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# Website Service Quality and Shopping Website Stickiness: The Mediating Effect of Website Involvement

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**Abstract:** Website service quality has been considered to be important to increase users' stickiness toward website in online shopping context. However, the underlying mechanism through which website service quality can influence shopping website stickiness remains unclear. In this study, the concept of website involvement was introduced to explain why people tend to favor sticking a shopping website. Also, four dimensions of website service quality (i.e. recovery, reliability, personalization, and responsiveness) were identified from existing related literature to influence consumers' website involvement. Unlike prior studies, the "Stimulus-Organism-Response" model and an integrated framework combining the transactional view and the relational view of consumer-website interaction were used to test the relationship among website service quality, website involvement (cognitive involvement and affective involvement), and website stickiness. Empirical result shows that website service quality has no significant direct impact on website stickiness. However, it has significantly positive effects on both cognitive involvement and affective involvement, which in turn significantly correlate to website stickiness, indicating that website involvement plays full mediating role in the relation between website service quality and website stickiness. The results also indicate that consumer affective involvement strongly influences their cognitive involvement toward a shopping website.

**Keywords:** website stickiness, website service quality, website involvement, affective involvement, Stimulus-Organism-Response, consumer-website interaction

## 1. INTRODUCTION

The spread and penetration of Internet technology has profoundly changed the traditional consumer habits and buying behavior. In online environment, consumers can access to more retailers and more brands. In addition, they can easily switch between different shopping website due to convenience of online shopping. At the same time, the cost of network search significantly reduced, the product or service is becoming more and more homogeneous. Therefore, the value of customer loyalty in the online shopping environment is often greater than the physical retail environment. However, the influence factors of customer loyalty in the traditional marketing theory cannot be simply applied to online environment. An in-depth analysis of exploring the formation mechanism of online customer loyalty is needed, and offer clear benefits to online retailers.

Although customer switching costs are low in online shopping context, why some consumers favor to being sticky to some shopping websites like Taobao.com, Tmall.com, and JD.com, rather, shift to competitive websites providing similar products or services? Web stickiness is a frequently used indicator to measure customer loyalty to online retailers<sup>[1]</sup>. Website stickiness can not only increase conversion rate from visitors to buyers<sup>[1]</sup>, also significantly increase profits of online retailers<sup>[2]</sup>. To obtain sustainable profit in an increasingly complex and changing environment, it is crucial for e-retailers to improve website stickiness to retain long-term customers and maintain competitive advantage<sup>[3]</sup>. Then, how to attract customers' attention enable them to frequently visit and browse a website for a long time, and cultivate their habits of shopping from this website? In order to answer this question, this research attempts to identify determinants of stickiness intention and their impacts on stickiness intention.

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Internet has continuously decreased revenue derived from implementing differentiation strategy of price or quality, thus stressing the important role of website service quality in the competition<sup>[4]</sup>. Shopping website service not only provides cues for consumers' rational judgment, also creates psychological satisfaction and pleasure for them during their shopping experience. However, little is known about how website service quality may affect website stickiness.

In general, consumers will be sticky to a shopping website when they recognize that it is highly correlated with their values and interests, and can well meet their inherent demands. Such psychological perception is known as website involvement<sup>[5]</sup>. Therefore, it will provide new insights to understand how to increase consumers' stickiness intention from the perspective of consumer-website interaction. Compared to the transactional view of consumer-website, the relational view is more concerned on the impact of consumer emotional factors on website stickiness<sup>[6]</sup>. This study argues that the transactional view emphasizes effects of cognitive factors on consumer behavioral response to shopping website, and the relational view focuses on impacts of consumers' emotional factors. Neither the transactional view nor the relational view can fully explain the formation mechanism of website stickiness. Therefore, a new analytical framework is needed to integrate two views to improve our understanding why people tend to favor being sticky to a shopping website

This study integrates the transactional view and the relational view of consumer-website interaction, together with the Stimulus-Organism-Response (SOR) model in environmental psychology<sup>[7]</sup>, to examine the impact of website service quality on consumer stickiness intention and the mediating effect of website involvement on this relation. In this study, we specially investigate following research questions: (1) whether website service quality can influence consumers' intention to stick to a shopping website? (2) Does consumers' website involvement, namely, cognitive involvement and affective involvement, mediate the relationship between website service quality and website stickiness? (3) Whether there is a relationship between cognitive involvement and affective involvement? This study is helpful to reveal the formation process of website stickiness, for e-commerce enterprises in the fierce market competition to effectively improve the website stickiness and implement customer retention strategy, and create long-term competitive advantage to provide decision-making basis.

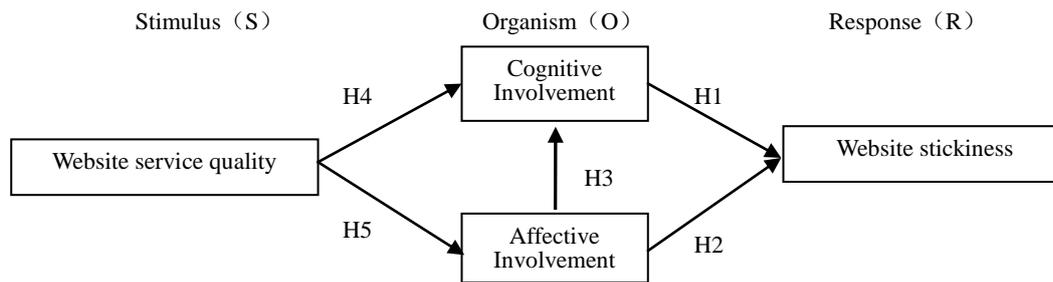
## **2. THEORY AND HYPOTHESE**

### **2.1 Stimulus-Organism-Response model**

The Stimulus-Organism-Response model in environmental psychology argues that, sensory and information stimulation created by consumers through retail environment, and combined with their emotional characteristics will affect individual emotional states, then result in approach or avoidance reaction<sup>[7]</sup>. In this model, stimulus refers to external environmental factors that can arouse, wake up or promote actions, such as store atmosphere, design factors and social factors. Organism is an individual's assessment of external environmental stimuli, such as cognition, emotion. Response said approach or avoidance reaction that produced after organism evaluates environmental stimulus<sup>[7]</sup>. The Stimulus-Organism-Response model not only has an important impact on environmental psychology, but also provides a simple and rational analysis framework for studying impact of website shopping environment stimulation on user purchase behavior<sup>[8]</sup>. Also, this model helps to understand the impact of cognitive and affective responses on relationship between external environmental stimuli and consumer behavior<sup>[5]</sup>.

According to Stimulus-Organism-Response model, this paper puts up a theoretical analysis framework shown in Figure 1. It explains how website service quality as a web store environment stimulates influence consumers website stickiness behavior. Namely website service quality through website involvement (cognitive involvement and affective involvement) indirectly effect on website stickiness, and website affective

involvement directly affect cognitive involvement.



**Fig. 1 Research model**

## 2.2 Website stickiness

Website stickiness is an ability to attract and retain users, and to extend the duration of each stay<sup>[6,9]</sup>. When consumers use this website for shopping, it will stick them, and make them repeatedly visit and stay for a long time on the website. Website stickiness reflects a psychological will and dependent behavior that consumers continue to use shopping websites to purchase products or services.

Domestic and foreign scholars have carried out some meaningful exploration on influence factors and mechanism of website stickiness from aspects of website characteristics, consumer psychological factors, and demographic variables. Most literature is concerned with the effect of website characteristics on user stickiness. Lin<sup>[9]</sup>, Lu and Lee<sup>[10]</sup> analyzed impact of website content, website situation and website infrastructure on website stickiness. Lu and Lee<sup>[10]</sup> and Polites<sup>[11]</sup> confirmed influence of website's usability, usefulness, information quality, system quality, product selection and other website characteristics on online stickiness. Another studies found that consumer psychological factors also affect website stickiness, such as positive attitude, trust<sup>[9,11]</sup>, a sense of belonging, flow experience/entertainment, satisfaction<sup>[3,11]</sup>, and commitment<sup>[12]</sup>.

According to users' different goals (task-oriented and experiential) to visit websites<sup>[13]</sup>, websites will be divided into task-oriented (such as shopping website, travel website) and experience-oriented (such as social networking website, music website). Existing research more take experience-oriented websites as research object to study website stickiness. In fact, for these two different types of websites, influence factors of website stickiness are not identical, even if the same factors have different effects<sup>[14]</sup>. From existing research, we can see that there are many factors can affect website stickiness, but at the same time from consumer cognitive and affective perspective to study the influence factors of website stickiness is less.

## 2.3 Consumer website involvement

Website involvement is a perception of website's relevance and importance based on their own internal needs, values and interests<sup>[5]</sup>. Considering the reality that consumers produce emotional reactions to environment stimuli is not very common. In most cases, environmental stimulation make consumers produce cognitive, emotional and psychological and other complex responses, instead of only emotional changes<sup>[15]</sup>. To explore the impact of environmental stimuli on consumers, we must also consider affective and cognitive reactions, such as Eroglu<sup>[16]</sup> and Jiang<sup>[5]</sup> examined the impact of consumer cognition and affective factors on online purchasing behavior.

### 2.3.1 Cognitive involvement and website stickiness

According to user- web interactive transactional view, when consumers browse website and consider the website can help them to buy cost-effective products or services, to achieve the desired confirmation after the purchase, it will lead to psychological satisfaction, and then they will think shopping on this site is wise and useful. This long lasting recognition will shorten the distance between customer and website directly, and consumers will depend on the website and expect to buy more high-quality products and services from it for a

long time. On the other hand, consumer awareness of website will enhance consumer confidence and sense of control, and then consumer will have a strong desire to visit the website repeatedly. Studies have shown that website cognitive involvement significantly influence the behavior of consumers approach on shopping website<sup>[5]</sup>. Moreover, the more resources website can use and the more detailed the content, the more sensitive online users to information control. In this case, whether or not consumers choose to spend on website, the website will be collected in order to visit at any time. Zhang<sup>[17]</sup> shows that company's micro-blog stickiness is significantly affected by consumer perceived function value.

H1: Consumer's website cognitive involvement has positive impact on website stickiness.

### **2.3.2 Affective involvement and website stickiness**

Internet provides a virtual shopping environment for consumers, they can get experience that they cannot or difficult to get from real lives. Positive emotions (such as joy, satisfaction) may make consumers stay longer in a shop and increase the amount of consumption. Therefore, user's positive attitude to website is an important factor to improve website stickiness<sup>[18]</sup>. When consumer shows pleasure and motivation to experience in browsing website, they will naturally generate desires to visit the website repeatedly. Lee<sup>[19]</sup> found that when consumers are satisfied with their past online purchase experience, they will also feel pleasure through website shopping, which will inspire them return to the website for shopping. Zhang<sup>[17]</sup> shows that company's micro-blog stickiness is significantly affected by consumer's perceived hedonic value. Based on the above analysis, second hypotheses are put forward:

H2: Consumer's website affective involvement has positive impact on website stickiness.

### **2.3.3 Cognitive involvement and affective involvement**

Eroglu<sup>[16]</sup> and Jiang<sup>[5]</sup> argue that cognitive and affective factors are independent of each other when analyzing the influence of these factors on Internet consumption behavior. Actually, in spite of the fact that affective responses often deviate from cognitive assessment, making decisions and behaviors are abnormal, but emotions can also affect cognition, and even both of them may depend on each other. Emotions not only provide information about value of good and bad for consumers to shop online, but also play a key role in consumer's attention and executive control and other cognitive activities. Kim and Lennon<sup>[20]</sup> found that pleasure affect purchase intentions through cognitive evaluation.

H3: Consumer's affective involvement has positive impact on cognitive involvement.

## **2.4 Website service quality**

Website services have significant impacts on many important aspects of e-commerce, such as the attitude of consumers on shopping websites or online shopping, perceived value, willingness to pay, user satisfaction, website loyalty or sticky intentions<sup>[21, 22]</sup>. Website service quality in e-commerce environment can be defined as overall evaluation and judgment of quality and excellence of website service provider. There is no consistent view about the composition of website service quality. Parasuraman<sup>[23]</sup> proposed E-S-QUAL scale, including efficiency of service, availability, order fulfillment and privacy protection. The five dimensions proposed by Lee and Lin<sup>[24]</sup> are website design, reliability, responsiveness, trust and personalization. Bernardo<sup>[25]</sup> added hedonic service quality dimension on the basis of E-S-QUAL scale. This study selects reliability, responsiveness, personalization and recovery as the core components of website service quality, and analyzes their influence on website involvement.

### **2.4.1 Website service quality and cognitive involvement**

Website's quick response ability is directly related to consumers' location of website service quality. Service responsiveness refers to the rapid and active provision of services to customers, such as customer consultation, information search and navigation speed<sup>[24]</sup>. Lee and Lin<sup>[24]</sup> found that website service reliability can significantly affect consumers' cognitive level of shopping satisfaction. Therefore, when consumers realize that website can provide convenient and timely service, and they will think it can save costs in this shopping website,

thereby enhancing cognitive involvement of the website.

Service reliability is the ability of a shopping website to fulfill orders, deliver goods and ensure security of personal information<sup>[24]</sup>. In order to avoid uncertainty of online shopping, consumers tend to choose websites that are more efficient to meet their needs to ensure consistency and reliable service. Lee and Lin<sup>[24]</sup> found that website service reliability can significantly affect consumers' satisfaction on website to meet shopping needs, that is, enhancing the level of cognitive involvement.

With more and more personalized consumer demand, website services will also be personalized. Shopping website service personalization is an ability of consumers to provide differentiated services to meet their specific needs<sup>[24]</sup>. It embodies in e-commerce enterprises can make full use of various advantages of resources, and providing targeted customized services according to customer demand preferences, so they will feel in the shopping website is worth.

Online shopping has not changed traditional market rules, service failures are more likely to occur in some areas. Website service recovery is the remedial measures when shopping websites face service defects or mistakes. Timely and appropriate response to customers' dissatisfaction and complaints can improve customer retention rate. When website service failures, the more timely enterprise responds, the more customers will regard the behavior as a positive signal of website, and the greater chance of service recovery.

H4: Website service quality has positive impact on consumer's website cognitive involvement

#### **2.4.2 Website service quality and affective involvement**

In online shopping environment, consumers not only pay attention to product quality, but also pay attention to online shopping to bring them happiness and enjoyment. Website visitors tend to search for fun, and website quick response ability can increase consumer's perception of shopping pleasure. Yang and Fang<sup>[26]</sup> studies that website accurately complete orders and maintain service commitment is the main element of service quality. It will enhance consumers' positive sensory emotions and pleasant experience in the shopping process. Therefore, service reliability will affect consumer's emotional response to the website.

Personalized website services enable users to maximize the site in the shortest possible time to meet consumer demand, to help them find the goods and services they want. Therefore, personalized website services can enhance consumer's pleasure and arousal. When customers are immersed in personalized service process, consumers will feel pleasure, excitement, the more likely it is to stay longer on the shopping website and visit the website again in the future when buying needs.

Service recovery also affects consumer affective involvement. Some studies have indicated that when a service failure occurs, consumers don't care about service provider's explanation of the service failure. They care about how company can remedy it in a way that makes them satisfied. Only problems of concern satisfactorily resolved, consumers may have positive feelings and trust on the website.

H5: Website service quality has positive impact on consumer's website affective involvement.

### **3. METHODOLOGY**

#### **3.1 Sample collection**

We used questionnaire survey to collect data. Firstly, questionnaire was published in a survey website. Secondly, using researchers' social relationship, questionnaires were sent to them by means of QQ, e-mail or WeChat with the permission and cooperation of potential respondents. At the same time, ask them to transmit the link to their relatives, friends, classmates and colleagues in the same way. This method can ensure as much as possible to obtain valid samples. The entire data collection lasted for about 30 days and 234 questionnaires were collected. In order to obtain relatively high quality data, excluded from the same IP address, duration of not more than 2 minutes, missing items and answers consistency is too high questionnaire, finally get valid questionnaires is 177. 68.9% of the frequent shopping website is T-mall. The usage frequency of other shopping websites is low. This indicates high consumer stickiness of T-mall. The descriptive statistics results are shown in Table 1.

**Table 1 Sample descriptive statistics**

Variable	Item	Frequency	Percentage	Variable	Item	Frequency	Percentage
Gender	Male	71	40.1	Age	≤18	2	1.1
	Female	106	59.9		19-25	131	74
Education	Junior school or below	4	2.3		26-35	36	20.3
	High school	6	3.4		≥36	8	4.6
	2-year college	44	24.9	< 1	16	9	
	4-year college	84	47.9	1-2	34	19.2	
Internet use (Hours per day)	Graduate or above	39	22	Online shopping time (year)	2-3	56	31.6
	Below 1hour	13	7.3		3-4	27	15.3
	<2	31	17.5		>4	44	24.9
	2-3	39	22		≤30	66	37.3
The most frequent shopping sites	3-4	40	22.6	Browsing time (minutes once time)	31-60	83	46.9
	≥5	54	30.5		>60	28	15.8
	T-mall.com	122	68.9		≤1	26	14.7
	Suning.com	2	1.1	2-3	75	42.4	
	Dangdang.com	4	2.3	Weekly browsing frequency (times)	4-5	32	18.1
	JD.com	20	11.3		6-7	14	7.9
Other	29	16.4	≥8		30	16.9	
Monthly income	≤1000	52	29.4	Shopping times in the last half month (times)	≤1	61	34.5
	1001-2000	25	14.1		2	48	27.1
	2001-3000	32	18.1		3	37	20.9
	3001-5000	43	24.3		4	10	5.6
	>5000	25	14.1		≥5	21	11.9

### 3.2 Variable measure

In order to ensure reliability and validity of measurement tool, all variables of the study were drawn from existing scales, and we have a situational treatment with these scales according to research purpose. Four dimensions (responsiveness, reliability, personalization, recovery) of website service quality are measured or adjusted by scales of Parasuraman<sup>[23]</sup>, Lee and Lin<sup>[24]</sup>, and Yang and Fang<sup>[26]</sup>. Measurement of two dimensions of website involvement (cognitive involvement and affective involvement) is mainly using Jiang's<sup>[5]</sup> scale. Finally, measurement of website stickiness is mainly use or modify the scale of Lin, Lu and Lee<sup>[10]</sup>. All measurement items (Table 2) were measured with Likert-5 scale, 1 represents "totally disagree", 5 represents "totally agree".

## 4. RESULTS

### 4.1 Test of reliability and validity

This study used SPSS 17.0 to analyze reliability. In Table 2, the test results show that normalized Cronbach's alpha coefficients of all measurements were between 0.761~0.902, suggesting that scale reliability is high. Also, AMOS 17.0 was used to conduct confirmatory factor analysis to test convergent and discriminant validity. Confirmatory factor analysis of all the measurement models showed that fit index of each measurement model was great, indicating that empirical data fit well with model. In the Table 2, convergent validity results show that the standardized loading of all measurement items are greater than 0.50. The average variance extraction (AVE=0.507~0.639) of all latent variables were greater than 0.5. The composite reliability (CR) is 0.762~0.898,

more than 0.7. These three index values indicate that the scale of this research has a high convergent validity.

Discriminant validity reflects the different degree of measurement of different structural or latent variables. In Table 3, the square root of AVE value of variable is larger than the correlation coefficient between latent variable and other latent variables, indicating that the scale has good discriminant validity.

**Table 2 Results of confirmatory factor analysis**

Variable	Item	Standard load	Cronbach's $\alpha$	AVE	CR
Recovery	RC1	0.736	0.902	0.639	0.898
	RC2	0.846			
	RC3	0.879			
	RC4	0.771			
	RC5	0.755			
Reliability	RB1	0.815	0.851	0.572	0.838
	RB2	0.929			
	RB3	0.636			
	RB4	0.597			
Personalization	PS1	0.688	0.761	0.517	0.762
	PS2	0.774			
	PS3	0.691			
Responsiveness	RS1	0.659	0.832	0.636	0.838
	RS2	0.859			
	RS3	0.857			
Affective involvement	AI1	0.603	0.882	0.615	0.886
	AI2	0.887			
	AI3	0.862			
	AI4	0.878			
	AI5	0.640			
Cognitive involvement	CI1	0.641	0.866	0.572	0.867
	CI2	0.872			
	CI3	0.905			
	CI4	0.65			
	CI5	0.667			
Website stickiness	WS1	0.615	0.844	0.507	0.833
	WS2	0.518			
	WS3	0.774			
	WS4	0.822			
	WS5	0.784			

**Table 3 Discriminant validity evaluation results**

Variable	RS	PS	RB	RC	CI	AI	WS
RS	0.797						
PS	0.654	0.719					
RB	0.541	0.552	0.756				
RC	0.667	0.681	0.563	0.799			
CI	0.411	0.419	0.347	0.427	0.756		
AI	0.457	0.466	0.385	0.475	0.377	0.784	
WS	0.272	0.278	0.23	0.283	0.415	0.38	0.712

**Table 4 Comparison of fit index of website service quality**

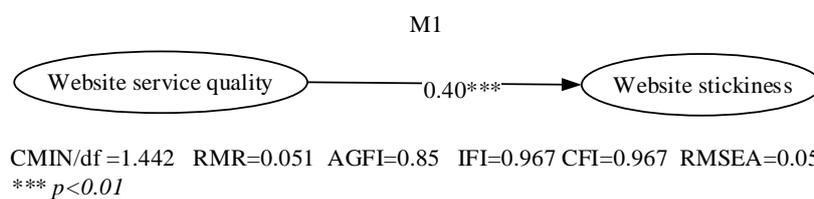
Model	CMIN	CMIN/DF	RMR	GFI	IFI	CFI	RMSEA
First-order factor	110.43	1.492	0.040	0.925	0.977	0.977	0.053
Second-order factor	114.07	1.501	0.042	0.923	0.976	0.976	0.053
Model comparison	$\Delta\chi^2=3.64$ , T=0.968; "Second-order factor to First-order factor I" standardized weights: 0.79, 0.81, 0.83, 0.85.						

Considering that website service quality is composed of four dimensions, the model fit indexes of first-order and second-order factor model were compared, and the results were shown in Table 4. The Chi Square change is small ( $\Delta\chi^2=3.64$ ). Also, the Chi Square ratio (T) is close to 1. The standardized weights from higher-order factor to first-order factors are higher (0.79 ~ 0.85). Therefore, for simplicity, subsequent structure model used

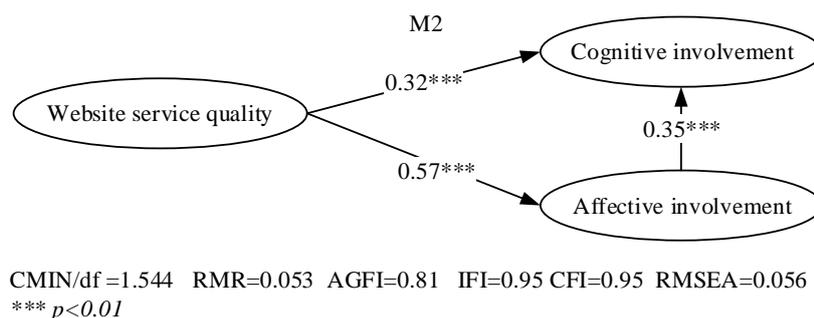
the second-factor model to carry out path coefficient test.

#### 4.2 Structure model

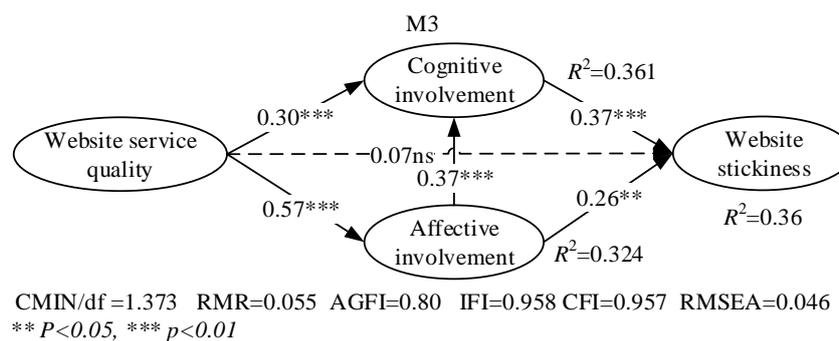
This study tested three models with SEM to examine the mediating effects of cognitive involvement and affective involvement. For M1, the relationship between independent variables and dependent variables are significantly ( $\beta = 0.40$ ,  $p < 0.01$ ), results shown in Figure 2. M2, the relationship between independent and cognitive involvement are significantly ( $\beta = 0.32$ ,  $p < 0.01$ ), the relationship between independent and affective involvement are also significantly ( $\beta = 0.57$ ,  $p < 0.01$ ). Affective involvement and cognitive involvement are significantly related ( $\beta = 0.35$ ,  $p < 0.01$ ), as shown in Figure 3. For M3, the relationship between antecedents and website stickiness is not significant, but mediators (cognitive involvement ( $\beta = 0.32$ ,  $p < 0.01$ ) and affective involvement ( $\beta = 0.26$ ,  $p < 0.01$ )) significantly affect website stickiness, as shown in figure 4. Therefore, the results show that website involvement plays a full mediating role in the relationship between website service quality and website stickiness.



**Fig. 2 The direct influence of website service quality on website stickiness**



**Fig. 3 The influence of website service quality on the website involvement**



**Fig. 4 The mediating effect of website involvement**

Fit index of the structural model shown by M3 accords with the requirements of relevant literature, and variance explanation ( $R^2=36\%$ ) is larger than M1, so we conducted hypothesis test based on M3 parameter estimation results. As shown in Figure 4, website service quality has a significant positive impact on affective involvement ( $\beta = 0.57$ ,  $p < 0.01$ ), and 32.4% of variance in affective involvement can be explained through website service quality, verify the effect of website service quality on affective involvement, so that H5 is supported by research findings. There was a significant positive correlation between website service quality and

cognitive involvement ( $\beta = 0.30$ ,  $P < 0.01$ ), H4 also supported by empirical research.

The empirical results of this study also showed that cognitive involvement ( $\beta = 0.37$ ,  $p < 0.01$ ) and affective involvement ( $\beta = 0.26$ ,  $p < 0.05$ ) have significant positive effect on website stickiness, and 36% of variance in website stickiness can be explained by cognitive and affective involvement. It shows that this model has a better explanatory power, and H1, H2 are verified. According to hypothesis H3, the positive consumer affective involvement on shopping website is helpful to their level of website awareness. Structural model estimation results show that affective involvement has a significant positive effect on cognitive involvement ( $\beta = 0.37$ ,  $p < 0.01$ ), and H3 was established.

## 5. DISCUSSIONS AND CONCLUSIONS

### 5.1 Theoretical contribution

This study attempts to integrate the transactional view and the relational view of consumer-website interaction, and develop an integrated framework based on the stimulus-organism-response model. Then, this framework was used to investigate the impact of website service quality on website stickiness and the mediating role of cognitive and affective involvement. Thus, it contributes to existing research in the following three ways. Firstly, this study introduces website involvement into website stickiness, analyzes and verifies the complete mediating effect of two dimensions (cognitive and affective involvement) on website service quality and website stickiness. It provides a more comprehensive analysis framework to predict consumer stickiness behavior. Although influence factors and formation process of website stickiness were studied in the previous studies, only a few studies construct theoretical model with relational view as the analytical framework<sup>[6]</sup>. This study emphasizes integrating both cognitive involvement (transactional view) and affective involvement (relational thinking) into a united research model, thus making a better understanding of why some people tend to favor sticking some websites. Secondly, this study confirms the relative effects of cognitive involvement and affective involvement on website stickiness. It is proved that cognition and emotion of consumer are interrelated rather than independent. We find that the effect of cognitive involvement on website stickiness is larger and more significant than affective involvement. This finding not only answers "why some consumers will be long term sticky to some shopping websites, and will not switch to competitive websites providing similar products or services?", also shows that consumer's stickiness behavior is more rational than emotional. Unlike Jiang<sup>[5]</sup> considering cognitive and affective involvement to be independent, this study shows that consumers affective involvement has positive effect on cognitive involvement, thus extending Jiang's findings<sup>[5]</sup>. Thirdly, this study also found that website service quality cannot directly affect website stickiness, and that its impact on website stickiness is mediated by website involvement. To our best knowledge, there are many studies investigating relationship between website service quality and customer satisfaction<sup>[26]</sup>, purchase behavior<sup>[24]</sup> and online loyalty<sup>[25]</sup>, but few scholars have paid attention to the relationship between website service quality and website stickiness. This paper explored the influence mechanism of website service quality on website stickiness, thus making up research gap in this field.

### 5.2 Management implications

With the increasingly fierce competition in online shopping market, E-commerce enterprises create and enhance shopping website stickiness to avoid consumers converted to competitive website easily, becoming more important and urgent than real environment. Enterprises in the development and implementation of online customer loyalty program, we must pay special attention to the key role of stimulating consumer's positive affective involvement in website stickiness formation. The conclusion of this study shows that consumers' affective involvement not only directly affect website stickiness, but also indirectly affect website stickiness through cognitive involvement. This means that E-commerce companies must take consumers' positive

emotional experience as the primary goal of customer retention strategy. In addition, although e-retailers have invested a lot in retaining existing consumers, the problem of low conversion has not been addressed. This may be because few studies focused on other aspects that may affect website stickiness and customer loyalty. The findings remind managers and technical personnel that they should pay more attentions to website service quality rather than system and information quality. This is crucial for enhancing consumer affective involvement toward shopping website. Our results show that improving website service quality can be achieved not only by providing timely, accurate, reliable and personalized online services, also by taking timely remedial measures when service failure occurs.

### **5.3 Limitations and future research**

This study has the following limitations. First, in data collection, the survey was conducted online, which may lead to error sources of research results. In order to reduce the potential impact of this possibility on research results, this study excluded 57 questionnaires, but the retention of 177 valid questionnaires were slightly less than the sample size. Also, all samples are from China. Future research can consider cooperation with foreign scholars and collect samples from other countries, which may examine impact of cultural factors on our results, thus improving our theoretical framework. Secondly, this research focuses on impact of website service quality on website stickiness and the mediating effects of cognitive and affective involvement. Considering that direct effect of cognitive involvement on website stickiness is greater than that of affective involvement, future research can further analyze other factors that influence cognitive involvement in order to better predict website stickiness. Finally, this study did not investigate whether the relationship between website service quality and website involvement is affected by consumer characteristics such as cognition needs and purchase involvement. Moreover, whether impact of website involvement on website stickiness is affected by consumer regulation focus? Actually, the impact of consumer website involvement on stickiness behavior is largely caused by the self-regulation of motivation.

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