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Yuming Zhu

Peng Guo

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# Theoretical Framework of Empirical Study on Consumer Behavior in Web-Based Commerce

Yuming Zhu, Peng Guo

Management School, Northwestern Polytechnical University, Xi'an 710072, China  
{zym1886, guopeng}@nwpu.edu.cn

## ABSTRACT

Web-based commerce has brought great challenges and opportunities to companies. To seize the opportunities, the company must work out well-conceived web-based marketing strategy, which, to great extent, relies on the good understanding of consumer behavior in web-based commerce. Based on general theoretical framework of study on consumer behavior and current achievement in this area both oversea and home, the theoretical framework of empirical study on consumer behavior in web-based commerce is put forth. In this theoretical framework, two dependent variables is determined as unplanned purchase and customers' intention to return, which are affected by two attitudinal variables, i.e. perceived control and shopping enjoyment. The two attitudinal variables are also affected by individual factors and web store factors, which also contain certain sub-factors. At the end of this paper, some suggestions on further study in this field are brought forward as well.

**Keywords:** theoretical framework, empirical study, consumer behavior, web-based commerce

## 1. INTRODUCTION

Along with high speed development of net technology and globalization, the portion of on-line sales in retail sector will become bigger and bigger. According to the information from U.S. Commerce Ministry at Nov. 21, 2003, the total on-line sales of U.S. was increased by 27% up to \$13.3 billion during the third quarter. In Europe, the on-line sales of 2003 are up to 70 billion Euros. In China, according to the survey of iResearch, the total on-line sales of 2003 were RMB0.79 billion. For 2004, the sales will exceed RMB1.6 billion<sup>[1]</sup>. Therefore, the web-base consumption has been bringing revolutionary changes and impacts on traditional ways of consumption. In business-to-consumer electronic commerce there have been two transformations: (1) the transformation of the consumer into a computer user, and (2) the transformation of the physical store into a phenomenon that is information technology intensive—in other words, a Web site. The new double role of consumer/computer user resulting from the first transformation is inherently complex and still not well understood. The second transformation concerns store technology. In the physical commercial world, the information technology used in a store is most often invisible to the consumer, whereas in e-commerce it has been moved to the foreground. To the consumer, the Web site, an information system, is a full representation of the store. Therefore, it is necessary to look at the interaction between consumer and store through the filter of user-technology interaction. Given these transformations, researchers need to combine the research streams of information systems, psychology, and marketing to study and understand on-line consumer behavior. The empirical study, which is widely used by western researchers, is just the required combination of studying. However, due to different environment, some results achieved through empirical study by western

researchers cannot be directly and simply applied in China.

## 2. ACHIEVEMENT ON CONSUMER BEHAVIOR ON WEB-BASED COMMERCE

At present, most of successful B2C companies are Western companies, such as AMAZON, DELL etc. There are two causes for this: (1) well-established credit system of paying, and (2) well-combined research and practice. By empirical study, the western researcher found that perceived control and shopping enjoyment can increase the intention of new Web customers to return, but seemingly does not influence repeat customers to return. They also found that a Web store that utilizes value-added search mechanisms and presents a positively challenging experience can increase customers' shopping enjoyment. Further, the more often customers return to a Web store, the more their shopping enjoyment is determined by their product involvement. Customers with low need specificity (i.e., who do not know what they are looking for) are more likely to use value-added search mechanisms. Finally, neither perceived control nor shopping enjoyment has any significant impact on unplanned purchases<sup>[3]</sup>.

In China, the researchers studied consumer behavior on web-base commerce from qualitative aspect and quantitative aspect respectively.

From qualitative aspect, the researchers found the following changes which have taken place in consumers' psychology: (1) personalized consumption prevailed; (2) initiative consumption increased; (3) stability of consumption psychology decreased, rapid switching speed; (4) chasing both convenience and enjoyment of consumption; (5) price still be one of most important factors. However, owing to characteristics of web-based

consumption, there must be certain psychological needs cannot be satisfied. For example, due to partial replacement of personal intercommunication, the social psychological needs can not be complied with to the full. In addition, the on-line shop cannot give consumer the feeling of being noticed and respected. The consumers cannot show their social status, achievement and dominance. Furthermore, less flexibility of pricing lead to dissatisfaction of consumers who like bargaining on the scene<sup>[4]</sup>.

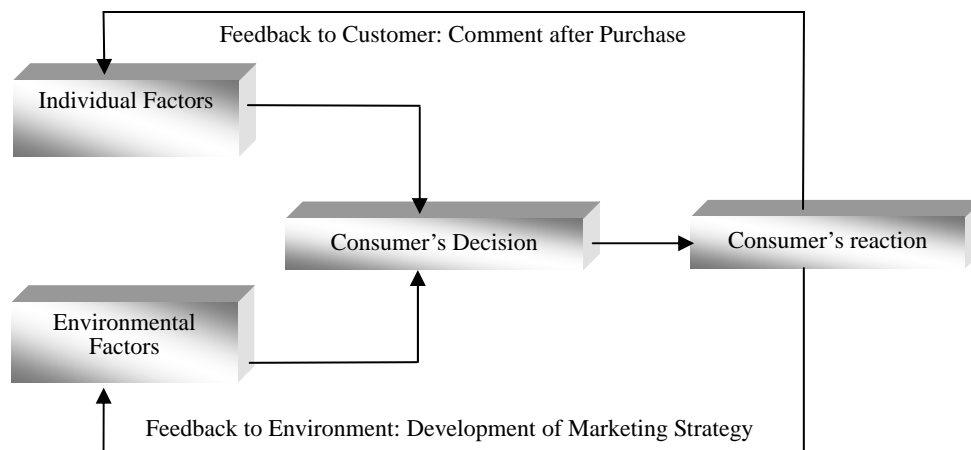
From quantitative aspect, the researchers also make certain achievement such as *web-based consumption: theoretical model and behavior analysis*, which is a book to sum up the findings of researchers of Harbin Institute of Technology. By using this mathematic model, the researchers found that the process of on-line consumption is a combined process of production and consumption, and a complicated process of ensuing of utility increase and decrease. Chinese researchers have also set up another mathematic model called TPB-based (Theory of Planned Behavior) and E-commerce oriented theoretical model for consumer behavior study. This model has certain constructive effects on E-commerce. But, it still has following pitfalls: (1) some variables, such as social hierarchy and culture difference, are hardly quantified; (2) the combination of qualitative simulation and quantitative one is hardly fulfilled<sup>[5]</sup>.

In china, the empirical study is seldom used in this area. The on-line investigations mainly focus on the areas such as types of users, purpose of surfing internet and comments on certain problems etc.

### 3. THEORETICAL FRAMEWORK OF EMPIRICAL STUDY ON CONSUMER BEHAVIOR IN WEB-BASED COMMERCE

There are two factors which have major impact on consumers' behavior. One is individual factors such as needs, awareness of brand identity and attitude toward brand selection. In addition, demographic factors, life style and personality have impacts on brand selection either. The other is environmental factors such as culture, sub-culture and direct contact group etc. Marketing organization also form an integral part of environmental factors. Based on these two factors, the general theoretical framework of study on consumer behavior can be set up, which is depicted in Figure 1.

Environmental and individual characteristics are known to influence emotional responses that, in turn, affect behavioral responses. In the area of environmental psychology, three key emotional variables that may determine behavior are pleasure, dominance, and arousal. These variables are also important determinants of consumer behavior off-and on-line. In a consumer context, pleasure can be defined as shopping enjoyment, and dominance as the equivalent of the perceived control felt by customers. Arousal deals with more physical sensations, such as being jittery, sluggish, or relaxed. In this study, it was not possible to directly measure physical responses to the on-line shopping experience, and instead the research concentrated on the first two variables.



**Figure 1 General Theoretical Framework of Study on Consumer Behavior**

The theoretical framework of empirical study on consumer behavior in web-based commerce, which is depicted in Figure 2, includes shopping enjoyment and perceived control as attitudinal variables that directly affect on-line consumer behavior. In accordance with

both environmental psychology and traditional consumer behavior, it also examines the direct or moderating impact of individual and Web store (environmental) factors on consumer attitudes and behavior.

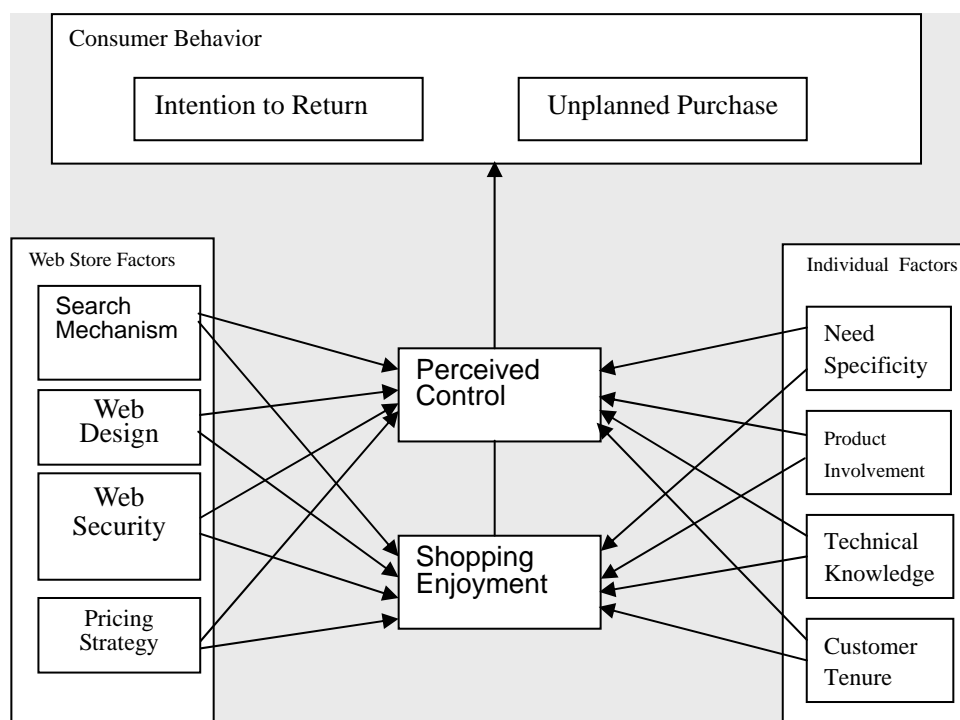


Figure 1. Theoretical Framework for Web-based Consumer Attitudes and Behavior

### 3.1 Dependent Variables

In this theoretical framework, customers' behavior is classified into two types (dependent variables). One is unplanned purchase. In some situations on the Web, conditions that enable a consumer to save time could lead to more unplanned purchases. The ability to search more products, services, and information may lead to longer purchasing decisions with a negative impact on unplanned purchases. Money availability is as important on-line as off-line. The other is customers' intention to return (repeat purchase). Repeat purchase for Web-based companies can decrease because consumers do not have to spend substantial amounts of money or time for transportation from store to store. They can buy from any company available on-line while sitting in front of their computer. Also, discretionary loyalty is no longer necessary. The center for one-stop shopping is now the customer's computer, where switching from one store to another is easy, not requiring significant physical effort, though it may require some learning of the new Web site. For consumers who dislike shopping, consumer loyalty on the Web may not decrease significantly, since even the small switching costs on the Web can prove too much for them. All of these factors suggest that the design of satisfactory experiences will be crucial to store loyalty.

### 3.2 Attitudinal Variables

Generally, the above-mentioned two kinds of consumers' behavior are affected by two attitudinal variables, i.e. perceived control and shopping enjoyment. Web stores have responded to the desire for customer control and convenience with systems that enable

consumers to easily find what they need, learn more about it, and quickly make a purchase decision. Internal search engines, hierarchical classifications of company products, and intelligent agents are provided by many Web stores to support users' need for control in accessing information. Sites offer quick, automated purchasing through "one-click" buying and the use of shopping carts. All these site features enable Web customers to enjoy higher levels of control and convenience. Shopping on-line is a different experience from shopping in a physical retail store. One major point of difference deals with "store atmosphere". This term describes the physical aspects of a store, such as colors, music type, music volume and tempo, and layout of products. Store atmospherics have a direct effect on customer mood and behavior. The atmosphere of Web-based businesses is at best limited to the confines of a computer monitor that usually displays only two-dimensional pictures and text. Even with the addition of three-dimensional images and musical accompaniment, Web stores today cannot fully simulate the ambiance of a physical store. In the competition between click and mortar, the system design of the e-tailing experience must compensate for the loss of traditional in-store atmosphere.

### 3.3 Individual and Web Store Factors

Obviously, the attitudinal variables are affected by individual and web store factors. Individual factors include the following sub-factors: (1) **Need Specificity**: in other words, how well individual consumers know what they want when they visit a store; (2) **Product Involvement**: the concept comprises (a) one's motivational state (i.e., arousal, interest, drive) toward

an object where (b) that motivational state is activated by the relevance or importance of the object<sup>[6]</sup>; (3) Technical Knowledge: how well individual consumers know what kind of skills they need to surf internet smoothly; (4) Customer Tenure: how many times a customer has been to a Web store in the past. Web store factors include the following sub-factors: (1) Search Mechanism: i.e. site search features, such as internal search engines, hierarchical classifications, and intelligent agents etc.; (2) Web Design: attractiveness of web site; (3) Web Security: the safety of flow of information, cash and goods etc.; (4) Pricing Strategies, such as discount pricing strategy, reputation pricing strategy and personalized pricing strategy etc.

#### 4. CONCLUSIONS AND DIRECTION OF FURTHER RESEARCH

Based on general theoretical framework of study on consumer behavior and current achievement in this area both oversea and home, the theoretical framework of empirical study on consumer behavior in web-based commerce is put forth. In this theoretical framework, two dependent variables is determined as unplanned purchase and customers' intention to return, which are affected by two attitudinal variables, i.e. perceived control and shopping enjoyment. The two attitudinal variables are also affected by individual factors and web store factors, which also contain certain sub-factors.

Through this theoretical framework, the factors that influence customers' on-line behavior can be determined. However, the influence rate of each and every factor still remains unclear. To solve this problem, the empirical study based on this theoretical framework should be adopted. One of the best methods of empirical study is by on-line questionnaire. Through questionnaire and with the help of statistical software, the significance of each factor can be measured by regression analysis.

Modern technology equips consumers by giving them accessibility to unprecedented information and communications. As customers' switching costs goes down, the challenges of attracting, retaining, and realizing profits from customer interactions increase. Well-conceived studies that integrate marketing perspectives on consumer behavior and information systems research on users' behaviors will be crucial to

understanding consumers' on-line behaviors. Indeed, each of the major variable categories considered in this theoretical framework, i.e. individual consumer factors, Web site design factors, consumer/user attitudes and decision processes, and behavior, presents opportunities for marketing and information systems researchers. Further research on these topics from a multidisciplinary perspective will be critical to the effective design of systems that strategically influence customer behavior.

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