently. Hence, the results should only be interpreted as explaining the repurchase intention of current online shoppers.

For future research, this study showed that continually investing in the quality management of a website is a desired approach for affecting consumer emotions. Researchers should continue this analysis by reinvestigating other issues in the nature of website design, online store atmospherics, consumer characteristics, and diverse cultural online shopping behaviors. Additionally, the study suggested that future studies should attempt to understand the types of websites that match the online shoppers' consumption behaviors model and to understand how service providers could direct such online shopping processes effectively.

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