

# Consumer's Online Shopping Influence Factors and Decision-Making Model

Xiangbin Yan<sup>1</sup> and Shiliang Dai<sup>2</sup>

<sup>1</sup> School of Management, Harbin Institute of Technology  
MIS Department, The University of Arizona  
xbyan@hit.edu.cn

<sup>2</sup> Shenzhen graduate school, Harbin Institute of Technology  
dslldaisy@gmail.com

**Abstract.** Previous research on online consumer behavior has mostly been confined to the perceived risk which is used to explain those barriers for purchasing online. However, perceived benefit is another important factor which influences consumers' decision when shopping online. As a result, an integrated consumer online shopping decision-making model is developed which contains three elements—Consumer, Product, and Web Site. This model proposed relative factors which influence the consumers' intention during the online shopping progress, and divided them into two different dimensions—mentally level and material level. We tested those factors with surveys, from both online volunteers and offline paper surveys with more than 200 samples. With the help of SEM, the experimental results show that the proposed model and method can be used to analyze consumer's online shopping decision-making process effectively.

**Keywords:** Online consumer behavior, influence factors, decision-making.

## 1 Introduction

Consumer behavior on the Web has been the subject of considerable research in the last a few years, but it is difficult to understand it by the fact that the main entities involved, such as consumers, businesses and products, are very complex. Some researchers have discussed several benefits that online shopping provide to consumers, which are not quite available in traditional shopping channels. There is no doubt that internet has provide a different shopping experience in various ways to consumers, as there are much more benefits for consumers to purchase online. For example, they can buy product without the limit of space and time, they can access more information than ever before with the help of search engine and the other exploration tools on the internet, and thus consumers will feel more joyful and active during the online purchase process.

According to a China Internet Network Information Center (CNNIC) survey, online shopping is ranked the 12th purpose for people using the internet in China(CNNIC, 2006). Some researchers examined consumer's behavior during the online shopping stage and proposed that perceived risk is a critical determinant factor,

and which is a useful context to explain barriers to online shopping (Bhatnagar and Ghose, 2004). What's more, there have many recent publications discussing the issues of transaction intention and trust in electronic commerce (Gefen and Karahanna, 2003; Vijayasarathy, 2004; Kim, 2005)

When purchase online, consumers' psychology thought have many differences from traditional purchase activities. Traditional consumer behavior theories cannot explain their online purchase effectively. The objective of this paper is to gain a better understanding of Chinese consumer's online shopping influencing factors and decision making process, which will have three benefits at least: firstly, enterprises can achieve better marketing objectives with better designed marketing strategies and more effective created websites; secondly, it will be beneficial for the government to accelerate the development of e-commerce; thirdly, it will improve customers' acceptance about online shopping.

The structure of the remainder of paper is organized as follows. In the next section, we propose some definitions based on the discussion of relevant literature. Online shopping influence factors, such as perceived benefit and perceived risk are illustrated. In Section 3, we present an online consumer's decision-making model based on the former analysis. Section 4 describes the data and the method. Section 5 presents the results of analysis, and we also conclude managerial implications and directions for future research in this section.

## 2 Literature and Hypothesis

The definition of Consumer behaviors provided by American marketing association (AMA) is a dynamic interaction process between perception, emotion, cognitive, behaviors, and environmental factors, which is the base to fulfill the functions of the exchange. We can use consumer behaviors' theory to explain their decision-making process.

According to the classic economics theory, consumers will follow the principle of utility maximization in the decision-making process, thus we can treat all the external and internal factors that influence decision-making into two parts of gain and loss. According to Technology Acceptance Model (TAM) proposed by Davis (Davis, 1986), gain and loss perception of customer can be understood as perceived benefit and perceived risk. Zeithaml thought that consumers would make a selection with the maximum perceived benefit when making purchase decision (Zeithaml, 1988); However, Mitchell thinks that consumers tend to reduce the perceived risk rather than maximizing their perceived benefit when making purchase decisions (Mitchell, 1999), and he has provided a recommended model can be presented as:

Perceived risk =  $\sum_n$  Importance of negative consequences  $\times$  Probability of negative consequences

(Where  $n$  = facets of perceived risk, e.g. time, psychosocial, financial etc.)

Similarly we can provide a recommend model of perceived benefit, which can be presented as:

Perceived benefit =  $\sum_n$  Importance of positive consequences  $\times$  Probability of positive consequences

(Where  $n$  = facets of perceived benefit, e.g. time, convenience, financial etc.)

In addition, we propose a supposed formula shown below in order to describe customer's online shopping decision-making process specifically, including both of perceived benefit and perceived risk, which is more consistent with the people's psychology thought about online shopping.

Online shopping possibility = Perceived benefits / Perceived risk.

## 2.1 Perceived Benefit

Perceived benefit has recently gained much attention from marketers and researchers because of its important role in predicting purchase behavior and achieving sustainable competitive advantage. Zeithaml conceptualized perceived benefit as "the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given." In his definition, the concept is measured at the product-level. It incorporates the quality of the (physical) product and its additional services delivered, in comparison with its relative price.

In general, we hypothesis that more values consumers perceived, more likely they will make a purchase decision. Existing literature and survey have shown that most consumers have similar opinions on perceived benefit when shopping online.

Afterward, we divide the online consumer's perceived benefit into the following four dimensions according to relevant literatures:

- (1) Convenience of purchasing (CP) (Lin, Wu and Hsu, 2007);
- (2) Low-cost (cost reduction) (LC) (Cairncross, 1997);
- (3) Individuation of product or services (IN);
- (4) Enrichment of information (EI) (Yadav, 2005).

## 2.2 Perceived Risk

The development of the theory of perceived risk in the context of consumer behavior began in 1960 (Bauer, 1960). According to Bauer, consumers' behavior involved risk because their purchasing actions "will produce consequences which he cannot anticipate with anything approximating certainty, and some of which at least are likely to be unpleasant".

According to the theory of consumers' perceived risk, consumers perceive risk because they face uncertainty and potentially undesirable consequences as a result of purchases. Therefore, the more risk they perceive, the less likely they will purchase. Perceived risk is powerful at explaining consumer's behavior because "consumers are more often motivated to avoid mistakes than to maximize utility in purchasing" (Zeithaml, 1988).

Many scholars have divided perceived risk into several part and to measure the risk based on different survey samples (Jarvenpaa and Tractinsky, 1999; Anthony and Fernandez, 2001), which demonstrate that the perceived risk exist in the online shopping process. Through survey on the internet and interview with the online consumers, we found that different from perceived benefit, consumer's perceived risk have obvious difference between consumers. Usually, it is easy to notice external, short-term, one time risk, for example the money loss, lower quality, time loss, and so on. However, for some other risk, such as intrinsic, long-term, and permanent effective risk are difficult to be noticed, for example the social position drops, health injury, etc.

Based on related literature (Nena, 2003) and interview to online consumers, we divided perceived risk into seven dimensions, which can be divided further by their characteristics respectively, which was shown in detail as following:

- (1) Economical risk (ECR) represents the possibility of monetary loss arising from online shopping. It can be further divided into three parts:
  - R11: Payment loss risk;
  - R12: Credit card embezzled risk;
  - R13: Online bank payment risk.
- (2) Product functional risk (PFR) refers to the possibility that the purchased products do not work properly and could not satisfy customer's anticipation. It can be divided into three parts:
  - R21: Possibility of Buying counterfeit goods, inferior product, damaged goods;
  - R22: The product performance not fit the need;
  - R23: Products damaged for third party reasons.
- (3) Time-loss risk (TLR) refers to the possibility of time wasting during the online shopping process. It can be easily divided into three parts:
  - R31: Too long information searching time;
  - R32: Too long transaction waiting time;
  - R33: Too long related service time, such as product maintenances and exchange.
- (4) Service risk (SER) refers the possibility of the on-line shopping maybe unable to have the right of exchanging goods or consultation service as traditional shopping way. It can be divided into two parts:
  - R41: Unable to obtain the service of exchange a purchase and some other similar service;
  - R42: Lacks of the neutralize organization to provide the arbitration service.
- (5) Information risk (INR) refers to the possibility of loss may brought by information unsymmetrical or falsehood information. It can be divided into three parts:
  - R51: Unable to obtain the specialist's consultation and explanation;
  - R52: Unable to judge the reliability of description about commodity and service provided by the online shop;
  - R53: Unable to confirm the validity of other information.
- (6) Social contact risk (SCR) refers to the possibility of online shopping may bring influence to the consumer's normal human social relations. It can be divided into:
  - R61: Individual information exposition risk;
  - R62: Individual prestige and the social position impair.
- (7) Health risk (HER) refers to the possibility of physically or psychologically health impair brought by on-line shopping. It can be divided into:
  - R71: The physically health risk;
  - R72: The psychologically health risk.

### 2.3 Online Shopping Relevant Elements

There are many factors may influence consumer's perception about benefit and risk. In order to identify items that have influence on online consumer's decision making, we interviewed about 30 people to get a raw conclusion before we started to construct models and design questionnaire. Persons in the pre-test we interviewed have certain knowledge of computer and internet, and also have experience of browsing commodity or have shopping experiences online. We asked their opinions about online purchase to observe their behaviors and psychology thought. After analysis of data collected by face to face survey, we found that there are three main elements, consumer, product and website, have influences on consumers' perception during online shopping process. Furthermore, each of these three elements can be divided into several influence factors as following.

First of the elements is consumer, which is the main participant in online shopping, and obviously played an essential role regarding the shopping decision-making. When shopping online, factors may influence consumers' perception about value and risk is shown as following:

- (1) Demographic data (C1);
- (2) Degree of involved in internet (C2);
- (3) Personal characteristic (C3);
- (4) Online shopping experience (C4) (Forsythe and Shi, 2003);
- (5) Degree of product cognition (C5);
- (6) Degree of involved in on-line shopping (C6).

The second one is product, which is the object of online shopping. The product characteristic determined whether it is suitable for online purchase. In other words, commodity itself will influence consumers' perception and will influence their online shopping decision (Peterson, Balasubramanian and Bronnenberg, 1997). There are several factors related with product have influence on consumer's perceptions:

- (1) Standardization (P1)( Dawar and Parker,1994; Peter and Ryan,1976; Cheng and He, 2003);
- (2) Price level (P2)(Covaleski,1997);
- (3) Seller's reputation and credit(P3);
- (4) Information reliability of Commodity (P4);
- (5) Region characteristic of Commodity (P5).

The last element is website, which is the business intermediary platform. The role of website is an intermediary agent in the process of online shopping. Some research results have shown that the website reputation, design style and other contents will have great influence on customer's purchase possibility(McKnight, Choudhury and Kacmar, 2003; Kaynama, Black and Keesling, 2003; Cox, Dale, 2002). Here, we consider website characteristics including following parts:

- (1) Rationality of website designs (W1);
- (2) Website's business security (W2) (Bhatnagar, Misra and Rao, 2000);
- (3) Convenience of transaction on the website (W3).

### 2.4 Online Shopping Conceptual Model

Based on above analysis, we can conclude all the factors together, and estimate their effect to the next variables. A conceptual model of online shopping decision making which describes all the hypotheses is presented in figure 1.

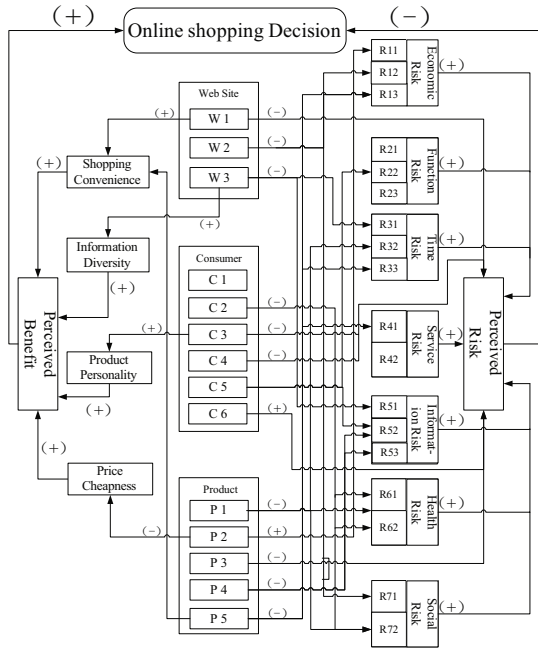


Fig. 1. Concept Model of Online Shopping Decision-making

In addition, we can suppose a more concrete formula of consumer’s online shopping decision possibility:

$$DP = \frac{WeightB * \sum_{i=1}^n (WB_i * B_i)}{WeightR * \sum_{j=1}^m (WR_j * R_j)}$$

With the condition  $\sum WB_i=1$  and  $\sum WR_j=1$ .

Where *DP* is the possibility of consumer’s online purchase decision; *WeightB* is adjustment weight of perceived benefit, and *WeightR* is adjustment weight of perceived risk; *WB<sub>i</sub>* is adjustment weight of *i*th perceived benefit, where  $n=4$ ; *WR<sub>j</sub>* is adjustment weight of *j*th perceived risk, where  $m=7$ .

### 3 Research Design and Methodology

#### 3.1 Data Employed

The model was estimated on data collected from both online volunteer respondents and offline survey questionnaires with more than 200 samples from web and more than 100 from offline. After delete the answers with missing data, the number of final effective samples is more than 200 in total.

The survey questionnaire had four different sections. The first section is an overview of the respondent's online shopping experience, with the questions about their time and frequency of online shopping, their evaluation on the past experience of online shopping, their intention to purchase online again, their personal view on perceived benefit and risk of online shopping, and the possibility of purchase again based on the value and risk. Some studies have shown that both internet experience and a fast internet connection have a positive effect on online shopping (Farag, Krizek and Dijst, 2006).

In the second section, the respondents were asked about their worries during online shopping process, which including all the risks we have talked about above, and the measures comprise Likert-type statements, measured on five-point scales ranging from (1) "strongly disagree" to (5) "strongly agree".

In the third section, the factors including those characteristics of products and website which influence the consumers' decision during the process of purchasing online are asked, such as the degree of standardization, the price of the products, the brand or the reputation of the products, the credit of the seller, and so on. The measures also comprise Likert-type statements, measured on five-point scales ranging from (1) "strongly disagree" to (5) "strongly agree".

The last section contains several demographic questions about the inquired people, such as gender, age, education, career, income per month. Empirical studies indicated that men, the more highly educated, the higher income groups are more likely to buy online than the others which are women, the less well educated, and the lower income groups (Forsythe, et al, 2003).

The demographic profile of respondents indicates that males made up 56.9%, which was slightly higher than woman. The respondents were predominantly young, with 93.1% of them in the age group of 20–39 years and the majority is in their twenties. Most of the respondents are highly educated with 75.5% of them attaining at least a diploma or other higher qualifications.

### 4 Structural Equation Modeling

In this study, structural equation modeling (SEM) with AMOS is used to test and analyze proposed hypotheses. Based on the fact that the concept model which we proposed above is very complex for further analysis, we decompose it into several simple models, and new hypotheses are proposed.

#### 4.1 Model 1 and Data Analysis

The first model contains three main factors: perceived benefit, perceived risk, and online shopping possibility. There are two hypotheses in this model shown in Figure 1.

Hypothesis 1: Perceived benefit will be positively correlated with the possibility of consumer’s online shopping decision.

Hypothesis 2: Perceived risk will be negatively correlated with the possibility of consumer’s online shopping decision.

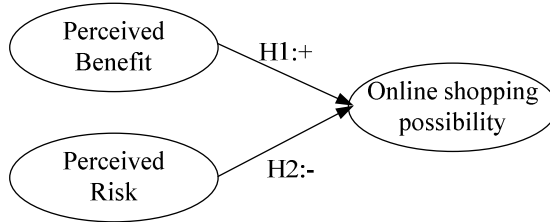


Fig. 2. Model 1

We test all the data including online survey and offline questionnaires with a total number of 275 samples, and the variables’ means, standard deviations and correlations are shown in Table 1.

Table 1. Means, Standard Deviations and Correlations\*

Variables	Mean	s.d.	1	2
Perceived benefit	5.07	2.76		
Perceived risk	4.85	2.63	.31**	
Online shopping possibility	5.41	3.10	.65**	.27**

\*. Listwise N=275; \*\*. Correlation is significant at the 0.01 level (2-tailed).

The result reported in Table 2 demonstrates a statistically significant pattern between every two variables among perceived benefit, perceived risk and online shopping possibility. A regressive analysis is used to find out the effect on online shopping possibility bought by perceived benefit and perceived risk. At first, we use the original data collected from survey and then we get the reciprocal of perceived risk and multiply 10, and then we use the new perceived risk to do the same regressive analysis. Table 2 gives regression analysis result.

The result reported in Table 2 demonstrates that the model with new PR is better fit than the original one. Therefore, it proves that perceived risk is not simply direct related to consumer’s online shopping intention, but related it as a reciprocal form.

Table 2. Result of Regression Analysis of Model 1

Independent Variable		Online shopping possibility		
		$\beta$	Sig.	R <sup>2</sup>
Step 1	PB	.075***	.000	.426
	PR	.626	.120	
Step 2	PB	.538***	.000	.321
	PRnew <sup>a</sup>	-.106*	.049	

\*. Correlation is significant at the 0.5 level (2-tailed). \*\*\*. Correlation is significant at the 0.001 level (2-tailed).

a. PRnew=10/PR.



### 4.2 Model 2 and Data Analysis

Compare to perceived benefit, perceived risk is much more complicated and with too much dimensions. As a result, the conceptual model is not fit very well. Thus, we need to reduce the dimensions in the conceptual model, especially in the perceived risk.

According to the data collected in the survey, we construct Model 2 with ten perceived risk factors and consumer's online shopping intention as shown in figure 3.

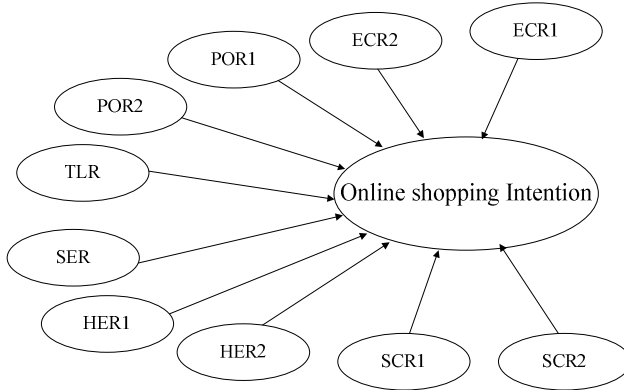


Fig. 3. Model 2

In order to reduce dimensions of perceived risk, a factor analysis is taken to find the similarity of different items. The correlations between every two perceived risk in those ten factors are tested before the factor analysis procedure, and relative results are presented in Table 3.

Table 3. Means, Standard Deviations, and Correlations<sup>a</sup>

Variables	Mean	s.d.	ECR1	ECR2	PFR1	PFR2	TLR	SER	HER1	HER2	SCR1
ECR1	2.77	1.19									
ECR2	2.94	1.28	.49**								
PFR1	3.39	1.19	.49**	.57**							
PFR2	3.29	1.243	.38**	.55**	.63**						
TLR	3.05	1.10	.43**	.50**	.43**	.49**					
SER	3.49	1.21	.41**	.51**	.56**	.70**	.46**				
HER1	2.77	1.18	.28**	.42**	.40**	.26**	.44**	.30**			
HER2	2.61	1.08	.38**	.45**	.40**	.33**	.47**	.36**	.60**		
SCR1	3.15	1.21	.37**	.44**	.46**	.55**	.37**	.59**	.47**	.41**	
SCR2	2.46	1.19	0.12	.16*	.06	-0.03	.30**	-0.02	.50**	.47**	.29**

\*\* . Correlation is significant at the 0.01 level (2-tailed). \* . Correlation is significant at the 0.05 level (2-tailed).

a. Listwise N=190.

Then, with the help of factor analysis, a new segment of perceived risk can be made. The result is shown in Table 4.

**Table 4.** Rotated Component Matrix<sup>a</sup>

	Component	
	1	2
PFR2	.864	.004
SER	.841	.044
PFR1	.788	.159
ECR2	.715	.292
SCR1	.624	.376
ECR1	.613	.217
TLR	.567	.445
SCR2	-.119	.872
HER1	.305	.776
HER2	.370	.729

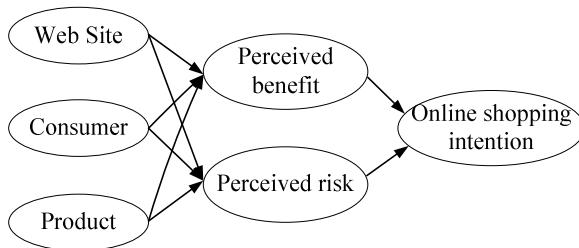
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

The result reported in Table 3 suggests the first 7 items can combine together into a new factor, and the other 3 ones can be another new factor. Eventually, we find an acceptable method to distinguish items by classify them into material level and mentally level. Those items in material level are exterior and superficial, which can be recognized more easily during the Online shopping process. Moreover, the material level items are usually scaled by some units of measure, such as money, time, etc. The other new factor which we define as mentally level is more concern about the emotional and psychology part of a person, which is difficult to be recognized and measured.

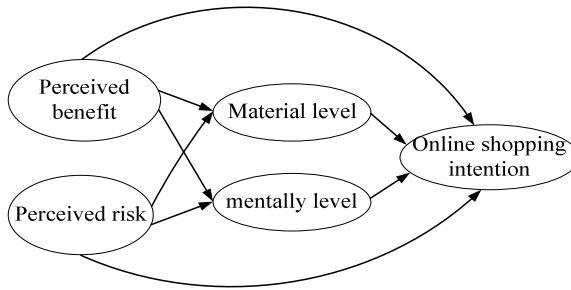
**4.3 Model 3 and Data Analysis**

According to the result of factor analysis, we can decompose all the dimensions and reform them into two segments, material level and mentally level. Therefore, we separate the conceptual model into two detached simplified models, as shown in figure 4

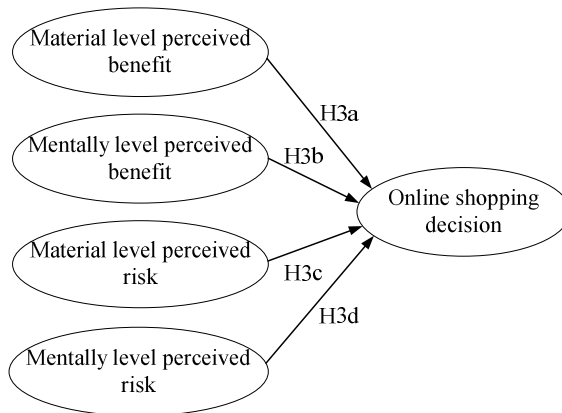


**Fig. 4.** Simplified Model 1

and figure 5. Then, we develop a new model of consumer's Online shopping decision making with these two detached models, which is shown in figure 6.



**Fig. 5.** Simplified Model 2



**Fig. 6.** Model of consumer's Online Shopping Decision Making

Based on the new model of consumer's Online shopping decision making, we generate new hypotheses related with it as following:

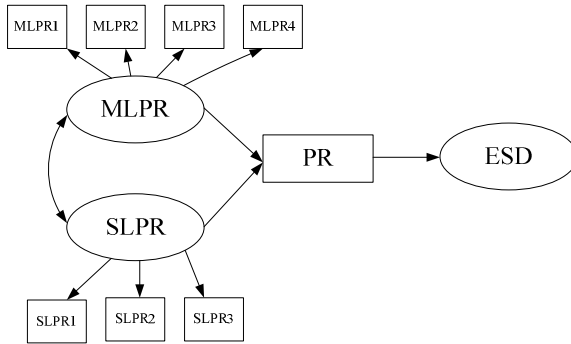
Hypothesis 3a: Perceived benefit in material level has a positive effect on Online shopping decision.

Hypothesis 3b: Perceived benefit in mentally level has a positive effect on Online shopping decision.

Hypothesis 3c: Perceived risk in material level has a negative effect on Online shopping decision.

Hypothesis 3d: Perceived risk in mentally level has a negative effect on Online shopping decision.

We choose perceived risk and Online shopping decision as an example to examine the validity of this method as shown in figure 7.



**Fig. 7.** Perceived Risk and Online Shopping Decision

Shown in Table 2,  $\chi^2$  index ( $\chi^2=97.805$ ;  $df=32$ ;  $p<0.000$ ) indicates that our model fit the data. RMSEA, which is based on the concept of non-centrality, is reported at 0.083, and a little higher than the recommended cut-off level of 0.08. The other fit measures indicate that the proposed research model is reasonably acceptable to assess the research results as shown in Table 5.

**Table 5.** Fit Measure for the Model

CMIN	DF	CFI	NFI	IFI	RMSEA
97.805	32	.944	.921	.945	.083

## 5 Conclusion and Implication

This paper proposed a conceptual model of consumer’s Online shopping decision making process, and tested its validity with data collected by both web survey and offline interview. Some conclusions about online shopping stage were achieved.

Firstly, besides perceived risk, perceived benefit also have significant influence on consumer’s online shopping intentions. What’s more, the assumption proposed was proved by the model test, which is, perceived risk is not simply direct related to consumer’s online shopping intention, but related it as a reciprocal form.

Secondly, according to the result of factor analysis, we decompose all the dimensions into two segments, material level and mentally level in order to reduce the dimensions in the conceptual model, and reconstruct the model.

Thirdly, we split the perceived benefit and risk related to web site, product and consumer into material level and mentally level. New model was estimated with SEM by using AMOS. The result indicates that the proposed research model is acceptable to assess the research results, which proves the validity of our hypotheses in model 3.

However, the paper has many limitations. The amount of samples in the experiment is a little small compare to the other empirical researches with thousands results of questionnaires, and the variety of samples is not plentiful enough based on the number of samples, thus, more data and test should be undertaken in the future research.

## Acknowledgements

This work was supported by National Natural Science Foundation of China under the number of 70601009 and 70890082, and by the education department of Heilongjiang Province under the number of 11514088.

## References

1. Miyazaki, A.D., Fernandez, A.: Consumer Perceptions Of Privacy And Security Risks For Online Shopping. *The Journal of Consumer Affairs* 1, 27–44 (2001)
2. Bauer, R.A.: Consumer behavior as risk raking Dynamic Marketing for a Changing World. In: *Proceedings of the 43rd Conference of the American Marketing Association*, pp. 389–398 (1960)
3. Bhatnagar, A., Misra, S., Rao, H.R.: On Risk, Convenience and Internet Shopping Behavior, *Association for Computing Machinery. Communications of the ACM* 47(4), 62–66 (2000)
4. Bhatnagar, A., Ghose, S.: Segmenting consumers based on the benefits and risks of Internet shopping. *Journal of Business Research Mobility and Markets: Emerging Outlines of M-Commerce* 57(12), 1352–1360 (2004)
5. Cairncross, F.: *The Death of Distance: How the Communications Revolution is Changing Our Lives*, 1–50. Harvard Business School Press, Boston (1997)
6. Cheng, R., He, F.: Examination of Brand Knowledge, Perceived Risk and Consumers' Intention To Adopt An Nline Retailer. *Total Quality Management & Business Excellence* 6, 677–693 (2003)
7. CNNIC. 18th statistical survey report on the Internet development in China (2006) (in Chinese), <http://www.cnnic.net.cn>
8. Covaleski, J.: Panel: Internet marketing may reduce prices, *Best's Review. Property/casualty insurance edition* 97(12), 71 (1997)
9. Cox, J., Dale, B.G.: Key Quality Factors in Web Sites Design and Use: An Examination. *The International Journal of Quality & Reliability Management* 19(7), 862–888 (2002)
10. Dawar, N., Parker, P.: Marketing Universals: Consumers' Use of Brand Name, Price, Physical Appearance, and Retailer Reputation as Signals of Product Quality. *Journal of Marketing* 58, 81–95 (1994)
11. Davis, F.D.: *A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results*. MIT Sloan School of Management, MA (1986)
12. Farag, S., Krizek, K.J., Dijst, M.: Online shopping and its relationship with online shopping: Empirical evidence from the Netherlands and the US. *Transport Reviews* 26(1), 43–61 (2006)
13. Forsythe, S.M., Shi, B.: Consumer patronage and risk perceptions in Internet shopping. *Journal of Business Research* 56(11), 867–875 (2003)
14. Gefen, D., Karahanna, E., Straub, D.W.: Trust and TAM in online shopping: An integrated model. *MIS Quarterly* 27(1), 51–90
15. Jarvenpaa, S.L., Tractinsky, N., Saarinen, L.: Consumer Trust in an Internet Store: A Cross-Cultural Validation. *Information Technology and Management* 1(12), 45–71 (1999)
16. Kaynama, S.A., Black, C.I., Keesling, G.: Impact Of The Internet On Internal Service Quality Factors: The Travel Industry Case. *Journal of Applied Business Research* 19, 135–145 (2003)

17. Kim, J.K.: Factors influencing consumers apparel purchasing intention in the C2C e-commerce market [Ph. D. Dissertation]. University of Nebraska, Lincoln, USA, pp. 2–5 (2005)
18. Lin, B., Wu, P., Hsu, C.: Evaluating Measurement Models for Web Purchasing Intention. In: Smith, M.J., Salvendy, G. (eds.) HCII 2007. LNCS, vol. 4558, pp. 740–748. Springer, Heidelberg (2007)
19. McKnight, D.H., Choudhury, V., Kacmar, C.: Developing and Validating Trust Measures for e-Commerce: An Integrative Typology. *Information Systems Research* 13(3), 334–359 (2003)
20. Mitchell, V.W.: Consumer perceived risk: conceptualizations and models. *Eur. J. Mark.* 33(1/2), 163–196 (1999)
21. Nena, L.: Consumers' perceived risk: sources versus consequences. *Electronic Commerce Research and Applications* 2(1), 216–228 (2003)
22. Peter, J.P., Ryan, M.J.: An Investigation of Perceived Risk At The Brand Level. *Journal of Marketing Research* 13, 184–188 (1976)
23. Peterson, R.A., Balasubramanian, S., Bronnenberg, B.J.: Exploring the Implications of the Internet for Consumer Marketing. *Journal of the Academy of Marketing Science* 25(4), 329–346 (1997)
24. Vijayasarathy, L.R.: Predicting consumer intentions to use on-line shopping: The case for an augmented technology acceptance model. *Information & Management* 41, 747–762 (2004)
25. Yadav, M.S.: Interactivity in the Electronic Marketplace: An Exposition of the Concept and Implications for Research. *Journal of the Academy of Marketing Science* 33(4), 585–603 (2005)
26. Zeithaml, V.A.: Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing* 52, 2–22 (1988)