

Consumer Perceived Risk, Attitude and Online Shopping Behaviour; Empirical Evidence from Malaysia

Mohd Shoki Md Ariff¹, Michele Sylvester¹, Norhayati Zakuan^{1*}, Khalid Ismail², Kamarudin Mat Ali³

1 Department of Business Administration, Faculty of Management,
Universiti Teknologi Malaysia (UTM), Skudai, Johor, Malaysia

2 Universiti Pendidikan Sultan Idris, Malaysia

3 Lembaga Tabung Haji Malaysia

E-mail: norhayatimz@utm.my

Abstract. The development of e-commerce has increased the popularity of online shopping worldwide. In Malaysia, it was reported that online shopping market size was RM1.8 billion in 2013 and it is estimated to reach RM5 billion by 2015. However, online shopping was rated 11th out of 15 purposes of using internet in 2012. Consumers' perceived risks of online shopping becomes a hot topic to research as it will directly influence users' attitude towards online purchasing, and their attitude will have significant impact to the online purchasing behaviour. The conceptualization of consumers' perceived risk, attitude and online shopping behaviour of this study provides empirical evidence in the study of consumer online behaviour. Four types of risks - product risk, financial, convenience and non-delivery risks - were examined in term of their effect on consumers' online attitude. A web-based survey was employed, and a total of 300 online shoppers of a Malaysia largest online marketplace participated in this study. The findings indicated that product risk, financial and non-delivery risks are hazardous and negatively affect the attitude of online shoppers. Convenience risk was found to have positive effect on consumers' attitude, denoting that online buyers of this site trusted the online seller and they encountered less troublesome with the site. It also implies that consumers did not really concern on non-convenience aspect of online shopping, such as handling of returned products and examine the quality of products featured in the online seller website. The online buyers' attitude was significantly and positively affects their online purchasing behaviour. The findings provide useful model for measuring and managing consumers' perceived risk in internet-based transaction to increase their involvement in online shopping and to reduce their cognitive dissonance in the e-commerce setting.

Keywords: Perceived risks, Attitude, Online Shopping Behaviour

1.0 Introduction

The growth of Internet has increased the popularity of online shopping [1] and it is the third most popular Internet activity, following e-mail using/instant messaging and web browsing [2]. Online shopping allows people to buy anything at any time, thus making it the most flexible way of



purchasing electronically. It was reported that Malaysia's online shopping market size was RM1.8 billion in 2013 and it is estimated to reach RM5 billion by 2015 [3]. According to Malaysian Communication and Multimedia Commission [4], online shopping was ranked in the 11th position (of 15 purposes) why Malaysian access internet. These data provide two implication in the study of e-commerce or specifically consumer online shopping behavior; (i) the growth of online market size is very promising in the Malaysia's e-commerce landscape; and (ii) the online purchasing is not a major factor driving Malaysian to access the internet, thus posing questions how to improve its ranking, as well as to research factors hindering them to do online shopping. The former provides huge market growth for online shopping while the latter drives many researchers to examine on how consumers' perceived risk should be managed to allow more buyers committing in online purchasing. Thus, consumers' online shopping behavior should be researched in relation to their attitude and perceived risks as this will lead to the more Malaysian doing online transaction and this will give significant impact to Malaysia e-commerce development.

In marketing literature, it was recognized that risk perceptions directly affect purchasing and purchase intention, i.e. when consumers' perceived risk is high, the possibility of consumer to buy or to repurchase online will be low. It shows that perceived risk will affect the attitude of online purchasing [5]. Negative effects from the perception of risk have also been found to have a negative impact on shoppers' attitudes towards online shopping [6, 7 and 8]. Previous researches indicated that attitude towards online shopping is a significant predictor of making online purchases [9]. Obviously, risk can be real and as long as it is real it will affect consumers' purchasing behavior [10]. Then, consumers' perceived risk of online shopping must be continuously examined to monitor the extent to which they exert negative impact to consumers' online attitude and shopping behavior as well as to avoid them experiencing post-purchased dissonance. Hence, consumers' perceived risk should be continuously researched so that they can be proactively managed and reduces, thus contributing to the increase in online shopping. Therefore, this research is carried out to answer to the two research questions; (i) Do perceived risks affect attitude of Malaysian customers in online shopping? and (ii) does consumers' attitude affects their online shopping behavior?

2.0 Literature Review

In general term, online shopping is a process of buying products or services through Internet. Online shopping involves a user accessing internet to search, select, buy, use, and dispose of goods and services, in satisfying his or her needs and wants. In accessing and making online buying, individuals encounter a host of risk. In fact, consumers perceive a higher level of risk when purchasing through Internet compared with traditional retail transactions [11]. According to Ko et al. [12], perceived risk is the possibility of loss in achieving a favorable outcome while consumers doing online shopping, indicating individuals feeling of uncertainty with the possibility of negative outcome in their online purchasing.

Since Bauer [13] introduced risk-taking behavior in marketing literature as a possible measure of consumer attitude towards a purchase, individuals' perceived risk has been defined in several ways, with considerable debate concerning the merits of each point of view [14]. For example, Cultural Theory or Cultural Theory of Risk [15] relates consumers' perceived risk to cultural adherence and social learning. According to Wildavsky and Dake [15] the cultural theory of risk is used to "*predict and explain what kind of people will perceive which potential hazards to be how dangerous*". Hence, the variables of perceived risk are linked to the attitude of the consumers. Thus, to study the types of risks based on the cultural of Malaysian, consumers' perceived risks towards online attitude is included to the research framework.

Theory of Planned Behavior (TPB) was developed by Ajzen [16] and it is originated from the Theory of Reasoned Action (TRA). Generally, TPB is used to forecast a person's intention towards online shopping. TPB relates the conceptually of attitude, subjective norms and perceived behavioral control toward the behavior intentions of consumers. In this theory, attitude is determined by a

behavioral belief about performing a particular behavior and it is one of the three factors in TPB's model. TPB theory stated that customer's behavioral attitude will directly influence the intention of online shopping. Past researchers, such as Pavlou and Fygenson [17], examined consumer's adoption of e-commerce by applying TPB and they found that the TPB was able to predict attitude and behavioral intention of consumers. Thus, attitude and online shopping behavior are added to the framework of this research.

Generally, there are many types of perceived risk experiencing by consumers in online shopping. Online shoppers reported different types of fear when they do online shopping. The levels of fears are listed in Table 1 [18].

Table 1: Level of fear according to different type of risks when consumers doing online shopping

Rank	Type of risk	Observations
1	Financial risk	The highest level of fear of respondents is the chances of suffering a financial loss due to fraud of credit card.
2	Performance risk	The second level of fear is that the product performance is not as expected.
3	Time risk	Similar to performance risk, fear of consumers about the product doesn't perform as described and caused the longer time of returning and waiting processes for the product to be delivered.
4	Delivery risk	Fear of consumers about the delivery will not be performed on time or that the product is damaged during the process of delivery.
5	Privacy risk	Fear of consumers about the privacy of their personal data and credit card details which may be misused by the seller.
6	Psychological risk	Fear of consumers regarding the doubts of e-Transactions, especially when the product is expensive or urgently needed.
7	Social risk	The lowest level of fear goes to social risk. It is about the fear of fraud transactions which may cause their referent groups (family members of friends) to blame them for making a bad decision.

Review of past researches on consumers' perceived risk of online shopping (2003–2012) is presented in Table 2. This review showed that, among the six types of perceived risk, four risks - financial risk, product risk, convenience risk and non-delivery risk - were frequently used in the study of risks in electronic mediated environment. Therefore, these risks are proposed as independent variables in the conceptual framework of this study.

Table 2: Summary of Previous Researches (2003-2012) on Dimensions of Perceived Risks in Online Shopping

Dimensions of perceived risk Researchers	Product/ performance Risk	Social Risk	Convenience Risk/Time risk	Non- Delivery Risk	Privacy Risk	Financial Risk
Swinyard and Smith (2003)	√		√			√
Hanjun <i>et al.</i> (2004)	√	√	√			√
Naiyi (2004)	√			√	√	√
Forsythe <i>et al.</i> (2006)	√		√	√		√
Javadi <i>et al.</i> (2012)	√		√	√		√
Zhang <i>et al.</i> (2012)		√	√	√		

Product risk

Online purchasing is a non-store shopping, so it is difficult for consumers to examine quality of physical goods because they can only rely on limited information, sketches, visuals, graphics, and pictures shown on the computer screen. As a consequence, the purchased products may not function as they are claimed to be. Product risk is generally about a purchased product may fail to function as originally expected [19]. It is related to the product performance risk, which is a loss for customers when a brand or product does not perform as expected due to the shoppers' inability to accurately

evaluate the quality of the product online [20]. Several studies have shown that product or performance risk, or the fear of product not functioning or performing as expected is increasing in online environment [21]. In short, the incapability of touching, feeling, testing or trying the products before they are purchased are the primary concerns when purchasing online, and those concerns will increase the product or performance risk perceived [22].

Convenience risk

Convenience risk is about consumer perceptions of risks that the purchased product will take a lot of time and effort to repair and adjust before it can be used [23]. When consumers' perceived convenience risk is high, they feel that it is very troublesome for them to perform certain online purchasing behaviour.

Financial risk

Consumers may feel worry about the online security with respect to using their credit cards and disclosing personal information. So, even though customers order goods online, but majority of them prefer alternative method of payments, such as cash at delivery, bank account transfers and Pay Pal other than using their credit cards. In other situation, consumers also fear that certain e-commerce websites are not secured enough and need constant reassurance. Previous Studies indicated that fear of credit card fraud represents one of the most invoked concerns when buying online [22].

Non-delivery risk

Non-delivery risk is one of the biggest worried when customers decided to buy products online. Dan *et al.*, [24] defined non-delivery risk as the potential fail of delivery which caused by goods lost, goods damaged and they were sent to the wrong place after confirmation of online order. According to Naiyi [25], consumers are concerns with the delivery process, for examples the product may get damaged during transportation, delivered to a wrong address, or in some cases, delayed. According to Claudia [18], consumers fear about delivery will be delayed due to various circumstances, such as the delivery company won't deliver the purchased products within the time frame agreed with customers. The feeling of fear that the products may be damaged during handling and transporting them to the consumers is also part of non-delivery risk.

Consumer Attitude and Online Shopping Behaviour

Attitude in term of online shopping is defined as consumer's positive or negative feelings when they are about to make the purchasing decision [26]. Attitude of customer is frequently related to emotion and according to the model of attitude change and behavior (e.g., Fishbein and Ajzen, 1975, [27], consumer attitudes are affected by their purchasing intention. The relationship between intention and behavior is based on the assumption that consumers attempt to make rational decisions based on information available to them. Therefore, an individual's behavioral intention to perform or not to perform certain behavior is the immediate determinant of that person's actual behavior [28].

Mitchell [29] suggested that perceived risk is a measure of expected dissatisfaction with a buying decision, based on the purchase goals of the buyers, and therefore, it is a powerful index for explaining consumer behavior since consumers are more often motivated to minimize potential failure than to pursue purchasing success. The reason is because perceived risk will directly influence customer's attitude and perceptions. Barnes *et al.*, [30] stated that perceived risk reduces the willingness of consumers to buy goods over the internet. Specifically, previous research indicated that attitude and purchase intention is negatively influenced by the perceived risk associated with the purchase [31]. If perceived risk is high then customers will have negative attitude [30].

Attitude is predicted to have a direct significant impact on online shopping behavior based on the studies of Chai and Pavlou [32], and George [33]. Thus, for those who have a positive attitude about online shopping will drive them to purchase online. Previous researches indicated that attitude

towards online shopping is significant predictor of making online purchases [9] and purchasing behavior [9 and 33].

Online shopping behavior is a type of attitude which involve consumers browsing websites to search, select and purchase of goods and services, in fulfilling their needs and wants. It involves the reaction and choice of consumer decision making. Pavlou and Fygenon [17] stated that consumer intentions to use Internet as a shopping channel is a significant predictor of consumers' actual participation in online transactions. Generally, positive online shopping behaviour will lead to the successfulness of e-commerce transaction, such as online shopping.

3.0 Methodology

Review on the development of online shopping in Malaysia indicated that there is a need to study on how consumers' perceived risk and its effect on their attitude as well as the impact of consumers' attitude on their online shopping behavior. Generally, the conceptual model of this study was based on the integration of cultural theory or cultural theory of risk [15] and TPB [16]. In this study, perceived risk is independent variable, attitude (dependent variable/independent variable) and online shopping behavior (dependent variable). A questionnaire was used to measure the following variables of the study:

- Financial risk (three items), product risk (three items), and convenience risk (four items) were developed based on the work of Swinyard & Smith [34], Forsythe *et al.* [35] and Javadi *et al.* [36]. Three items of non-delivery risk was adapted from Forsythe *et al.* [35].
- Consumer attitude with three items used was adopted from George [33].
- Four items of Online Shopping Behavior used were adopted from the work of Karayanni [37] and Forsythe *et al.* [35].

All the questions were measured using five point Likert scales of 1= Strongly disagree, 2= Disagree, 3= Neither Agree Nor Disagree, 4=Agree, and 5= Strongly agree.

The population of this research is the online shopping consumers of a Malaysia's largest online marketplace for online shoppers. This online seller is ranked 1st in Top 30 Local Websites accessed by Malaysians. In addition, for the Top 30 Combined Websites (International and Local) accessed by Malaysians, this site was ranked 3rd after Facebook.com and Google.com.my. The result of this ranking was collected from 25.57 million unique browsers on websites in Malaysia as reported by Malaysian Digital Association (MDA) in February 2012.

In multivariate research, the sample size required should be 5 to 10 time of variables for 10% and 5% margin error [38]. In this study, the total number of questions is 20, thus a minimum of 200 questionnaires are needed for 5% margin error and 100 questionnaires are required for 10% margin error. Using convenience sampling procedure, 300 completed questionnaires were collected. The reason of using convenience sampling is because it is a method of selecting volunteering respondents by depending on their availability and willingness to fill-up the questionnaire. At the same time, it is easy and proper for the researchers to access the respondents through Facebook page of the online seller site. The researcher had used web-based survey by creating the questionnaires using Google Form at <https://docs.google.com/forms/d/122iVGBP9pA-Thh1VFveIFHZ0uDF3rvVZixcvsv-ZVw/formResponse>. The link of questionnaires was shared on the social media (Facebook) page of this site in order to find the right target of respondents. The reason of choosing social media is because currently the fan page of this site in Facebook is liked by 1,129,219 people. In addition, a filter question was used to confirm whether the respondents have the experience of online shopping at this site. In order to make sure the respondents are the online shopping consumers of this site, only respondents who are ever experience shopping at this site can proceed with the whole questionnaire. The data collected was kept automatically in Google spreadsheet and finally exported to Statistical Package for Social Science (SPSS) for the process of analysis.

4.0 Result and Analysis

For sampling adequacy, the values of Kaiser-Meyer-Olkin (KMO) for Perceived Risks, Attitude and Online Shopping Behavior were 0.726, 0.814 and 0.690 respectively (Table 3 and 4). The KMO measures of the sampling adequacy test and Bartlett's test of Sphericity were performed to confirm the suitability of the data for factor analysis. A high KMO value (close unity or > 0.6) and small p-value for the Bartlett's test ($p\text{-value} < 0.05$) were desired [38]. Since all KMO values were above 0.5 supported by Bartlett's test of Sphericity of 0.00, the factor analysis was then performed. Factor analysis is a process by which large clusters and grouping of data are replaced and represented by factors in the equation. It was applied as a data reduction or structure detection method, which can be used to identify the hidden dimensions or constructs which may or may not appear from direct analysis. The results of Total Variance Explained of Confirmatory Factor Analysis indicated that for perceived Risk, the cumulative percentage was 71.499% (Table 3). Four factors, namely product risk, financial, convenience and non-delivery risks were identified and all items in these risks were retained and accepted based on the results of component matrix with factor loading of more than 0.5.

Table 3: Rotated Factor Matrix of Customers' Perceived Risk (PR – Product Risk, CR – Convenience Risk, FR – Financial Risk and NR – Non-delivery risk) of Online Purchasing

Code	Variables	Factors			
PR1	I will get what I ordered through this site	-.087	.015	.871	.071
PR2	I will not receive malfunctioning merchandise from this site	-.055	-.010	.890	.041
PR3	It is easy to judge the quality of merchandise over this site	.226	.013	.836	.000
CR1	I can examine the product if I shop at this site	.785	-.004	.167	-.046
CR2	If I shop at this site, I can wait till the product arrives	.860	-.040	-.024	-.031
CR3	It is easy to cancel orders with this site	.858	-.096	-.023	-.038
CR4	I won't have problem in returning product if I shop at this site	.646	.038	-.066	-.338
FR1	I feel that my credit-card details won't be compromised and misused if I shop at this site	-.076	.186	.145	.770
FR2	I will not get overcharged if I shop online as this site has my credit-card info.	-.016	.022	.063	.871
FR3	I feel my personal information given for transaction to this site will not compromise to third party.	-.194	.103	-.092	.704
NR1	I will receive the product ordered through this site	.005	.849	-.025	.167
NR2	I prefer this site because of availability of reliable & well-equipped shipper.	-.030	.899	-.015	.050
NR3	Products purchased at this site will be timely delivered	-.071	.870	.057	.081
Total variation explained by these factors		71.499%			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.726			
Bartlett's Test of Sphericity:					
Approx. Chi-Square		D.F.		Significance	
1551.240		78		0.000	

For attitude, the cumulative percentage of the total variance explained was 69.470%, and all items were retained in one dimension, i.e. consumer attitude, with factor loading of >0.5 (Table 4). For online shopping behavior, only one dimension has been extracted with total variance explained of 53.890 (Table 4). All of its items were accepted based on the results of component matrix with factor loading >0.5 .

Further, the researchers performed reliability test for each dimension of perceived risk, attitude and online shopping behaviour. Cronbach's Alpha was often used for reliability coefficient assessing the consistency of the entire scale. Hair *et al.* [38,41] suggested that reliability estimated between 0.6 and 0.7 represent the lower limit of acceptability for reliability estimation. Cronbach's alpha value that is greater than 0.6 is considered as sufficient. In this study, the results of Cronbach's alpha values for all the dimensions are more than 0.7 (Product risk – 0.839; financial risk – 0.720; convenience risk –

0.812; non-delivery risk -0.854 ; attitude -0.777 ; and online shopping behaviour -0.722). Thus, construct of all the components used in this study are deemed reliable and valid for further analysis.

Table 4: Rotated Factor Matrix of Attitude (A) and Online Shopping Behavior (OSB)

Code	Variables	Factor	Code	Variables	Factor	
A1	Shopping at this site is easy	.781	OSB1	I shop at this site as I can shop in privacy like at home	0.732	
A2	Shopping at this site is fun and I enjoy it	.858	OSB2	I shop at this site because it provides me a broader selection of products.	0.853	
A3	I prefer to buy at this site because it provides me with quality of information	.688	OSB3	This site gives me better control on my expenses.	0.616	
			OSB4	Shopping at this site gives facility of easy price comparison.	0.716	
Total variation explained by this factor		69.470%		53.890%		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.814		0.690		
Barlett's Test of Sphericity:						
Approx. Chi-Square	D.F.	Significance		Approx. Chi-Square	D.F.	Significance
1679.654	78	0.000		243.268	6	0.000

To examine the effect of consumers' perceived risks on their attitude, multiple regressions were performed, and the result is presented in Table 5. Multiple regressions is a statistical technique to form a mathematical regression which primarily wanted to relate a dependent variable (Attitude) to more than one independent variables (consumers' perceived risk of online shopping). The result indicated that product risk ($\beta -0.161$, $t -3.005$, Sig. 0.002), financial risk ($\beta -0.141$, $t -2.524$, Sig. 0.012) and non-delivery risk ($\beta -0.110$, $t -2.035$, Sig. 0.043) negatively affect attitude of online consumers. However, convenience risk was found to have positive effect on the attitude of consumers ($\beta 0.304$, $t 5.577$, Sig. 0.000).

Table 5: Results of the effects of Perceived Risk (Product risk (P), Convenience risk (C), Financial risk (F), Non-delivery risk (N)] on Attitude (A)

Coefficients							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3.624	.288		12.593	.000		
P	-.141	.046	-.161	-3.055	.002	.988	1.012
C	.292	.052	.304	5.577	.000	.930	1.076
F	-.142	.056	-.141	-2.524	.012	.880	1.137
N	-.093	.045	-.110	-2.035	.043	.944	1.059
Dependent Variable: Attitude (A)							
F Statistics = 16.888							
R Square(R^2) = 0.186							

It was found that attitude of consumers positively affect their online shopping behaviour ($\beta 4.27$, $t -8.161$, Sig. 0.000). Result of linear regression, as shown in Table 6, indicated that consumers' online shopping behaviour was significantly and positively affected by their attitude towards online purchasing.

Table 6: Results on the effect of Attitude on Online shopping behaviour

Coefficients ^a							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.138	.200		10.684	.000		

NEWSB	.446	.055	.427	8.161	.000	1.000	1.000
a. Dependent Variable: Online shopping behavior							
F Statistic = 66.608							
R Square (R ²) = 0.183							

5.0 Discussions

Theoretically, this research has confirmed three important findings. Firstly, product risk, financial risk, and non-delivery are negatively affected consumers' attitude of online shopping. This finding is consistent with several authors who found that consumer shopping behavior on the Internet, attitude toward usage behavior and intention to adopt e-commerce were affected by perceived risk [39 and 40]. According to Bhatnagar *et al.*, [20], the likelihood of purchasing on the Internet decreases with increases in product risk and this view is supported by this research. The negative effects of perceived risk have also been found to have a negative impact on shoppers' attitudes towards online shopping [7 and 8]. Financial risk with highest beta coefficient (β) -0.141 has the strongest negative influence affecting consumer attitude. Thus, online sellers should put more effort on minimising financial risk in order to influence positive consumer attitude to do online shopping with them. The perceived financial risk could be reduced by protecting customers' spending pattern and personal information, avoiding misused of credit card details and eliminating overcharging price. In addition, product risk can be avoided by assuring the advertisers to sell quality products with clear pictures and description of the product. For non-delivery risk, it can be decreased by providing a place for online shopping customers to complain if they don't receive the delivery items on time and prompt action should be taken on it.

Secondly, convenience risk exerted positive effect on consumer attitude, which is consistent with the finding of Zhang, et.al [39]. The assumption made is that consumers may have a strong trust to the online seller site and therefore, they did not really concern on the issues of non-convenience aspect, such as handling of returned products and examining the quality of products featured in the site. The assumption is made based on the case of Kim and Prabhakar [41], who found that consumers' adoption of Internet banking is determined by a balance between trust and perceived risk.

Thirdly, this research has confirmed that positive affect of consumers' attitude on their online shopping behaviour. It shows that when a consumer formed a favourable attitude towards an object, for instance, positive attitude towards on line shopping, he or she tends to behave positively, for example, willingness to purchase online. This finding is consistent with the work of Chai and Pavlou [32], George [33], (Yang *et al.* [9] and Javadi, et.al [36]. Thus, individuals who have formed a favourable attitude towards online shopping are willing to commit in online purchase.

6.0 Conclusion

This study highlighted the common scenario in the study of consumers' perceived risk, attitude and online shopping behaviour. It seems that the negative effect of perceived risks on attitude of consumers is universal. In Malaysia online shopping context, it was confirmed that the negative effect of perceived risk influences the attitude of online shoppers. However, it was noted that not all risks, for example convenience risk, will negatively influence consumer attitude. It means that when consumers trust an online seller, they may accept issues related to return of purchased product, and they will execute some degree of tolerance in term of time taken to deliver the product. To validate the positive effect of convenience risk, it is suggested for future research to expand this study to cover more online sellers in Malaysia. Researchers may consider the inclusion of more dimensions of perceived risk, such as psychological, privacy and social risks, to examine whether or not they can influence attitude and online shopping behaviour of consumers.

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