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## Research on the Influence of Intelligent Recommendation Function on User Behavior in Highly Digitized Network Platforms

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**Abstract**—The growth of new technological innovations has given rise to a highly digitized E-commerce world, which is redefining the consumer purchase experience. The research studied the AI Recommendation feature of the biggest Chinese E-commerce platform taobao.com, analyzed the relation of recommendation effect with 3 factors, impulse consumption, platform word of mouth according to customers, and consumers' self-discipline. In this paper, the data collected by the questionnaire are analyzed and processed by empirical method. The results show that consumers' favor for intelligent recommendation function has a significant positive impact on their impulsive consumption, while impulsive consumption has a significant negative impact on the platform reputation, and impulsive consumption has a significant negative impact on the reuse function. These findings provide a new perspective for the application of new technology in E-commerce industry and the impact on consumer behavior. At the same time, it suggests that future research can be carried out from the perspective of the application and effect of new technology used in different countries and regions under cultural differences, and differences between impacts of online and offline marketing methods on consumer behavior.

### Introduction

In recent years, the E-commerce has ushered in a vigorous development, with the great progress of Internet technology and the popularization of various intelligent hardware devices. According to the China E-commerce Report 2018 released by the Ministry of Commerce, the scale of E-commerce transactions in China continued to expand and maintain a high-speed growth trend. In the whole year, it totaled 31.63 trillion yuan, an increase of 8.5% year-on-year. And online retail sales reached 9.01 trillion yuan, up 23.9% year on year. The 44th China Internet Development Statistics Report on online shopping industry released by CNNIC in August 2019, announced that the number of online shopping users in China has reached 639 million by June 2019, an increase of 28.71 million over the end of 2018, accounting for 74.8% of the total Internet users; the number of mobile online shopping users reached 622 million, an increase of 29.89 million from the end of 2018, accounting for 73.4% of mobile Internet users. More and more people have formed the habit of online shopping, and many E-commerce platforms have even integrated into the daily life of many netizens. However, there are differences between online shopping and traditional offline shopping in terms of consumer recommendation, information communication, time cost, logistics and other aspects. Therefore, studying the differences in consumer behavior brought by these aspects is a very important research topic for scholars in marketing and psychology.

### RESEARCH OVERVIEW

In the last few years, there have been some relevant researches on impulse consumption at home and abroad.

Consumers' impulsive purchasing behavior is defined as a sudden, often sustained, and strong desire to purchase on the spot (Farah and Ramadan, 2017)[13]. And this impulsive decision is not conscious one, but comes when you are exposed to a particular stimulus. Some consumer behaviors occur automatically out of habit, but they are not impulsive in themselves (Heimlich and Ardoin, 2008)[15]. In order to classify a purchase as impulsive, it needs to happen immediately after contact with the stimulus (Dawson and Kim, 2009)[10], regardless of the consequences associated with the purchase (Park et al., 2012)[24].

There are four main factors in impulsive consumption: (1) the decision to buy a product needs to be unplanned; (2) the consumer needs to be exposed to specific stimulus; (3) the decision needs to be made "on the spot"; (4) the decision should include an emotional or cognitive response to the stimulus (Jeffrey and Hodge, 2007)[17]. These four elements will be applicable to our discussion on the impact of Taobao's intelligent recommendation case on consumers' impulsive purchasing.

In fact, we can observe that the process of promoting consumers' purchase through intelligent recommendation is not planned for them, because it is triggered by a kind of stimulation measure carried out by the platform based on a series of data analysis, which is to remind consumers of their demand for certain commodities. This impulse also leads them to make an "on the spot" decision, click on the recommended product and buy it. And this "decision" will produce an emotional or cognitive response (satisfying a current need), which means that the purchase of goods after such an interaction will bring immediate satisfaction to consumers (Park et al., 2009) [23]. Thus, in such a non-traditional shopping environment, the trigger factor of impulse purchase is the intelligent recommendation function of these E-commerce platforms (Dholakia, 2000)[11].

With the development of E-commerce, there have been some changes in the research of consumer word-of-mouth communication in recent years.

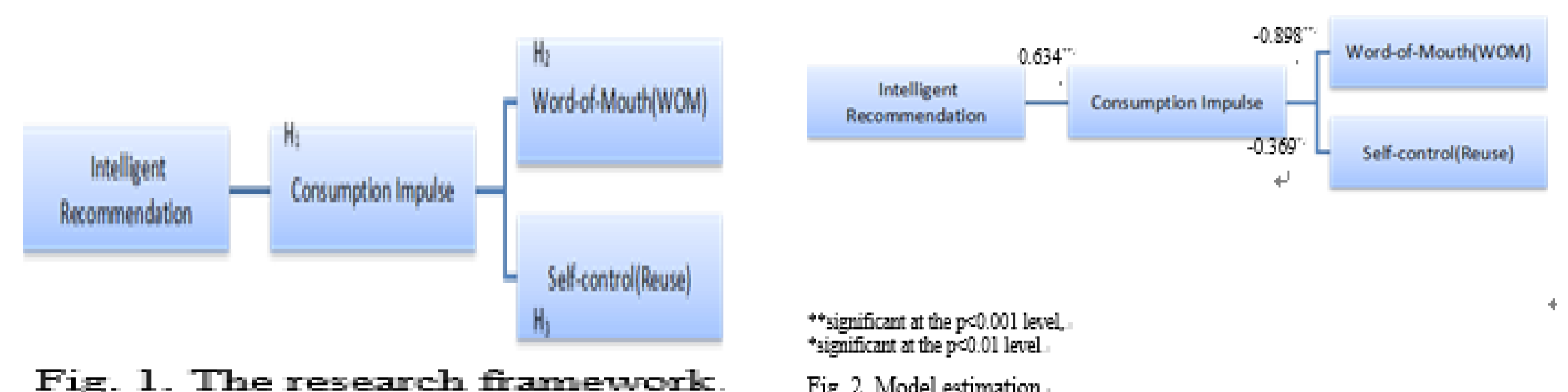


Fig. 1. The research framework.

\*\*significant at the p<0.001 level.  
\*significant at the p<0.01 level.

Fig. 2. Model estimation.

TABLE I. BASIC INFORMATION.

Factors	Questions	Options
User filtering(Q1)	Have you ever used Taobao's "intelligent recommendation" function?	Yes, No.
Gender(Q2)	What's your gender?	Male, Female.
Age(Q3)	What's your Age?	18-25, 26-35, 36-45, 46-60, Over 60.
Education(Q4)	What's your education background?	Junior high school or below, senior high school, junior college, undergraduate, master or above.
Online shopping frequency(Q5)	How many times do you shop on Taobao every month?	0 times per month, 1-2 times a month, 3-5 times a month, 5-10 times a month, more than 10 times a month.
Attitude towards "intelligent recommendation" function(Q6)	What's Your attitude towards "intelligent recommendation" function.	Very dislike, don't like, indifferent, like, very like.

TABLE II. DESCRIPTIVE STATISTICS.

Descriptive statistics			
	Sample size	Mean(E)	Standard deviation
Q6	562	3.42	1.006
Q7	562	1.86	1.255
Q8	562	1.91	0.955
Q9	562	3.44	1.266
Q10	562	3.69	1.561
Q11	562	3.81	1.670
Q12	562	3.58	1.419
Q13	562	3.98	1.481
Q14	562	3.89	1.531
Q15	562	3.61	1.610

TABLE III. FACTOR ANALYSIS.

	Cronbach Alpha	Exploratory Factor Analysis				AVE
		1	2	3	4	
liking "intelligent recommendation"						
Q6	0.92	0.890				0.74
impulsive consumption						
Q7	0.85		0.865			0.62
Q8			0.801			
word-of-mouth						
Q9	0.83			0.757		0.59
Q10				0.793		
Q11				0.805		
reuse						
Q12	0.82				0.842	0.67
Q13					0.839	
Q14					0.865	
Q15					0.776	

### Conclusion

First of all, we do get some helpful conclusions through data collection, processing and empirical methods. As we mention above, we can understand that the intelligent recommendation brought by technological innovation may indeed lead to more impulse consumption by consumers, increasing the total sales volume to the platform. But impulsive consumption will also bring some influences on consumers' behavior, for example, bad word-of-mouth on the platform or their regrets and reflections after it, then to control themselves to reusing the function.

In the future, we can expand our research from the following directions: 1. Add the influence of cultural differences between countries and regions, whether similar recommendation have different effects on consumers' impulsive consumption in the Amazon of the United State or in the Taobao of China. 2. Consider the difference between online marketing "intelligent recommendation" and offline traditional marketing, and find what changes have between them. 3. Compare the different marketing methods brought by different new technologies, such as the impact of live streaming and "intelligent recommendation" on consumer behavior.

In short, technology should be good. Good technology is what gives people good experience.