

# An Empirical Study of E-Commerce Users' Positive Behavioural Intention to Personalized Recommendation System

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## ABSTRACT

This paper builds a model of influencing factors of users' positive behavior intention to e-commerce personalized recommendation system, we conduct empirical research by collecting questionnaires and draw relevant conclusions: system quality, information quality and service quality have significant positive effects on user satisfaction and continuance intention; information quality and service quality have significant positive effects on users' recommendation intention; user satisfaction has a significant positive impact on the users' continuance intention and recommendation intention.

**Keywords:** *e-commerce, personalized recommendation system, continuance intention, recommendation intention*

## 1. INTRODUCTION

The rapid development of e-commerce, as well as the continuous emergence of e-commerce platforms and online stores, has brought users convenience in shopping, but at the same time, users have also faced with overloaded information, which makes selection difficult. Therefore, e-commerce platforms have successively introduced personalized recommendation systems. As a kind of information filtering technology, personalized recommendation systems can use the attribute information of the products in the system database and similar consumption based on the input of current consumers' browsing, purchasing, and evaluation information to make recommendations for current consumers [1].

Based on the theory of user behavior intentions, this paper introduces the four variables of system quality, information quality, service quality, and satisfaction in the model of information system success, and constructs a user's positive behavior intention (Continuance intention; recommendation intention) in a personalized recommendation system factor model, collected data through questionnaires for empirical analysis. At the end of this paper, we provide new ideas and suggestions for improving the personalized recommendation system for e-commerce.

## 2 Theoretical Basis

### 2.1. Theory of behavioral intention

Behavioral intentions (BI) refer to the individual's conscious choice to perform or not perform certain specified future behaviors [2]. Zeitham et al. (1996) [3] divided user behavior intentions into positive behavior intentions and negative behavior intentions. Among them, positive behavior intentions include reuse, praise and recommendation of products or services to others, and paying price premiums and maintaining loyalty, negative behavior intentions. This includes different types of complaints and turning to competitors. Since users do not have a premium payment after using the personalized recommendation system, this article divides the positive behavior intention into two dimensions of continuous intention and recommendation intention.

### 2.2. The D&M model of information systems success

In 1992, Delone and Mclean [4] proposed the initial D&M model based on the previous research results. The model shows that the quality of the information system affects the user's system usage and satisfaction, the system usage and user satisfaction affect each other, and ultimately affect the behavior of individuals and their organizations. With the emergence of Internet applications and the subsequent explosive growth, Delone and McLean (2003) [5] updated and improved the information system success model, added the quality of service variable, and combined personal and organizational impact Is net income.

### 3. THEORETICAL MODELS AND RESEARCH ASSUMPTIONS

#### 3.1. Theory model

Based on the theory of user behavior intention, this paper introduces the four variables of system quality, information quality, service quality, and satisfaction in an information system success model, and builds the model shown in Figure 1 for verification.

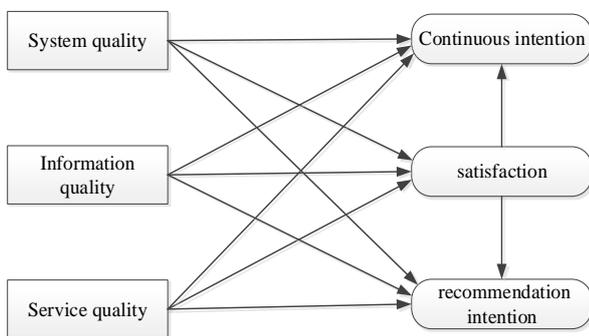


Figure 1 Research model of this paper

#### 3.2. Research hypotheses

Combining relevant literature, this paper proposes the following research hypotheses:

- H1: The system quality has a significant positive impact on users' continuous intention.
- H2: The information quality has a significant positive impact on users' continuous intention.
- H3: The service quality has a significant positive impact on users' continuous intention.
- H4: The system quality has a significant positive impact on user satisfaction.
- H5: The information quality has a significant positive impact on user satisfaction.
- H6: The service quality has a significant positive impact on user satisfaction.
- H7: The system quality has a significant positive impact on users' recommendation intention.
- H8: The information quality has a significant positive impact on users' recommendation intention.
- H9: The service quality has a significant positive impact on users' recommendation intention.
- H10: User satisfaction has a significant positive impact on users' continuous intention.
- H11: User satisfaction has a significant positive effect on users' recommendation intention.

### 4. STUDY DESIGN

#### 4.1. Questionnaire design

This questionnaire is composed of four parts: questionnaire title and preface, logical options, basic user information and topical questions. All variables are from the existing literature [6] [7] [8], including system quality, information quality, service quality, satisfaction, willingness to continue using and word-of-mouth recommendation, a total of 27 items.

#### 4.2 Sample sources and data collection

The Likert five-point scale was used to compile the questionnaire, from 1 to 5 representing "strongly disagree", "disagree", "general", "agree" and "strongly agree". The personalized recommendation system involved in the questionnaire is based on the mobile Taobao personalized recommendation system. The survey targets are school students and young office workers who have certain online shopping experience and have used the mobile Taobao personalized recommendation system at least once. A total of 550 questionnaires were issued, and invalid questionnaires with obvious errors were eliminated. A total of 467 valid questionnaires were obtained, and the questionnaire recovery rate was 84.9%.

### 5. DATA ANALYSIS

#### 5.1 Reliability and validity analysis

In this paper, alpha reliability coefficient method and combined reliability (CR) are used to measure the reliability of the scale. The average variance extraction amount AVE is used to measure the convergence validity. The results are shown in Table 3: The alpha reliability of the six potential variables is above 0.7, and the CR is greater than 0.7, indicating that the reliability of this scale is good; 0.5, indicating that the scale has good convergence validity and meets the research requirements.

Table 1. Reliability analysis results

Variable name	CR	Cronbach'α
Information quality	0.886	0.885
System quality	0.903	0.903
Satisfaction	0.817	0.811

service quality	0.825	0.813
Recommendation intention	0.847	0.845
Continuous intention	0.779	0.778

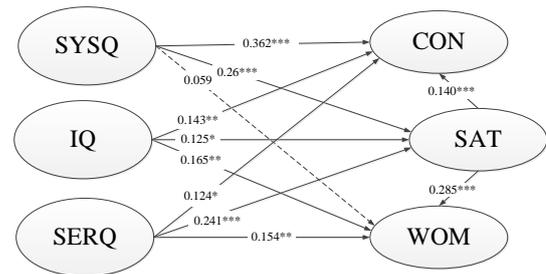
**Table 2.** Convergence validity results

Variable	item	Normalized factor load	AVE
Continuous intention	CON1	0.790	0.541
	CON2	0.711	
	CON3	0.702	
Information quality	IQ1	0.704	0.565
	IQ2	0.736	
	IQ3	0.735	
	IQ4	0.744	
	IQ5	0.814	
	IQ6	0.771	
Satisfaction	SAT1	0.809	0.599
	SAT2	0.674	
	SAT3	0.83	
service quality	SERQ1	0.861	0.617
	SERQ2	0.853	
	SERQ3	0.617	
	SYSQ1	0.694	
	SYSQ2	0.62	
	SYSQ3	0.642	
	SYSQ4	0.846	
	SYSQ5	0.647	
	SYSQ6	0.848	
SYSQ7	0.661		
System quality	SYSQ8	0.719	0.51
	SYSQ9	0.712	
	WOM1	0.788	
	WOM2	0.859	
	WOM3	0.768	
	Recommendation intention		

### 5.2 Structural Model Inspection

This article selects the fitting indicators to check the model's fitting degree. According to the evaluation criteria of the structural equation model fitting indicators, It can be seen that the model fitting indicators meet the requirements, and the degree of fitting between the measurement model and the data is at a better level. The external quality of the model is good.

Based on the AMOS 25.0 structural equation model, by verifying each hypothetical path in the structural equation model, the coefficient path diagram shown in Figure 2 is obtained. It can be seen that all hypotheses except for H7 have passed the significance test.



**Figure 2** Structural analysis path analysis results

### 6. RESEARCH CONCLUSIONS AND RECOMMENDATIONS

This article applies relevant theories to construct a model of influencing factors for users' positive behavior intentions after using the personalized recommendation system of e-commerce. The data is collected through a questionnaire and tested using a structural equation model. The following conclusions are obtained:

First, the system quality, information quality, and service quality of the personalized recommendation system have significant positive effects on user satisfaction and continuous intention. The e-commerce platform can improve the system quality of explain the reasons for recommendation, optimize the recommendation display interface and strengthen the relationship with users of interaction.

Second, the information quality and service quality of the recommendation system has a significant positive effect on the user's recommendation intention, which the system quality has no significant effect on. It can be seen that users are more concerned about the recommendation information output by the personalized recommendation system and the recommendation services provided. Only if the personalized recommendation system meets its personalized needs, users will be more likely to form a positive evaluation of the personalized recommendation system and thus generate recommendation intention.

Third, user satisfaction has a significant positive impact on the users' continuance intention and recommendation intention. Satisfaction is the decisive factor affecting whether continuous and recommendation personalized recommendation systems. Therefore, the main goal of

personalized recommendation systems and e-commerce platforms should be to develop strategy.

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