

## **Identifying the Affecting Factors on Consumer`s Online Shopping Behavior Based on TAM, DTPB Model**

Zahra Alipur Darvish,

PhD of Business Management, university Assistant Professor, Islamic Azad University-North Tehran Branch,  
alipourdarvish.z@gmail.com

Mahnaz Azari Ghelichi,

Master of Marketing-Business Management, Islamic Azad University-North Tehran Branch, Mahnaze.azari@yahoo.com

Seyed Hamed Hamdi

Master of International Business-Business Management, Islamic Azad University-North Tehran Branch,  
seyedhamed.hamdi@yahoo.com

**ABSTRACT** – In the present study the factors affecting the behavior of online shoppers in using the internet as a shopping channel was investigated to determine the effective factors on customer's orientation for buying via internet. This was done because of the many benefits of e-commerce for customers, enterprise, and society, including speed and ease of doing business. These factors with the use of compiled model combining of two theories of Decomposed Theory of Planned Behavior and Technology Acceptance Model were inspected to access a union prospect for the reception of technology by users. The findings of the study, which was conducted on a sample of 360 Internet customers of Saipa revealed that three variables of perceived risk, subjective norms, and marketing mix are influencing factors on the online shoppers` behavior.

**KEYWORDS:** Consumer`s buying behavior, Decomposed theory of planned behavior, Technology Acceptance Model, Online shopping

### **Introduction**

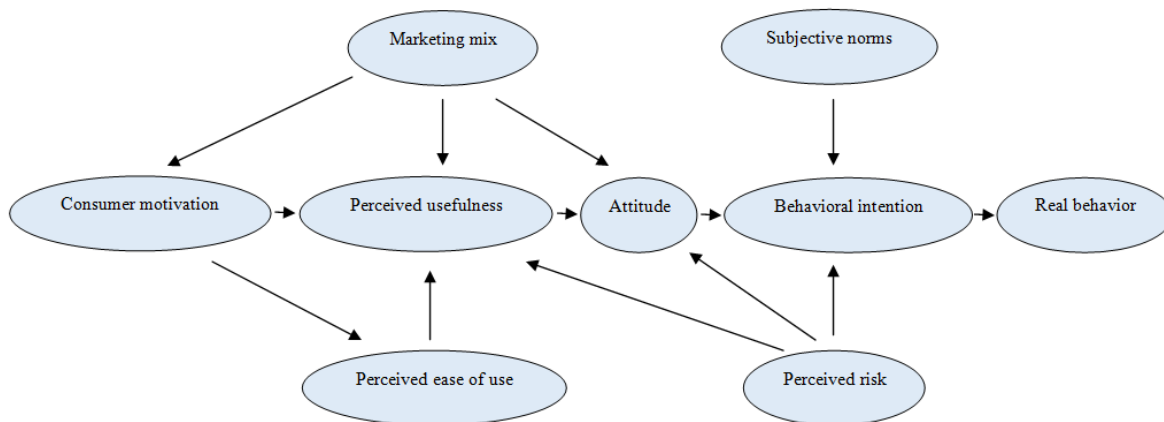
Business e-commerce is considered as a new way to define the needs of the organizations and customers which reduce costs, improve quality of goods and services, and accelerate the provision of services (Havaladar, 2006). In general, e-commerce is referred to electronic transactions, which are done through communication networks. Initially, the buyer or the consumer pays for a virtual store on the Internet and order goods via the web, and finally the goods are delivered (Sarmad Saeedi, 2004). Buyers tend to have access to the products as easier and more convenient as possible. They are calling for two-way communication that is right and lead to good knowledge of the products (product / service) (Cutler, 2007). Online shopping is a kind of shopping that can be done through web stores. E-commerce environment, which is Internet-based, allows customers to search for information and purchase goods and services through direct contact with the Internet shopping. It should be noted that the Internet-based shopping is not founded on the actual experience of purchasing products but on superficiality, such as image, shape, quality of information and advertising of the products. (Spiller and Loves, 1998) An important part of customer`s service is to provide the right answers to their needs and solutions to solve their problems. In e-commerce, through studying the internet consumer`s behavior and by identifying the factors in their purchasing behavior, web sites can be designed to make an efficient contacts with them and lead to the repetitive purchase and increase of consumption in the future. Through using the features of the virtual space, for example, using the tools available on the Internet, such as e-mail, the marketing relations can become effective and get customers` feedback and provide them with necessary effective reactions (Havaladar, 2006). A special feature of the internet-based media is this that it can be combined with pictures and sounds for better communication, in other words, the development and use of the Internet is not only a new method in marketing but also, a way to help customers to get and give feedback. (Lin et al, 2009). Technology Acceptance Model (TAM) (Davis, 1989), is a model which widely has been used to describe the acceptance of technology in more than the two past decades. The model claims that Perceived Usefulness (PU) and perceived ease of use (PEOU) are the two most important determinants of the intention to use the technology. Adoption of technology is widely used in a lot of researches in the field and has been examined in a variety of information technologies (Li et al., 2003). Theory of planned behavior (TPB) is originated from the area of social psychology and is one of the most common models of predicting a person's behavior, which uses different variables of behaviors` prediction in certain circumstances. The theory points out that attitude can explain human actions. (Montano and Taplin, 1997). The model presented in this study is based on a combination of two theories of TAM, and Decomposed Theory of Planned Behavior (DTPB).

**Related Literature**

In most studies in the field of online shopping, researchers have sought to identify the affecting factors in the acceptance of Internet shopping. Izadpanah studied (2010) the contributing moderated factors impacts on the intention of customers to shop via internet. Results of this study indicated that the confidence was the main factor for individuals` intention to buy online and then the other factors such as performance expectation, social penetration and expected confidence were the main factors based on priority that oriented the customers towards online shopping. The researches based on the theory of TAM, Planned Behavior and Decomposed Theory of Planned Behavior showed that the subjective norm, and perceived controlled behavior and confidence variables have significant impacts on the intention to buy tickets through the Internet, which among them the subjective norm is more affective in comparison with others (Karami, 2006). Khosroshahi (2009) examined the influencing factors on customers` intention to buy books online in Iran based on three theories of Technology Acceptance Model, Planned Behavior and Decomposed Theory of Planned Behavior. The efficacy of utilized subjective criteria element on the purpose and behavioral motivation to use and eventually to utilize online shopping were assessed more than perceived controlled behavior and attitude towards usage. "Hang Pi Shin" has done his 2002 research as an experimental study to predict online shopping acceptance based on two theories of Reasoned Action and the TAM. The results indicated that there is a significant influence of both perceptions of usefulness and ease of use on attitude towards using the system. Another study was done by "Lean" in 2007, named as predicting consumers` acceptance of online shopping with emphasis on the comparison and benchmarking of existing theories. The researcher of the study has used not only the TAM but also the Theory of Planned Behavior and the Decomposed Theory of Planned Behavior in combined manner. The results indicated that the strength in explaining the theory of Decomposed Theory of Planned Behavior is in determining and modeling customers` technology acceptance and interest. "Ha and Stoll" in 2007 carried out a study named as an acceptance of online shopping by consumers based on the TAM. In this study, the researcher's theory of TAM is the basis and two factors of quality of used technology and confidence have been added to the model. The results showed that the significant influence of two factors of perceived usefulness and trust on customers` attitude is more than perceived ease of use and overall confidence in the technology and the level of perceived security are the two most important factors in the use of technology.

**Theoretical Framework**

Previous studies were conducted by researchers to determine the affecting factors on the acceptance of e-commerce and online shopping. They were performed by examining the different models such as the theory of TAM, TPB and IDT. The model presented in this study is based on a combination of two theories of TAM, and DTPB.



Research model-the combined model (DTPB), (TAM)

**Definition of the variables**

The following table summarizes the variables that have been defined.

**Table 1.** The Table of main structure of the research model

Main Structure	Definition
Perceived usefulness	A user's subjective perception of the use of specific application system will enhance his job performance in a field or in an organizational field (Davis et al., 1989).
Perceived ease of use	The degree which a user expects the regarded system to work without attempt in the future. (Davis et al., 1989).
Attitude	Individual positive or negative feelings (evaluative) on the specified behavior (Fishbin & Ajzen, 1975).
Subjective norm	Perception of how people who are important to him frequently think to and whether he should or should not consider their behavior into consideration (Fishbin& Ajzen, 1975).
Marketing mix	4p is an abbreviation for 4 terms: product, price, promotion and place. (Granrus, 1997).
Use's motive	It is an active party within a person, which leads to the targeted behavior.
Perceived risk	Risk is defined as an attribution of decision of consumer's perception of overall negation of a process, and includes all the unexpected negative consequences for the consumer (Moon and Minor, 2007).
Behavioral intentions	It refers to the individual perceptions of a particular behavior. In other words, Fishbin and Ajzen (1975), said that intention is a state of mind and possible thing that communicates between the person and his action (Gapi and Ramaya, 2007).
Real behavior	In this study, the purpose of the real behavior is of the final consumer buying behavior, which is the individuals and families who purchase goods and services for personal consumption. Consumer behavior studies the processes of selection, use of the product and putting them away, services, experiences or ideas by individuals, groups and organizations to satisfy customer's needs as well as the effects of these processes on society. (Hawkins et al., 2006).

**Hypotheses**

First hypothesis: Marketing mix of product has positive impacts on consumer's motivation, ease of use and attitude.  
 The second hypothesis: user's motive has positive impact on the perceived usefulness and the perceived ease of use.  
 The third Hypothesis: Ease of use has a positive impact on usefulness.  
 The fourth hypothesis: The perceived risk has negative impact on the perceived usefulness, attitudes, and behavioral intentions.  
 Fifth hypothesis: The attitudes and norms have positive impacts on behavioral intentions.  
 Sixth hypothesis: Behavioral intentions have positive impact on the real behavior.

**Research Methodology**

According to the main goal of the research, the present study is in the field of applied research and is based on the descriptive-survey study. To collect the data, 63 questions with a five-point Likert scale questionnaire were administered. In this study, the test-retest method was utilized to estimate the reliability (Cronbach's alpha). Cronbach's alpha coefficient of the questionnaire was estimated to appear 0.810, which was higher than 0.7 and was an acceptable index of reliability. The population of this research were the buyers of goods from Saipa in the country in 2011, who bought via Internet. The number of online shoppers in 2011 in Saipa was 4,400 persons, whose names were taken from marketing and sales company list of Saipa. The study sample was selected through the sampling number table method of C. Kerr and Morgan C. and was conducted randomly. According to the table for N = 4400 the sample size is 360. In Table 2, data and Cronbach's alpha coefficient of the items in questionnaire are provided.

**Table 2.** Data and Cronbach's alpha coefficient of the questionnaire items

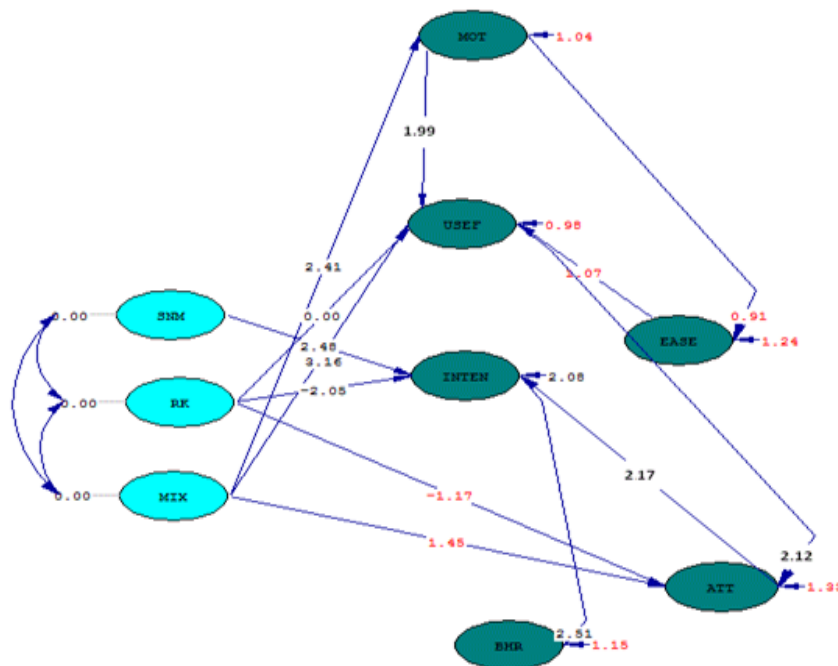
Latent Variable	Related questions	Cronbach's alpha coefficient	Source
1. The user's motive	1-7	0.734	Ducoffe, (1996) Eighthmey, (1997) Venkatesh and Davis, (1996, 2000) (Mathwick et al., (2001) Richard, (2005) Moon & Kim, (2001)
2. Marketing mix	8-37	0.702	Kotler, (1998) McCarthy, (1981) Angel Herrero Crespo, Ignacio Rodriguez del Bosque, (2010) Jarvenpaa and Todd, (1996) Mathwick et al., (2001)
3. Perceived usefulness	38 -41	0.879	Davis, (1986) Venkatesh and Davis, (1996, 2000) Dishaw and Strong, (1999) Angel Herrero Crespo, Ignacio Rodriguez del Bosque, (2010) Jarvenpaa and Todd, (1996). Yiu et al., (2007) Cheng et al., (2006) Hong et al., (2006); Porter & Donthu, (2006)
4. Perceived ease of use	42-44	0.636	Davis, (1986) Dishaw and Strong, (1999) Moon and Kim, (2001) Venkatesh and Davis, (1996, 2000) Cheng et al., (2006) Hong et al., (2006) Porter & Donthu, (2006)
5. Attitude	45-47	0.763	Ajzen, (1989) Taylor and Todd, (1995) Venkatesh and Davis, (1996, 2000) Angel Herrero Crespo, Ignacio Rodriguez del Bosque, (2010) Jarvenpaa and Todd, (1996) Cheng et al., (2006) Moon & Kim, (2001)

6. Subjective norms	48-51	0.811	Ajzen, (1985) Taylor and Todd, (1995) Angel Herrero Crespo, Ignacio Rodriguez del Bosque, (2010) Jarvenpaa and Todd, (1996) Bhattacharjee, (2000)
7. The perceived risk Individual assessment of the risks that are important to him	52-58	0.707	Davis, (1986) Dishaw and Strong, (1999) Moon and Kim, (2001) Angel Herrero Crespo, Ignacio Rodriguez del Bosque, (2010) Jarvenpaa and Todd, (1996) Featherm & Pavlou, (2003)
8. Behavioral intentions	59-61	0.898	Ajzen and Driver, (1992) Sheeran and Orbell, (1999) Armitage and Conner, (2001) Venkatesh and Davis, (1996, 2000) Bhattacharjee, (2000) Cheng et al., (2006)
9. Real behavior	62-63	0.816	Wu and Chen, (2005) Bhattacharjee, (2000) Ajzen, (1989) Venkatesh and Davis, (2000)

**Findings**

**1. Research Hypotheses test**

One of the strongest and the most suitable analysis is multivariate analysis. For this reason, in the present study to confirm or refuse the hypothesis, structural equation model software of LISREL was used. Testing the Hypotheses of the research by using structural equation model, the output of the software has shown the suitability of the structural fit model (the ratio of 2:  $\chi$  to df is lower than 3.) The amount of RMSEA = 0.062 shows the appropriateness of the structural model. The GFI, AGFI and NFI are respectively 0.93, 0.92 and 0.97, which show the model is relatively highly Fit. In the following, the structural model with significant coefficients is shown.



The results of confirming or refuting the hypothesis are provided in the following Table. Table shows the approval or rejection of the hypothesis of the research

**Table 3.** Approval or rejection of the hypothesis of the research

	Hypotheses (the exogenous obstacles)	Factor loadings	R <sup>2</sup>	t-value	Result
<b>The First Hypothesis</b>	The marketing mix effect on consumer's motivation	0.16	0.025	2.41	Confirmed
	The marketing mix effect on perceived ease of use	0.68	0.462	3.16	Confirmed
	The marketing mix effect on attitude	0.04	0.0016	1.45	Rejected
<b>The Second Hypothesis</b>	Consumer's intention effect on perceived usefulness	0.31	0.096	1.99	Confirmed
	Consumer's intention effect on perceived ease of use	0.11	0.0121	0.91	Rejected
<b>The Third Hypothesis</b>	Effect of perceived ease of use on perceived usefulness	0.12	0.014	1.07	Rejected
<b>The Fourth Hypothesis</b>	The effect of perceived risk on perceived usefulness	- 0.01	0.0001	0	Rejected
	The effect of perceived risk on attitude	- 0.08	0.0064	-1.17	Rejected
	The effect of perceived risk on behavioral intentions	- 0.91	0.828	-2.05	Confirmed
	The effect of perceived usefulness on attitude	0.18	0.032	2.12	Confirmed
<b>The Fifth Hypothesis</b>	The effect of attitude on behavioral intentions	0.22	0.048	2.17	Confirmed
	The effect of subjective norm on behavioral intentions	0.75	0.562	2.48	Confirmed
<b>The Sixth Hypothesis</b>	The effects of behavioral intentions on real behavior	0.76	0.577	2.51	Confirmed

**2. Conclusions and recommendations**

According to the results of testing hypotheses of this study, it seems that the results are quite consistent with the results of the study by Lin and et.al. Perceived risk variable, subjective norms and marketing mix are the most effective factors that affect behavioral intentions and behavior of online shoppers. (Lin et al, 2009). In this study, the same result was obtained. Studies show that the perceived risk reduced the willingness of consumers for online shopping of goods. (Bridge and flour Shim, 2008). Consumers decided what to buy in seeking solutions that reduced uncertainties and risks of online shopping to buy with lower costs, in easier way and to obtain the best purchase. (Chu and Lee, 2008). Because of the fact that the variable is buying via internet, the marketing mix, its importance, and perceived risk became also significant. Buyers tended to have products easier and more convenient. (Cutler, 2007).

**3. Effective Suggestions**

According to the results of testing hypotheses, some practical suggestions to companies that store their individual methods are provided:

1. Because of the effect of marketing mix on individual attitudes and the effect of attitude on behavioral intentions, and the behavioral intentions effect on the real behavior of the buyers, the companies are recommended to add the effectiveness of market-related factors that were considered in this study, such as increasing the quality and variety of products and customization, offering significant discounts to online shoppers, improving quality of online shopping sites and increasing advertisement to raise awareness of people in the field of expertise and ability of the company to participate in online sale of goods. Companies should use this determinant factor to expand their online shopping rate.
2. According to the importance and effective role of subjective norm on behavioral intentions and behavioral intentions influence on the real behavior of the buyer, it is recommended to improve subjective beliefs and norms of people about acceptance and use of internet shopping, subjective norms of people about acceptance and applying internet through website. Therefore, programs need to be adopted so that those who buy products through internet may recommend it to their friends and relatives to do the same. Increasing customer's loyalty and satisfaction lead to word-of-mouth advertising. The company can tempt buyers to disseminate word-of-mouth advertising by increasing satisfaction and customers' loyalty of the online shoppers.
3. Regarding the effect of perceived risk by individual on behavioral intentions and behavioral intentions impact on the real behavior of the buyer, it is recommended to Saipa Company to minimize the negative impacts of this variable by giving confidence to purchaser that the online shopping has no financial, time and security risks for them. They should reduce the perceived risks of online shopping to decrease the negative effects of it on consumer's purchase intention.

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