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# Application of the Stimuli-Organism-Response (S-O-R) Framework to Online Shopping Behavior

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*This study uses the Stimuli-Organism-Response framework to examine how consumers' reasons for shopping and website stimuli affect their attitudes toward online shopping, their ability to regulate their emotional purchases, and their repurchase intentions. Results from a survey of 416 qualified respondents were analyzed using structural equation modeling. The results of the survey showed that (1) the hedonic shopping value has a positive effect on consumers' attitudes toward online shopping and emotional purchases, (2) the utilitarian shopping value has a significant effect on consumers' attitudes toward online shopping, (3) environmental stimuli positively influence consumers' attitudes toward online shopping and emotional purchases, and (4) consumers' attitudes toward online shopping positively affect their repurchase intention. However, there are no significant relationships between the utilitarian shopping value and emotional purchases or between emotional purchases and repurchase intention.*

*KEYWORDS emotional regulation, environmental stimuli, S-O-R framework, shopping value*

## INTRODUCTION

Information technology (IT) enables easy access to information about goods and services from both service provides and consumers, offers transaction security, and solves problems related to business applications and

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convenience (Bui and Kemp 2013; Kim and Li 2009). Therefore, the size of electronic commerce (i.e., e-commerce) has been continuously increasing, and IT in China is no exception.

China had 564 million Internet users in 2012 and 242 million online shoppers (GAIN 2013). China's online retail market amounted to USD 215 billion in 2012, accounting for 2.6% of the Chinese GDP and 6.3% of retail consumption. For instance, Taobao Marketplace, one of the well-known online shopping companies in China, reached USD 180 billion in transactions in 2012, which was higher than that achieved by Amazon (USD 90 billion) and eBay (USD 75 billion) in 2012 (China Internet Watch 2012).

Numerous studies on the online shopping market have examined online purchase intention (e.g., Bosnjak, Galesic, and Tuten 2007; Chiou and Ting 2011; Standifird, Roelofs, and Durham 2004), the emotional effect of online shopping (e.g., Bui and Kemp 2013; LaRose 2001; LaRose and Eastin 2002), online shopping motivations (e.g., Childers et al. 2001; Lee, Kim, and Fairhurst 2009; To, Liao, and Lin 2007), and attitudes about online shopping (e.g., Lee, Suh, and Whang 2003; Park, Han, and Park 2013; Sorce, Perotti, and Widrick 2005). These studies have shown that consumers' online shopping behaviors are complex and influenced by both internal factors and environmental stimuli.

However, research on Chinese consumers' reasons for shopping (i.e., shopping value) and emotional regulation (i.e., the processes by which individuals influence the emotions they have, when they have them, and how they experience and express them; Gross 2002) are rare in the field of marketing research and the online merchandise industry. Therefore, the purpose of the current study is to apply the principles of the Stimulus-Organism-Response (S-O-R) paradigm in order to elucidate consumers' online shopping behavior in the Chinese online shopping market. The S-O-R paradigm was adopted frequently in the shopping literature and is applicable to the online environment (e.g., Richard 2005; Koo and Ju 2010). Based on the S-O-R theory, this study determines the relationships among online shopping values, attitudes, customers' ability to regulate their emotional purchases, and repurchase intention; the effect of online environmental stimuli on customers' repurchase intention; and the mediating role of attitudes and emotional regulation in the relationship between shopping values and purchasing behaviors.

## LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### The S-O-R Framework

According to Mehrabian and Russell (1974), the shopping environment contains stimuli (S) that affect organisms (consumers; O) and result in approach or avoidance response (R) behaviors toward the store and in behaviors like

store searching, intention to purchase, and repurchase intention. This framework examines the environmental cues (e.g., color, lighting, music, crowding, fragrance, and layout) and their related influences on customers' internal states and external responses in retail store environments (e.g., Eroglu, Machleit, and Davis 2001; Koo and Ju 2010; Mehrabian and Russell 1974; Richard 2005; Wang, Hernandez, and Minor 2010).

Eroglu and colleague's (2001) application of the S-O-R framework to the atmospheric qualities of online retailing indicated that the shoppers' levels of involvement and atmospheric responsiveness mediate the relationship between environmental cues and shopping outcomes (e.g., site revisit, money and time spent). McKinney (2004) used the S-O-R model to determine that consumers' internal motivations for Internet shopping differ and that these motivations have a significant effect on shopping satisfaction. Richard (2005) proposed a new factor, information-seeking, into the S-O-R framework and inferred from the study's results that high task-relevant information has a positive influence on consumers' involvement with a site and their subsequent shopping behavior. Koo and Ju (2010) confirmed that online environmental cues affect customers' emotions and intentions, and based on the S-O-R framework, Wang and colleagues (2010) showed that there is a significant relationship among web aesthetics, online shoppers, perceived service quality, and satisfaction. O'Brien (2010) pointed out that the online shopper is motivated to engage in an interaction with the e-commerce website and, based on the responses from 802 online shoppers, demonstrated that the hedonic and utilitarian shopping values are the prominent variables in the online environment. Wang, Minor, and Wei (2011) also found that aesthetic stimuli from the web can evoke online shoppers' cognitive, affective, and conative outcomes (e.g., arousal, satisfaction, purchase, and revisit) in purchase tasks.

The current study develops a research model based on the S-O-R model (see Figure 2). Consistent with extant studies, the model considers hedonic and utilitarian shopping values internal motivations (e.g., McKinney 2004; O'Brien 2010), and treats the web environment as an external influence in the stimulus stage (e.g., Wang et al. 2011). This study also considers two additional factors, attitude toward online shopping and emotional regulation, as the "organism (O)" in the model and operationalizes the response (R) as repurchase intention (e.g., Gross 2002; Kim and Park 2005; Park et al. 2013).

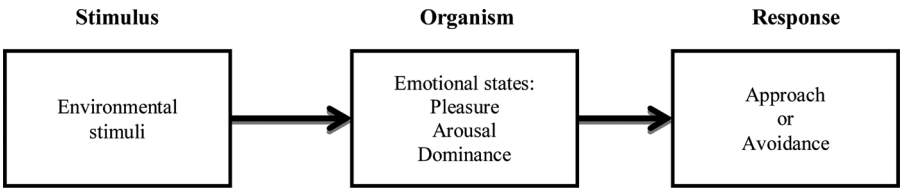


**FIGURE 1** S-O-R framework. *Source*: Mehrabian and Russell (1974).

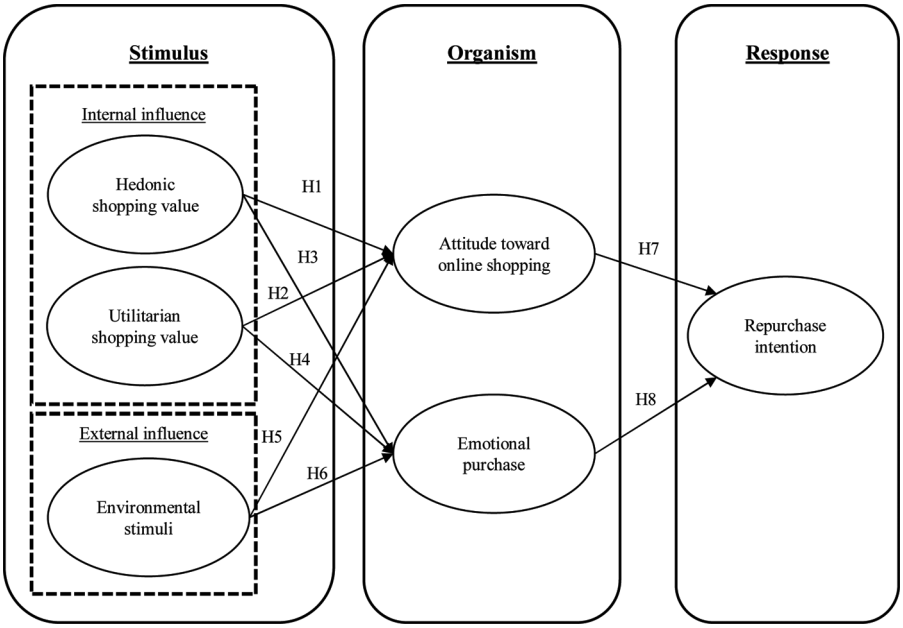


**FIGURE 2** Proposed research model.

## Online Shopping Value

According to studies in the field of retailing, the shopping experience provides consumers with a combination of hedonic and utilitarian shopping value (e.g., Babin, Darden, and Griffin 1994; Liu and Forsythe 2010; Sherry 1990; Sorce et al. 2005; To et al. 2007). Hedonic shopping value reflects shopping's potential entertainment and emotional worth, and can be indicated by the increased arousal, involvement, perceived freedom, escapism, fantasy, and emotive aspects of the shopping experience (Babin et al. 1994; Sorce et al. 2005). Utilitarian shopping value occurs when the shopping trip accomplishes particular consumption needs, reflecting a goal-oriented, cognitive, and non-emotional outcome (Babin et al. 1994). Thus, the shopping values are either intrinsic or extrinsic, where the intrinsic hedonic value signifies the motives of enjoyment, fun, and leisure, while the extrinsic utilitarian value is related to the functional attributes of shopping.

Several studies have pointed out that both hedonic and utilitarian values drive consumption behavior (e.g., Babin et al. 1994; Kim and Eastin 2011; Sebastianelli, Tamimi, and Rajan 2008; Sorce et al. 2005). Hedonic online shoppers tend to seek specific and unique experiences based on their ability to enhance the pleasure and entertainment of online shopping (Wolfinbarger and Gilly 2001; To et al. 2007). In contrast, utilitarian online shoppers are more likely to focus on the functional characteristic of the online experiences

such as product quality, price, usability, and other shopping task-related features (Sorce et al. 2005).

Research on online shopping has found that shopping motivations like hedonic and utilitarian value can affect shoppers' attitudes about online shopping (e.g., Childers et al. 2001; Chiou and Ting 2011). Ajzen (1991) stated that attitude contains a cognitive element. Spangenberg, Voss, and Crowley (1997) suggested that hedonic value was experienced on cognitive levels, while the utilitarian component is dominated by the cognitive element. Thus, the hedonic and utilitarian values can affect consumers' attitudes.

Chiou and Ting (2011) examined how online shopping motivation and product type affect online customers' behavior and found that customers can have a goal-oriented shopping motivation in buying hedonic goods and that this motivation has a positive effect on their attitude about online shopping. Bui and Kemp (2013) stated that hedonic shopping value was related to an increase in how often a customer purchases goods and services online, while Hausman and Siekpe (2009) mentioned that the online shopping site's usefulness and informativeness have a positive effect on utilitarian shoppers' attitudes toward the site and their purchase intentions. Given these findings, hypotheses were proposed:

H1: There is a positive relationship between the hedonic shopping value and attitude toward online shopping.
H2: There is a positive relationship between the utilitarian shopping value and attitude toward online shopping.

Gross (1998) reported that the most important purpose of regulating emotion is to modify emotional response and that consumers adjust or regulate their emotions using many approaches, including antecedent-focused regulation (cognitive reappraisal, or people have changed the behavior and physiological responding before the fully emotion response tendencies) and response-focused regulation (expressive suppression, or people have action after the emotion response tendencies have been expressed). Gross (2002) pointed out that individual behavior is associated with emotion, which refers to a state operated by something important to people and can make a set of behavioral, experiential, and physiological responses. Turliuc and Bujor (2013) showed that people use emotional regulation to control their emotional responses to the demands from the environment. Levav and McGraw (2009) demonstrated that customers could regulate and manage their emotions in different ways. With regard to online context, it is also worth exploring the extent of shoppers managing emotion using Internet shopping and the consequences of this way.

Studies have identified that consumers' views of the usefulness and informativeness of online shopping can directly affect their emotional state and repurchase intentions (e.g., Shim et al. 2001; Lee et al. 2003). Shim and

colleagues (2001) stated that a consumer who perceives more ease and confidence in Internet shopping is more likely to use the Internet to search for product information.

Yuksel (2007) showed that utilitarian shopping value has a positive emotional influence on shoppers' behaviors, although the influence is weaker than that of hedonic value. According to Kim, Lee, and Park (2014), consumers' individual differences in their online shopping experiences have a substantial influence on their perceived shopping value and shopping cost in the context of online shopping. For instance, they revealed that personal differences in shopping enjoyment have a positive effect on consumers' hedonic value and perceived shopping cost, which finding supports the current researchers' hypotheses concerning the relationship among hedonic shopping value, attitude toward online shopping, and emotional regulation (Kim et al. 2014):

H3: There is a positive relationship between hedonic shopping value and emotional purchases.
H4: There is a positive relationship between utilitarian shopping value and emotional purchases.

## Environmental Stimuli

The shopping environment can affect shopping behavior (Babin et al. 1994). Research has demonstrated that shopping environments evoke emotional responses, making shoppers perceive substantial differences in the affective qualities of stores (e.g., Ganesh et al. 2010; Machleit and Eroglu 2000). In particular, Ganesh and colleagues (2010) revealed that many web surfers are motivated to conduct online shopping activities because of the stimulation effect of interesting websites.

According to Frijdas's (1994) appraisal theory of emotions, the match between environmental stimuli and an individual's goal can generate positive emotions, while a mismatch can generate negative emotions. For example, a dark environment may evoke positive emotions when a person wants to sleep but negative emotions when he or she must work. The theory contends that in situations in which a person does not have a contradictory purpose, positive emotions can result from hedonic attributes of environmental stimuli (Frijdas 1994).

LaRose (2001) showed that the e-commerce environment includes features that could stimulate emotional purchase, and the following work of LaRose and Eastin (2002) showed that the reason for limited self-regulation when using online shopping could be the effect of sensory stimulation. Berger and Fitzsimons (2008) found that products are more accessible, evaluated more favorably, and chosen more frequently when the surrounding

environment contains more perceptually or conceptually related cues. Therefore, the following hypotheses are proposed

H5: There is a positive relationship between environmental stimuli and attitude toward online shopping.
H6: There is a positive relationship between environmental stimuli and emotional purchases.

## Relationships among Attitude, Emotion Regulation, and Consumer Behaviors

Ajzen (1991, 188) explained that one's attitude toward a behavior refers to "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question." Attitude was derived from salient beliefs about behaviors and evaluations of outcomes. Kim and Park (2005) demonstrated that positive attitudes toward online shopping consistently influence online purchase intentions. Park and colleagues (2013) pointed out that one's attitude toward e-customized products mediates the relationship between consumers' psychological characteristics and purchase intention, and concluded that consumers' attitudes toward an object are a main factor in the intention to purchase (Park et al. 2013). Bui and Kemp (2013) stated that emotion-regulation processes mediate the relationship between hedonic shopping value and repeat purchase intentions. Given these findings, the researchers hypothesize the following:

H7: There is a positive relationship between attitude toward online shopping and repurchase intentions.
H8: There is a positive relationship between emotional purchases and repurchase intention.

# METHODS

## Research Instruments

The initial items used in this study were developed based on empirical studies (e.g., Babin et al. 1994; Bui and Kemp 2013; Crowley 1993; Spangenberg et al. 1997). Academic experts in the field of business and management then reviewed the appropriateness of the measurement items, and 26 items were chosen to capture the latent constructs. All items were measured using a 7-point Likert scale, ranging from *strongly disagree* (1) to *strongly agree* (7).

Hedonic shopping value and utilitarian shopping value were measured on a combined scale based on the existing literature (Babin et al. 1994).

Specifically, the measurement of hedonic shopping value consisted of the following items: "Online shopping is truly a joy," "Compared to other things I could have done, the time spent online shopping was truly enjoyable," "I enjoyed the online shopping trip for its own sake, not just for the items I may have purchased," "During online shopping, I felt the excitement of the hunt," and "While online shopping, I felt a sense of adventure." This study used five items to assess utilitarian shopping value: "I accomplished just what I wanted to while online shopping," "I could buy what I really needed," "While online shopping, I searched only for the items I was looking for," "The prices of the products and services I purchased online were at right level," and "I feel my online shopping trip was successful." The items related to environmental stimuli consisted of "Online shopping is a cheerful thing," "The online shopping environment is lively," "The online shopping environment is bright," "The online shopping environment is interesting," "The online shopping environment has a stimulating ambience," and "The online shopping environment is colorful" (Spangenberg et al. 1997).

The items related to attitude toward online shopping were obtained from Lee (2007). Attitude was operationalized using four items: "I enjoy buying things through the Internet," "I prefer online shopping," "Purchasing in the online stores generally benefits the consumers," and "Online shopping is a good thing." The construct of emotional purchase was assessed by three items (Bui and Kemp 2013): "In general, I often do emotional shopping through the Internet," "I always use online shopping as a way to modify my emotions," and "I frequently shop online to cope with my emotions." Finally, the measurement of repurchase intention consisted of the following items: "I will likely repurchase from the online store," "I will probably repurchase from the online store," "I will have certain chances to repurchase from the online store," and "I will repurchase from the online store."

## Sample and Data Collection

Before the main survey was fielded, academic experts reviewed the relevance of the scale items and problems related to translation from English into Chinese. Then to validate and assess the understandability of the scale items, the questionnaire was pilot-tested with 80 participants. Based on the result of the pilot test, two items ("Online shopping is truly a joy" and "Online shopping is a cheerful thing") were eliminated because they cross-loaded on more than one factor (Hair et al. 2006).

The internal consistency of the six constructs was assessed using Cronbach's alpha. The Cronbach's alpha values (hedonic shopping value, 0.796; utilitarian shopping value, 0.679; environmental stimuli, 0.850; attitude toward online shopping, 0.786; emotional purchase, 0.786; and repurchase intention, 0.886) from the pilot test indicated that all the variables were internally consistent (Hair et al. 2006).

The main survey was conducted in the Chinese metropolitan areas of Beijing, Guangzhou, Shanghai, and Zhengzhou from October 13 through November 5, 2013. The survey was administered by well-trained students to a convenience sample of people who were approached in the universities, the streets, and around shopping malls. Potential participants were first asked whether they had purchased products online from Taobao (www.taobao.com), which is the most popular online marketplace in China. With around 760 million product listings as of March 2013, Taobao Marketplace is one of the top 20 most visited websites in the world (Chinaz 2012).

Participants who agreed to take part in the survey completed the self-administered questionnaire in the presence of the survey assistants, who collected the questionnaires immediately upon their completion. In total, 424 self-administered questionnaires were distributed, from which 416 usable questionnaires were obtained (98.1%). Of the 416 questionnaires, 335 (80.5%) were completed by respondents who were between 21 and 30 years old. Lin and Shen (2011) pointed out that the 18- to 29-year-old consumer group accounts for nearly 60% of online shoppers.

The collected data were analyzed using structural equation modeling (SEM) using the PASW Statistics 18.0 program. Data analysis followed the two-step approach suggested by Anderson and Gerbing (1988), Fornell and Larcker (1981), and Hair et al. (2006). The measurement model was first estimated through a confirmatory factory analysis (CFA), after which a structural model was tested.

## FINDINGS

### Measurement Model

The test of the suggested research model includes an analysis of reliability for internal consistency that is calculated using Cronbach's coefficient. The constructs' Cronbach's alphas range from 0.740 to 0.889, higher than the minimum cut-off score of 0.7 recommended by Hair and colleagues (2006) (table 1).

CFA is used to analyze the measurement model, comprised of the six constructs. CFA allows the specification and estimation of one or several hypothesized models of factor structure, each of which suggests a set of latent variables to account for the covariance among a set of observed variables (Anderson and Gerbing 1988; Hair et al. 2006). The result of the CFA necessitates dropping one item ("While online shopping, I searched for only the items I was looking for") for utilitarian shopping value because the item's standardized factor loading (0.310) is lower than 0.50 (Netemeyer, Bearden, and Sharma 2003).

Given the sensitivity of the chi-square statistics to sample size (Anderson and Gerbing 1988; Hair et al. 2006), other fit indexes are employed. The normed chi-square (chi-square/df) is used in order to reduce the sensitivity

**TABLE 1** Results of CFA for the Measurement Model

| Factors and items | Std. loadings | Critical ratio | α | AVE |
|---|---|---|---|---|
| Hedonic shopping value (HSV) | | | .820 | .632 |
| During online shopping, I felt the excitement of hunt. | .548 | fixed | | |
| I enjoyed the online shopping trip for its own sake, not just for the items I may have purchased. | .783 | .130 | | |
| Compared to other things I could have done, the time spent online shopping was truly enjoyable. | .811 | .136 | | |
| I continued to shop not because I had to, but because I wanted to. | .777 | .119 | | |
| Utilitarian shopping value (USV) | | | .740 | .521 |
| The prices of the products and services I purchased from online were at the right level and good quality. | .717 | fixed | | |
| I feel my online shopping trip was successful. | .792 | .074 | | |
| While online shopping, I searched just the items I was looking for. | .310 | deleted | | |
| I could buy what I really needed. | .807 | .075 | | |
| I accomplished just what I wanted to on the online shopping trip. | .779 | .073 | | |
| Environmental stimuli (ES) | | | .852 | .613 |
| Online shopping environment is lively. | .815 | fixed | | |
| Online shopping environment is bright. | .735 | .060 | | |
| Online shopping environment is interesting. | .784 | .052 | | |
| Online shopping environment is a stimulating ambience. | .727 | .062 | | |
| Online shopping environment is colorful. | .616 | .054 | | |
| Attitude toward online shopping (ATT) | | | .809 | .567 |
| I enjoy buying things through the Internet. | .780 | fixed | | |
| I prefer online shopping. | .699 | .066 | | |
| Purchasing in the online stores generally benefits the consumers. | .613 | .063 | | |
| Online shopping is a good thing. | .776 | .058 | | |
| Emotional purchase (EP) | | | .889 | .579 |
| In general, I often do the emotional shopping through Internet. | .863 | fixed | | |
| I always take online shopping as my emotion modified method. | .838 | .048 | | |
| I frequently shop online to cope with my emotions. | .856 | .048 | | |
| Repurchase intention (RI) | | | .888 | .671 |
| I will likely repurchase in the online store. | .879 | fixed | | |
| I will probably repurchase in the online store. | .954 | .044 | | |
| I will have the certain chance to repurchase in the online store. | .756 | .053 | | |
| Goodness-of-fit indexes: | | | | |
| Chi-square value (df) = 671.316 (237); chi-square/df = 2.12, GFI = 0.879; IFI = 0.922; TLI = 0.909; CFI = 0.922; RMSEA = 0.06 | | | | |

*Note.* All items were measured on a 7-point Likert scale from 1 = *strongly disagree* to 7 = *strongly agree.*

of the chi-square statistic. The value of the normed chi-square is 2.12, which is below the cutoff criterion of 3.00 (Hair et al. 2006), indicating that the model fits the data well. The goodness-of-fit index (GFI); the comparative fit index (CFI); the incremental fit index (IFI); the Tucker-Lewis index (TLI), which

should be greater than 0.9 (Hair et al. 2006); and the root mean square error of approximation (RMSEA), which should be less than 0.1 (Anderson and Gerbing 1988; Hair et al. 2006), are used. The six-factor measurement model reveals adequate goodness-of-fit with GFI = 0.879, IFI = 0.922, TFI = 0.909, CFI = 0.922, and RMSEA = 0.06. The remaining 23 items are employed to test the overall measurement model (table 1).

Construct validity is examined by assessing convergent validity and discriminant validity (Ping 2004). Average variance extracted (AVE) ranges from 0.521 to 0.671, exceeding the cut-off value of 0.50 for convergent validity (Fornell and Larcker 1981). To identify the discriminant validity, the square root of the AVE for each construct is compared with the correlation coefficients between two constructs (Fornell and Larcker 1981; Ping 2004). According to Fornell and Larcker (1981), discriminant validity is evident if the AVE is greater than the squared correlation coefficients between any pair of constructs. As table 2 shows, the squared correlation between any two constructs is lower than the AVE of each construct, so a six-construct structural model is accepted as a measurement model. Therefore, a theoretically meaningful and statistically acceptable model is achieved. This overall measurement model describes the nature of the relationships among the 6 latent constructs and the 23 indicators that measure them.

## Structural Equation Model

The overall measurement model, including the three exogenous latent constructs (i.e., hedonic shopping value, utilitarian shopping value, and environmental stimuli), the two endogenous latent constructs (i.e., attitude toward online shopping and emotional regulation), and the dependent construct (i.e., repurchase intention) are tested to identify the validity of the proposed model and the hypotheses. SEM is used to evaluate the relationship between the constructs.

Table 3 illustrates the direction and magnitude of the impact of the standardized path coefficients. GFI show that the structural model reasonably fits the data: Chi-square value (df) = 600.284 (219); chi-square/df = 2.74,

**TABLE 2** Construct Validity of the Measurement Model

| | M (SD) | F1 | F2 | F3 | F4 | F5 | F6 |
|---|---|---|---|---|---|---|---|
| F1: HSV | 4.08 (1.36) | .632* | | | | | |
| F2: USV | 4.89 (1.05) | .259 | .521* | | | | |
| F3: ES | 4.78 (1.03) | .387 | .484 | .613* | | | |
| F4: ATT | 4.97 (1.09) | .467 | .571 | .544 | .567* | | |
| F5: EP | 3.53 (1.54) | .547 | .174 | .378 | .386 | .579* | |
| F6: RI | 5.36 (1.22) | .300 | .422 | .464 | .586 | .305 | .671* |

*AVE. The scores range from 1 to 7. All correlations are significant at the .01 level or better.

**TABLE 3** Structural Parameter Estimates

| Hypothesized path | Estimate | Critical ratio | Result |
|---|---|---|---|
| H1: Hedonic shopping value → Attitude | .271 | 5.253** | Accepted |
| H2: Utilitarian shopping value → Attitude | .588 | 7.988** | Accepted |
| H3: Hedonic shopping value → Emotional purchase | .532 | 8.603** | Accepted |
| H4: Utilitarian shopping value → Emotional purchase | −.082 | −1.320 | Rejected |
| H5: Environmental stimuli → Attitude | .235 | 8.50** | Accepted |
| H6: Environmental stimuli → Emotional purchase | .223 | 4.388** | Accepted |
| H7: Attitude → Repurchase intention | .636 | 10.607** | Accepted |
| H8: Emotional purchase → Repurchase intention | .034 | 0.671 | Rejected |
| Goodness-of-fit indexes: | | | |
| Chi-square value (df) = 600.284 (219); chi-square/df = 2.74, GFI = 0.886; IFI = 0.931; TLI = 0.919; CFI = 0.930; RMSEA = 0.06. | | | |

GFI = 0.886; IFI = 0.931; TLI = 0.919; CFI = 0.930; and RMSEA = 0.06. These indexes indicate that the model's fit is satisfactory, thereby providing a good basis for testing the hypothesized paths. Examination of the structural model determines whether the hypothesized relationships among the latent constructs are accepted or rejected by showing significant coefficients. The estimates of the standardized coefficients reveal the following links between the variables: Hedonic shopping value → Attitude (ß = 0.271, $p < .01$); Utilitarian shopping value → Attitude (ß = 0.532, $p < .01$); Hedonic shopping value → Emotional purchase (ß = 0.588, $p < .01$); Environmental stimuli → Attitude (ß = 0.235, $p < .01$); Environmental stimuli → Emotional purchase (ß = 0.223, $p < .01$); and Attitude → Repurchase intention (ß = 0.636, $p < .01$). Hypotheses 1, 2, 3, 5, 6, and 7 are supported, but there is no significant relationship between Utilitarian shopping value and Emotional purchase or between Emotional purchase and Repurchase intention, so Hypotheses 4 and 8 are rejected.

**TABLE 4** Standardized Direct, Indirect, and Total Effects of Construct

| | HSV | USV | ES | ATT | ERP |
|---|---|---|---|---|---|
| Total effect | | | | | |
| Attitude | .271** | .532 | .235** | — | — |
| Emotional purchase | .588** | −.082** | .223** | — | — |
| Repurchase intention | .193** | .336** | .157** | .773** | .034 |
| Direct effect | | | | | |
| Attitude | .271** | .532** | .235** | — | — |
| Emotional purchase | .588** | −.082 | .223** | — | — |
| Repurchase intention | — | — | — | .636** | .034 |
| Indirect effect | | | | | |
| Attitude | — | — | — | — | — |
| Emotional purchase | — | — | — | — | — |
| Repurchase intention | .193** | .336** | .157** | — | — |

*Note*. Square Multiple Correlation (SMC) = Attitude (.739), Emotional purchase (.457), Repurchase intention (.424). **$p < .01$.

SEM calculates the total effects based on the direct and indirect effects that are not identified by the existing path analysis. Thus, the study examines the direct and indirect effects of attitude toward online shopping and emotional purchase on repurchase intention. The results are presented in table 4. Although the findings show that attitude toward online shopping has both direct and indirect effects on repurchase intention, emotional purchase has no direct or indirect effect on repurchase intention. A factor of attitude toward online shopping that affects customers' repurchase intention is the indirect effects of hedonic shopping value (ß = 0.193), utilitarian shopping value (ß = 0.336), and environmental stimuli (ß = 0.157). Therefore, the total effect is .773, revealing that attitude toward online shopping is the most significant mediator in determining repurchase intention.

## CONCLUSIONS

This study applies the theory of S-O-R to online shopping behavior and empirically tests the theoretical relationships that are likely to have effects on online shopping behavior. The study presents reliable confirmation that current knowledge of S-O-R can be extended to the online market in China. Thus, this study contributes to the Internet literature, especially as it relates to online shopping issues in China, which have seen limited research in terms of online shopping behavior.

The statistical results yield three key findings: (1) The internal influences of the stimulus, hedonic shopping value and utilitarian shopping value, significantly affect the organism process, including attitude toward online shopping and emotional purchase, with the exception of the effect of utilitarian shopping value on emotional purchase; (2) The external influence, environmental stimuli, affects both attitude toward online shopping and emotional purchase; and (3) Attitude toward online shopping affects repurchase intention and plays an important role as the mediating variable between internal motivations and repurchase intention.

Even though this study did not support two of its hypotheses (the positive effect of utilitarian shopping value on emotional purchase and the positive effect of emotional purchase on repurchase intention), it provides theoretical implications for comprehending the online shopping behavior in China using the S-O-R framework. Prior studies have investigated both hedonic and utilitarian values in relation to consumption behavior (e.g., Babin et al. 1994; Sorce et al. 2005; To et al. 2007; Wolfinbarger and Gilly 2001), but this study shows that hedonic and utilitarian value directly affect shoppers' online shopping attitudes and indirectly affect consumers' repurchase intentions. In addition, past research has shown that the shopping environment can influence customers' emotional responses (e.g., Frijdas 1994; Ganesh et al. 2010; LaRose 2001; Machleit and Eroglu 2000). The current

study reveals that the shopping environment of Taobao's website evokes shopper's emotional responses, supporting the findings of previous studies. Finally, the study shows that in China's online market, attitude toward online shopping can play a mediating role in the relationship between the internal influences of the stimulus and repurchase intention, as extant studies have shown (e.g., Ajzen 1991; Gross 2002; Kim and Park 2005; Park et al. 2013).

This study did not identify a relationship between utilitarian shopping value and emotional purchase or between emotional purchase and repurchase intention, possibly because the goal of shopping is usually to meet people's daily needs (Bosnjak et al. 2007; Chiou and Ting 2011). In addition, Vauclair and colleagues (2011) pointed out that the level of socioeconomic development in a country can influence consumption and that impulse buying rarely happens in developing countries. In this respect, it is not surprising that most Chinese shoppers tend to buy products online that meet their daily needs. Regarding the relationship between emotional purchase and repurchase intention, this study's finding is inconsistent with the work of Bui and Kemp (2013), perhaps because the object of Bui and Kemp's study was online music consumption, and music goods are usually consumed to satisfy emotional needs. Hence, this type of consumption may induce more emotional purchases. Because the present study was performed in terms of general goods and services, it identifies no relationship between emotional purchase and repurchase intention.

The study's findings provide useful information for online market retailers in China, as the study offers detailed information on methods of managing and setting up marketing strategies. For example, this study shows that utilitarian shopping value has more influence than hedonic shopping value does on shoppers' attitudes toward online shopping, which has a positive effect on repurchase intention. As a result, online retailers should ensure high product quality, accurate and objective information, high diversity in product choice, and other utilitarian, value-related activities. More specifically, considering utilitarian shopping value, online retailers should offer high quality products, convenient services, affordable prices, and independent delivery systems for consumers. With regard to environmental stimuli, retailers should provide websites that are appealing because environmental stimuli affect consumers' attitude and emotional state, which affect their purchasing behaviors. Therefore, online retailers should develop design factors (i.e., layout, color, and clutter cleanliness) and transaction-based sites that mitigate customer hesitation and promote immediate sales. Even though the hedonic shopping value has a weaker influence on attitude than the utilitarian shopping value does, it has a stronger positive influence on emotional purchase. Therefore, online retailers should consider the customers' hedonic demand and provide an enjoyable website shopping environment (e.g., website, index) and interesting products and services. Finally, the results show that customers' attitudes toward online shopping have a strong mediating effect on the relationship

between the hedonic shopping value and repurchase intention, the utilitarian shopping value and repurchase intention, and environmental stimuli and repurchase intention. This result suggests that online retailers should value the customers' subjective feelings, which few retailers in China do.

## LIMITATIONS

As expected in all research, several limitations should be addressed in future research. The primary limitation of the study is its generalizability since the sample used in this study consisted primarily of young people. Although the sample was selected based on Lin and Shen's (2011) report that 18- to 29-year-olds account for nearly 60% of all online shoppers in China, the results reported in this study may be limited to them and not generalizable to other age groups. Future studies that use samples from other populations would help to validate the conclusions in other groups and give evidence of generalizability. Further testing of the measurement developed in this study is also needed in order to determine whether the scale is applicable to other regions and special products.

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