The effect of trust on consumers' online purchase intention: An integration of TAM and TPB

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CHRONICLE	ABSTRACT
	The aim of this research is to investigate the effects of different factors on Vietnamese consumers' online shopping intention based on Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB). A questionnaire was designed and sent directly to the respondents through the Internet. After 5 months period of collecting the necessary data, 423 valid replies were collected and analyzed. The data were analyzed in accordance with exploratory factor analysis (EFA) and multiple regression techniques. The results show that perceived usefulness, perceived ease of use, attitude, subjective norm and trust had positive effects on consumers' online shopping intention.

1. Introduction

In recent years, online shopping has become more and more popular around the world (Wu et al., 2011). The proportion of internet users who conduct their online shopping activities and the revenue from online retail industry are constantly increasing over time (Ozen & Engizek, 2014). However, the percentage of Vietnamese consumers shopping online is lower than other countries in the Asia-Pacific region as well as in the world (Ministry of Industry and Trade, 2014). Companies with plans for the growth of online retailing need reliable estimates of the growth of online shopping and need to understand the factors influencing customers' online shopping intention (Lohse et al., 2000). It is believed that shopping intention is one of the two key factors that carry decisive impact on customers' shopping behavior (Blackwell et al., 2001). Research on factors that impact the intention of online shopping behavior applied numerous models in which technology acceptance model (TAM) and theory of planned behavior (TPB) have been widely used. Within this known range, TAM has been successfully applied in the role of theoretical framework which is used to forecast online shopping intention and behavior (Gefen et al., 2003a; Gefen et al., 2003b; Pavlou, 2003; Shim & Lee, 2011). TAM is originally introduced by Davis (1985) as an adaptation version of Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975). According to TAM,

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"intention" is directly impacted by two factors; namely "perceived usefulness" and "perceived ease of use" (Davis, 1989).
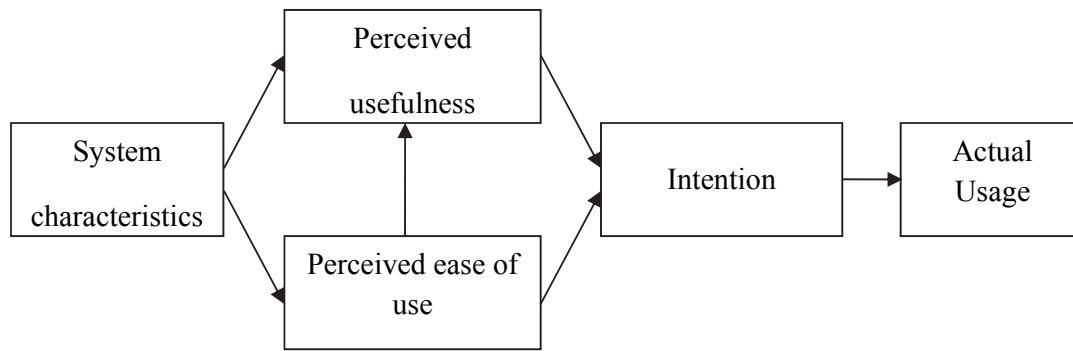
Fig. 1. Technology Acceptance Model

Similar to TAM, TPB was developed by Ajzen (1991) based on Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975) by adding a new factor of "Perceived Behavioral Control" into TRA. Perceived Behavioral Control reflected the easiness or difficulty in conducting a behavior which depends on the availability of resources and opportunities to conduct such behavior (Ajzen, 1991). According to TPB, "Behavioral Intention" of consumer is influenced by "Attitude", "Subjective Norms" and "Perceived Behavioral Control". TPB has been accepted and widely used in research to forecast usage intention and specific behavior of individuals. Moreover, empirical studies have shown the compatibility of this model in studying consumer's behavior within the context of online shopping (George, 2004; Hansen et al., 2004). Hansen et al. (2004) tested both TRA and TPB models and the results showed that TPB could explain consumer behavior better than TRA.
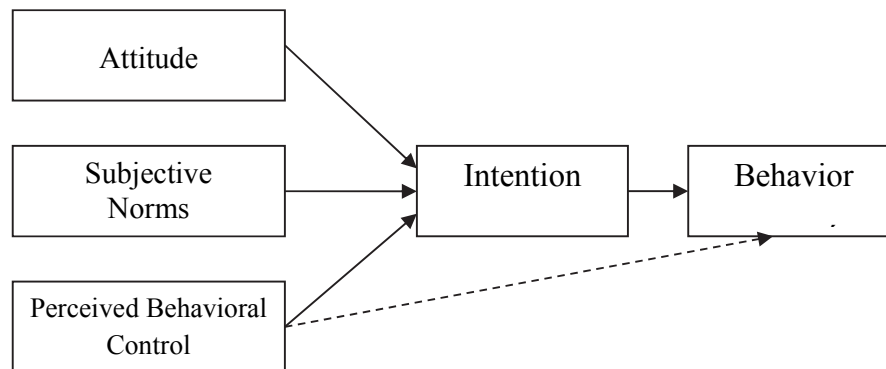
Fig. 2. Theory of Planned Behavior (TPB)

Since both are developed from TRA basic thus TPB and TAM have certain interference with each other. Perceived Behavioral Control is defined as an individual feeling about the ease or difficulty of conducting a behavior (Ajzen, 1991). Meanwhile, perceived usefulness is "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989). This in turn shows that Perceived Behavioral Control in TPB is similar to Perceived Ease of Use in TAM. Beside the above mentioned factors, trust is amongst the most influencing factors that carry big impact on consumer online shopping intention. The lack of trust has been proved to be one of the main reasons that stop consumer online shopping (Jarvenpaa et al., 2000; Lee & Turban, 2001). If trust is not built, no online transaction can be executed (Winch & Joyce, 2006). Thus, consumer trust for online shopping's vendors is the foundation for the act of virtual shopping via internet (Chen & Chou, 2012). The impact of trust to consumer

online shopping intention has been investigated by many researchers. However, results from such researches still differ from one to another. According to Hahn and Kim (2009), trust does not impact consumer online shopping intention. At the same time, other researches argued that trust is the central factor within relationships of exchange nature (McKnight et al., 2002) and a factor that significantly impact consumer behavior in both online and traditional shopping (Winch & Joyce, 2006). Within the context of online shopping, trust plays a very important role as consumer perceived risk of transactions is higher in virtual environment given the buyer does not directly contact with seller and the underlying goods (Jarvenpaa et al., 2000; Pavlou, 2003). Therefore, this paper will integrate TAM and TPB with trust to research Vietnamese consumers' online shopping intention.

2. Research model and hypotheses

Intention is a factor used in evaluation of behavior execution possibility in the future (Blackwell et al., 2001). According to Ajzen (1991), intentions are assumed to capture the motivational factors that influence a behavior, they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior (Ajzen, 1991, p.181). Thus, Delafrooz et al. (2011) stated that "online purchase intention is the strength of a consumer's intentions to perform a specified purchasing behavior via Internet" (Delafrooz et al., 2011, p.70). According to Davis et al. (1989), intention is directly impacted by "perceived usefulness" and "perceived ease of use". Perceived usefulness is "the degree to which a person believes that using a particular system would enhance his or her job performance" and perceived ease of use is "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989). In online shopping context, perceived usefulness refers to the degree a consumer believe that online shopping will increase their procurement effectiveness (Shih, 2004) and perceived ease of use is the degree where consumer believes that they would not need any effort doing shopping online (Lin, 2007). There is an evidence that online shopping intention bears a significant impact from perceived usefulness and perceived ease of use (Gefen et al., 2003a). Thus, the hypotheses for this paper will be:

H_1: Perceived usefulness has a positive impact on online shopping intention.

H_2: Perceived ease of use has a positive influence on online shopping intention.

Meanwhile, according to Ajzen (1991), intention is directly impacted by "attitude", "Subjective Norms" and "Perceived Behavioral Control". Among these, attitude refers to "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991, p.188). Within the context of online shopping, attitude refers to good or bad ratings from consumer about the use of Internet to purchase goods or services from retail website (Lin, 2007, p.434). Consumer attitude has impact on their intention (Fishbein & Ajzen, 1975). Within the context of online shopping, consumer attitude with online shopping has been proved to carry positive impact to their shopping intention (Yoh et al., 2003). This relationship has been supported by many other empirical studies (Lin, 2007; Pavlou & Fygenson, 2006). Thus, the hypothesis for this paper will be:

H_3: Consumer attitude has a positive impact to their online shopping intention.

Subjective norms can be described as an individual perception of social pressures on conducting or not conducting certain behavior (Ajzen, 1991, p.188). Previous studies pointed out that there is a positive relationship between subjective norms and intention (Hansen et al., 2004; Yoh et al., 2003). Within the context of online shopping, subjective norms refer to consumer perceptions regarding the use of online shopping by the opinions of the referent group (such as friends or colleagues) (Lin 2007, p. 434). Lin (2007) proved that reference groups' comment has a positive impact to consumer online shopping intention (Lin, 2007). Thus, the hypothesis for this paper will be:

H_4: Subjective norms have positive impacts on consumer online shopping intention.

Trust is established from 3 different angles: (1) ability; (2) integrity and (3) benevolence (Mayer et al., 1995). Ability is the faith that the trustee will be able to fulfill the needs of the trustor. Integrity is the faith that the trustee will be bona fide and honor his/her commitments. Benevolence is the faith that the trustee will take care and act on behalf of the trustor's benefit. In online shopping context, trust is the willingness to accept unfavorable condition possibility to conduct shopping transaction with online selling companies with the expectation that they will act according to what best for consumer basic (Lee & Turban, 2001). The results of previous researches showed that trust is an important factor influencing online shopping intention (Gefen et al., 2003a; Gefen et al., 2003b; Pavlou, 2003; Wen et al., 2011). Thus another hypothesis for this research is:

H_5: Trust has a positive impact on online shopping intention.

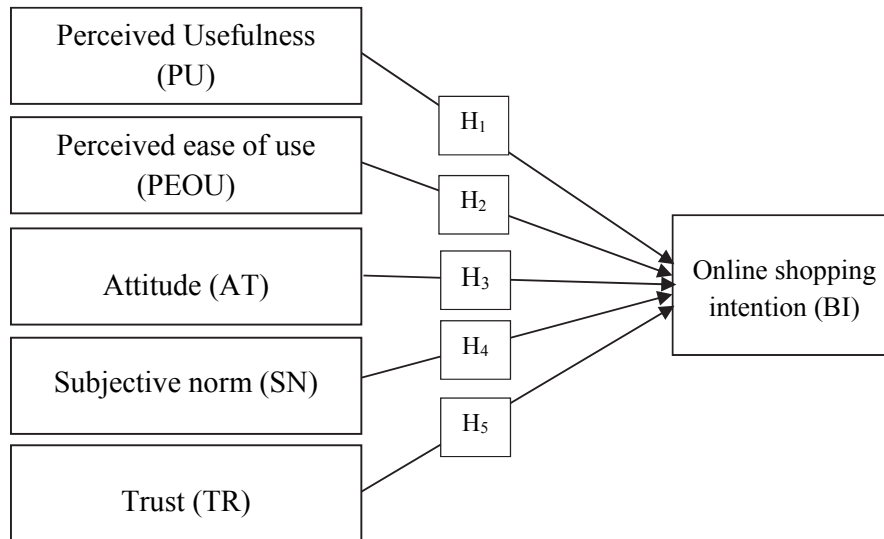The corresponding research hypotheses are described and presented in Fig. 3.

Fig. 3. Research Model

Source: Authors

3. Research methodology

3.1. Qualitative Study

The purpose of qualitative study is to test, screen and identify the relationship between the variables in the theory model based on the foundation of the proposed research methodology of this paper. Besides, this qualitative study also aims to correct and develop the inherited scales from previous studies. There are some reasons for cultural and language differences as well as development level, which cause the scales a need to be adapted in order to fit with Vietnamese research context. In order to achieve the above mentioned aims, the authors conducted 10 depth interviews with consumers who had some experiences for online shopping at several big cities in Vietnam. Such consumers were selected carefully to ensure representativeness in terms of some main indicators: income, occupation, gender, education, internet experiences, online shopping experiences. Different consumers under various characteristics were interviewed and provided multidimensional and complete information for the research to achieve preset aims. The interviews were conducted with stop-when-no-new-factor-is-found ego. With the preset contents, the authors found no new factor in comparison with the previous interviews at the 8th conversation. However, to further ensure the research precision, the authors still conducted 2 more intensive interviewed. The authors did not find any new factor in comparison with previous interviews thus stopped intensive interview activity after the 10th one.

The results from qualitative study show that in addition to perceived usefulness and perceived ease-of-use in TAM, online shopping intention was also significantly impacted by trust and perceived risk of consumer towards a certain retail website. Thus based on this qualitative research's result, the authors have developed TAM by combining 2 variables of trust and perceived risk in to this model.

3.2. Quantitative Study

3.2.1. Survey design

Survey questionnaire was built based on this paper's research overview and adapted to match with Vietnamese research environment. The respective scales for perceived usefulness and perceived ease of use were inherited from Lin's research (2007). Perceived risk was measured by inherited scale from Corbitt et al. (2003) and Forsythe et al. (2006). Trust was measured by inherited scale from Jarvenpaa et al. (2000) and McKnight et al. (2002). Attitude, subjective norm and online shopping intention within this research paper were measured by the inherited scale from Pavlou and Fygenson (2006). Along with the combination of inherited scales from previous research, this paper also altered such scales in the variable for trust in order to better fit with Vietnamese research environment. The variables were measured by Likert scale from 1 to 7. Before extending the investigation in a big scale, this questionnaire was sent to some individual clients for a pre-test (30 people). In general, the questionnaire was acceptable with minor alteration required in terms of wording and meaning so that the respondents could avoid misunderstanding and in terms of some questions design to promote respondents' convenience.

3.2.2. Sample and data collection

This research generally targets experienced users that use Internet for online shopping purpose in Vietnam. The questionnaires were sent directly and through Internet to the targets. There were 582 returned results in which 159 items were invalid due to lack of information or non-target respondents. All 159 replies were excluded before data process commenced. Therefore, the volume of official valid replies in use for analysis was 423. The sample consists of 169 males (40.0%) and 254 females (60.0%). Sample population ranges from high school graduates (42.3%) to college/vocational school graduates (13.5%), university graduates (32.4%), post graduates (11.1%) and other (0.7%). Income from sample population is relatively low with 62.6% earns less than VND 5 Mio/month and 37.4% earns more than VND 5 Mio/month. The demographic profile of our final sample is presented in Table 1.

Table 1
Demographics of the sample (n = 423)

Characteristic		Frequency	Percentage
Gender	Male	169	40.0
	Female	254	60.0
Education	High school degree	179	42.3
	College school degree	57	13.5
	Bachelor degree	137	32.4
	> Bachelor degree	47	11.1
	Others	3	0.7
Average monthly income	≤ 5.000.000 VND	265	62.6
	> 5.000.000 VND	158	37.4
Age group (years)	18 – 25	285	67.4
	26 – 30	54	12.8
	31 – 36	46	10.9
	> 36	38	9.0

Source: Authors

3.2.3. Data analysis

After screening and reject unsatisfactory questionnaires' replies, the authors proceed coding and input data. Such raw data was then being processed by SPSS and the hypotheses were tested by multiple regression technique. However, we conducted scale reliability analysis and exploratory factor analysis (EFA) before multiple regression technique to test the hypotheses.

Scale reliability has been tested by using Cronbach's Alpha for each of the underlying factors. The purpose of this test was to explore whether the observed variables had the same measurement for a particular measuring item. The abundant or lack of contributed value is reflected through Corrected Item – Total Correlation. Through that, it is possible to exclude unsuitable factors in the underlying research model. According to Hoang and Chu (2008), a Cronbach's Alpha ranging from 0.8 to 1 indicates a good scale, from 0.7 to 0.8 indicates that the scale is usable.

In terms of Corrected Item – Total Correlation, the scale is usable when this figure is from 0.3 and up (Hair et al., 2010). EFA analysis has been conducted for all observed variables with Varimax rotation and eigenvalue of greater than 1 to find out representative factors of variables. According to Hair et al. (2010), the requirements for EFA analysis are: (i) KMO value is within the range of 0.5 to 1; suitable to conduct EFA; (ii) Only the observed variables that has factor loading of greater than 0.3 will be kept in the model, those that resulted in a factor loading below this threshold will be eliminated; (iii) Total Variance Explained is greater than 50% and (iv) Eigenvalue greater than 1. After scale reliability test and EFA analysis, the satisfied scales were analyzed by taking mean values and the control variables were coded to conduct correlation analysis. We have used Pearson (r) correlation to test the linear relationship between factors. If the correlation coefficient between dependent and independent variables are significant then they are related and linear analysis is applicable. The absolute value of r showed the strength of linear relationship. The closer such absolute value to 1, the stronger the relationship and vice versa.

After correlation analysis, we have conducted multiple linear analysis with method Enter at a significant of 5% to test the proposed hypotheses, the suitability of research model and the level of impact that observed variables can have on the dependent variable. The paper inherited research methodology from previous studies and used linear analysis instead of non-linear analysis. The linear analysis of this research being employed was the OLS method. The adjusted R^2 is used to identify the suitability of the model. F analysis has been used to emphasize the extension capability of this model. T analysis has also been used to refuse the hypotheses that the total linear analysis result is 0.

4. Results

4.1. Reliability

Reliability of scales is tested using coefficient Cronbach's Alpha for each factor. In this case, returned results for coefficient Cronbach's Alpha are all greater than 0.7 and for Corrected Item-Total Correlation are all greater than 0.5 proves that scales used fulfill reliability requirement. Results are shown in Table 3 as follows.

Table 2
Results of reliability analysis

Factor	Number of items	Cronbach's Alpha	Minimum of Corrected Item-Total Correlation
Perceived Usefulness	3	0.862	0.732
Perceived ease of use	3	0.793	0.584
Attitude	4	0.899	0.735
Subjective norm	2	0.831	0.711
Trust	4	0.860	0.556
Online shopping intention	2	0.921	0.854

Source: Authors

4.2. EFA analysis

KMO test and Bartlett's test of Sphericity scored a value of 0.779, within the allowed range from 0.5 to 1. On the other hand, 16 observed variables converged on 5 factors in line with theoretical model. Factor loading of observed variables are all greater than 0.5 thus all variables were kept in the model.

Table 3
Rotated Component Matrix

	Component				
	1	2	3	4	5
PU1			.862		
PU2			.820		
PU3			.847		
PEOU1				.829	
PEOU2				.871	
PEOU3				.657	
AT1	.815				
AT2	.801				
AT3	.855				
AT4	.792				
SN1					.846
SN2					.847
TR1		.664			
TR2		.819			
TR3		.754			
TR4		.927			

Source: Authors

4.3. Correlation analysis

Pearson correlation coefficient is used to analyze the correlation between quantitative variables. Correlation coefficients showed that the relationships between dependent variables and independent variables all have statistical meaning. On the other hand, the magnitude of the correlation coefficients ensures no multicollinearity phenomenon. Thus other statistical results can be used to test the relationship between variables.

Table 4
Correlations Matrix

		PU	PEOU	AT	SN	TR	BI
PU	Pearson Correlation	1	.326**	.411**	.268**	.427**	.375**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	423	423	423	423	423	423
PEOU	Pearson Correlation	.326**	1	.467**	.393**	.308**	.438**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	423	423	423	423	423	423
AT	Pearson Correlation	.411**	.467**	1	.481**	.449**	.545**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	423	423	423	423	423	423
SN	Pearson Correlation	.268**	.393**	.481**	1	.443**	.474**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	423	423	423	423	423	423
TR	Pearson Correlation	.427**	.308**	.449**	.443**	1	.505**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	423	423	423	423	423	423
BI	Pearson Correlation	.375**	.438**	.545**	.474**	.505**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	423	423	423	423	423	423

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

4.4. Hypotheses testing

Result of the regression analysis show 5 independent variables: perceived usefulness, perceived ease of use, attitude, subjective norm, and trust which have standardized (beta) coefficients of 0.074, 0.156, 0.255, 0.165 and 0.273, respectively with Sig. less than 0.05. Therefore, all five hypotheses H_1, H_2, H_3, H_4 and H_5 have been supported.

Table 5
Result of multiple regression of factors impact online shopping intention

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.317	.257		1.232	.219		
	PU	.072	.042	.074	1.726	.005	.743	1.346
	PEOU	.164	.045	.156	3.620	.000	.728	1.374
	AT	.311	.058	.255	5.373	.000	.604	1.657
	SN	.178	.048	.165	3.688	.000	.678	1.475
	TR	.257	.049	.237	5.279	.000	.672	1.489

a. Dependent Variable: BI

Source: Authors

5. Discussion and conclusion

The main contribution of this paper was the integration of Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB) by adding the factor of trust in the investigation of consumer online shopping intention. On the other hand, this paper has also rechecked the vague relationship existed in previous studies between trust and online shopping intention. The results have shown that, consumer online shopping intention have been influenced by Perceived Usefulness, Perceived Ease of Use, Attitude, Subjective Norms and Trust. This shows similarity to the findings by Gefen et al (2003) and Pavlou (2003) researches. This results have also proved that trust is a factor that carries significant impact to consumer online shopping intention. Thus, in order to improve such intention, the retailers need to build trust with their customers. To do this, retailers need to develop a clear and easy to understand policy on warranty, compensatory and handling customer complaint. Product compensatory policy needs to regulate specific condition for specific situation, announce clearly which is not entitled for compensation so that customer knows beforehand of the transaction. For customer complaint, retailers need to handle those timely and satisfactory in accordance with the published policy in view of customer satisfaction.

This paper has also pointed out that perceived ease of use carries an impact to consumer online shopping intention. Therefore, online retailers need to design their website user-friendly where consumer can search, shop and precede payment at the easiest possible way. The selling website needs to be organized sophisticatedly with integrated search engine, comparison tools to support consumer in finding their best fit solutions timely. Moreover, in view of the current globalization context, customer of online retailers is not only within their country but also from across the globe thus website needs to use multiple languages to better suit many different target customers.

Beside the above findings, this paper has also faced with the following limitation. Trust plays a very important role as consumer perceived risk of transactions is higher in virtual environment given the buyer does not directly contact with seller and the underlying goods (Jarvenpaa et al., 2000; Pavlou, 2003). However, this paper did not study the relationship between risk and online shopping intention. Hence in the future, this research can be further extending to the study the impact of perceived risk to consumer online shopping intention.

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