

STRUCTURAL RELATIONSHIPS BETWEEN PERCEIVED RISK AND CONSUMERS UNWILLINGNESS TO BUY HOME APPLIANCES ONLINE WITH MODERATION OF ONLINE CONSUMER REVIEWS

Syarafina Ibrahim¹, Norazah Mohd Suki^{2*} and Amran Harun³

^{1,3} *School of Business & Economics, Universiti Malaysia Sabah, Malaysia*

² *Labuan School of International Business & Finance, Universiti Malaysia Sabah, Labuan International Campus, Malaysia*

*Corresponding author: azahsuki@yahoo.com

ABSTRACT

This study aims to examine the effect of perceived risk factors (i.e. perceived performance risk, financial risk, time-loss risk, psychological risk and source risk) on consumers' unwillingness to buy home appliances online. The moderation of online consumer reviews with the relationship between perceived risk and consumers' unwillingness to buy home appliances online is also investigated. Results via the Structural Equation Modelling (SEM) technique revealed that perceived performance risk influences consumers' likelihood of not buying home appliances online, as the consumers are themselves unable to touch, see and hear the product. Online consumer reviews have also been found to moderate this relationship. The present study provides important practical contributions that allow retailers and internet marketers to understand consumers' perceptions and behaviours regarding consumer risk perception and to determine which type of risk is most important to address in order to increase the consumers' likelihood of buying home appliances online. This paper also presents a direction for future research.

Keywords: Consumer behaviour, perceived risk, online shopping, Structural Equation Modelling

INTRODUCTION

Word of mouth (WOM) has been found to be a consumer risk reliever, according to Roselius (1971). In the context of online shopping, WOM is known as electronic word-of-mouth (eWOM) and is directly related to online consumer reviews, which include positive and negative statements made by consumers about a product for sale in internet shopping malls. Consumers make decisions to shop for products via the internet after reading online product reviews that contain graphical and textual elements as well as ratings, text-rating congruence, source, number of "likes," and the overall number of positive and negative reviews (Benedicktus, Brady, Darke, & Voorhees, 2010; Pan & Zhang, 2011;

Schlosser, 2011). Nielson (2010) reported that online reviews are very important for consumers and help them to make online purchase decisions, with 57% of 27,000 internet-user respondents seeking out online reviews before purchasing a product via the internet. On average, online shoppers spend half-an-hour to an hour reading such reviews.

As internet retailing is becoming more prevalent, it is important to understand consumer online purchasing behaviour. While the influencing factors are important to understanding consumer behaviour, hindering factors are also vital to understanding such behaviour. Therefore, the importance of identifying and analysing factors that could hinder consumers' willingness to make an online purchase is imperative. This study aims to examine the effect of perceived risk factors (i.e. perceived performance risk, financial risk, time-loss risk, psychological risk and source risk) on consumers' unwillingness to buy home appliances online. The moderation of online consumer reviews and the relationship between perceived risk and consumers' unwillingness to buy home appliances online are also investigated.

This paper is structured as follows: A review of related literature; a description of the methodology used for the sample selection and the data collection; a report on the data analysis and an examination of the empirical results; and conclusions and recommendations for future research.

LITERATURE REVIEW

Risk is related to consumers' perception of the insecurity and the significance of participating in an activity (Dowling & Staelin, 1994). Consumers evaluate product purchases based on both the long-term consequences of the purchase and the immediate benefits, which influence their purchase intention (e.g., Grewal, Gotlieb, & Marmorstein, 1994; Sweeney, Soutar, & Johnson, 1999).

Perceived risk related to shopping includes (i) financial risk, which is related to the potential monetary loss and perception of insecurity regarding online credit card usage (Forsythe, Liu, Shannon, & Gardner, 2006; Lim, 2003); (ii) performance risk, which is related to the possibility that a purchased product fails to provide the desired benefits or does not function properly (Crespo, del Bosque, & de los Salmenes Sanchez, 2009; Grewal et al., 1994; Lim, 2003); (iii) physical risk, which is related to the possibility of physical injury and damaged health caused by a purchase (Hassan, Kunz, Pearson, & Mohamed, 2006; Lim, 2003); (iv) social risk, which is related to a consumer's concern about how other people perceive their shopping behaviour and about the potential loss of social status (Crespo et al., 2009; Lim, 2003); (v) psychological risk, which is related to the

mental stress a consumer suffers due to shopping behaviour (Crespo et al., 2009; Hassan et al., 2006; Lim, 2003); (vi) time/convenience risk, which is related to the waiting time for the receipt of purchases and the potential loss of time due to incorrect purchase decisions and inconvenience during the purchase process (Crespo et al., 2009; Forsythe et al., 2006; Lim, 2003); and (vii) source risk, which is related to the possibility that the consumer may buy products from a business that is unreliable (Cases, 2003; Lim, 2003).

Perceived risk is an important determinant in consumers' behaviour towards online purchasing. For instance, Featherman, Miyazaki and Sprott (2010), and Huang and Oppewal (2006) found that perceived risk affects online shopping preferences and that it also reduces consumers' intention or willingness to buy through the internet (Huang & Oppewal, 2006; Tian & Ren, 2009; Park, Han, & Park, 2013). Online consumer perceived risk is a major obstacle for online purchasing (Tian & Ren, 2009). Previous research has found that perceived risk has a negative effect on consumers' purchase intention (Ahasanul, Ali, & Shameem, 2009; Akram, 2008; Al-Mowalad & Lennora, 2012; Ali, Farhad, & Nooshin, 2010; Tian & Ren, 2009).

Performance risk and perceived financial risk have a greater influence on consumer online purchase intention than the other types of perceived risk (Akram, 2008; Chang, & Tseng, 2013; Forsythe & Shi, 2003; Forsythe et al., 2006; Kukar-Kinney & Close, 2010; Tian & Ren, 2009). Performance, psychological, financial, and online payment risks jointly have a significant negative influence on purchase intention (Hong, & Cha, 2013). Consumers who perceive a high risk when purchasing products on the internet are unlikely to purchase e-customised products online (Park et al., 2013).

Thus, it is hypothesised that:

- H1a: Perceived financial risk is positively related to consumer unwillingness to purchase home appliances online.
- H1b: Perceived performance risk is positively related to unwillingness to purchase home appliances online.
- H1c: Perceived time-loss risk is positively related to unwillingness to purchase home appliances online.
- H1d: Perceived psychological risk is positively related to unwillingness to purchase home appliances online.

H1e: Perceived source risk is positively related to unwillingness to purchase home appliances online.

ONLINE CONSUMER REVIEWS

Online consumer reviews, one of the risk reduction factors, are the positive and/or negative statements made by consumers about a product for sale online that affect a consumers' purchase intention (Bailey, 2005; Chu & Li, 2008; Jiménez & Mendoza, 2013; Park & Lee, 2008; Wu, Wu, Sun, & Yang, 2013). Hansen, Jensen, and Solgaard (2004) suggested that perceived risk can be reduced when consumers communicate with other consumers to get opinions on particular products before buying online. Wu et al. (2013) and Zhu and Zhang (2010) noted that consumers seek online consumer reviews for less popular online products in order to obtain more information about these products before making the purchasing decision. When the product's overall reviews are positive, potential consumers are likely to perceive that the product is purchasable. In contrast, when the overall reviews about the product are negative, consumers may reject or dislike the product. Accordingly, the study posited that online consumer reviews moderate the relationship between perceived risk and unwillingness to purchase home appliances online.

The proposed research framework is illustrated in Figure 1.

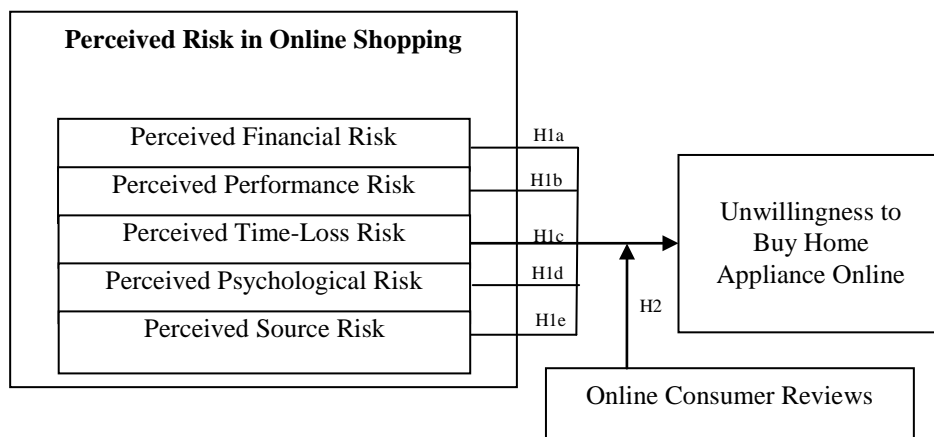


Figure 1. Proposed research framework

METHODOLOGY

The completed and usable close-ended questionnaire was conducted from 1 June 2012 to 30 June 2012 and was collected from 192 of 250 respondents (a response rate of 76.8%) located in Kota Kinabalu, Sabah, Malaysia. It used non-probability sampling procedures via a convenience sampling method. This sample size is reasonable, as Hair, Black, Babin, Anderson and Tatham (2010) suggested that the minimum sample size required for seven or less latent constructs, when each construct has more than three items, is 150 samples. The questionnaire consists of three parts: demographic profile, purchase experience, and the unwillingness to buy home appliances online and perceived risk. The measurement of items for unwillingness to purchase was adopted from Akram (2008) with a modification to the sentence structure from 'willing to purchase' to 'unwilling to purchase'. The remainder of the questionnaire items were adapted from the following sources: perceived risk factor, which consists of perceived financial risk, perceived performance risk, perceived time-loss risk, perceived psychological risk and perceived source risk (Akram, 2008; Naiyi, 2004), and online consumer reviews (Park & Lee, 2008). These items, as presented in Appendix 1, were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Data were analysed using the Structural Equation Modelling (SEM) technique via Analysis of Moment Structures (AMOS) 5.0 computer program, using the maximum likelihood method of estimation to estimate the proposed hypothesised relationships.

DATA ANALYSIS

Table 1 presents the socio-demographic profile of respondents. Of 192 total respondents, three-quarters were female and the remaining participants were male; the median age was 31 years; 49% of the respondents held Bachelor's Degrees; and half of the respondents spent two to five hours on the internet daily.

Table 1
Socio-demographic profile of respondents

Variable	Frequency	Percentage
Gender		
• Male	64	33.3
• Female	128	66.7
Age		
• 25 and below	31	16.1
• 26 to 30	55	28.7
• 31 to 35	58	30.2
• 36 to 40	28	14.6
• 41 to 45	15	7.8
• 46 and above	5	2.6
Education Level		
• Sijil Pelajaran Malaysia (Malaysian Certificate of Education)	3	1.6
• Sijil Tinggi Pelajaran Malaysia (Malaysian Higher Certificate of Education)	7	3.6
• Diploma	13	6.8
• Bachelor's degree	94	49.0
• Master's degree	67	34.9
• PhD	8	4.2
Occupation		
• Professional	54	28.1
• Top Management	13	6.8
• Executive	48	25.0
• Clerical	11	5.7
• Unemployed	7	3.6
• Others	59	30.7
Internet Time Spent		
• Less than 1 Hour	12	6.3
• 2 to 5 Hours	98	51.0
• 6 to 9 Hours	57	29.7
• More than 10 Hours	25	13.0

STRUCTURAL EQUATION MODELLING

SEM is performed via a two-step SEM approach (i.e. measurement model and structural model). The measurement model demonstrates the relationship between response items and their underlying latent constructs. The measurement model was analysed using Confirmatory Factor Analysis (CFA) to assess the meaningfulness of its items in terms of the construct validity and reliability and to provide support for the issue of dimensionality. The standardised factor loadings, composite reliability, average variance extracted and Cronbach's alpha are summarised in Table 2. Several items were deleted from the model, as the standardised factor loading is less than 0.60 (i.e. 'Traditional stores offer more discounts than online stores - FIN4'; 'Online stores offer discount prices, but the total cost is not lower - FIN5'; 'The product performance is not consistent with the expectation - PERF4'; 'It is difficult to return when the product does not meet satisfaction - PERF5'; 'I would have to spend too much time if I want to return products purchased online - TL1'; 'I am afraid that products purchased from online vendors will not be delivered on time - TL2'; 'I am concerned about the time lost between ordering and receiving products bought online - TL3'; 'It is difficult to get support when the product fails - SOU4'; and 'The web store could suddenly shut down without warning - SOU5'.

Construct reliability was measured via composite reliability (CR) and Cronbach's alpha to estimate the consistency of the construct. The values for composite reliability (CR) and Cronbach's alpha in Table 2 exceeded the minimum threshold value of 0.70, signifying high reliability of the constructs. Next, convergent validity was verified through average variance extracted (AVE), measuring the overall amount of variance in the indicators as truly representative of the latent construct. The AVE values ranging from 0.660 to 0.872 implied that convergent validity was achieved due to the fact all items in the measurement model were statistically significant.

Table 2
Measurement Model Analysis

Items		Std. Loadings	Composite Reliability	Average Variance Extracted	Cronbach's Alpha
Financial Risk			0.832	0.628	0.817
• I am concerned that my financial records might not be adequately protected if I shop online.	FIN1	0.83			
• It is not safe to give my credit card number when I order online.	FIN2	0.90			
• I am concerned about the ultimate price of the on-line product because there might be hidden costs.	FIN3	0.62			
Performance Risk			0.885	0.722	0.870
• It is difficult to determine the characteristics of the products such as quality, size, colour, and style by just looking at pictures on the web.	PERF1	0.90			
• It is difficult to feel, try and/or experience the product prior to purchase during online shopping.	PERF2	0.93			
• I am concerned that the product delivered may not be exactly as it appeared when displayed on the computer screen.	PERF3	0.70			
Time-Loss Risk			0.825	0.704	0.811
• I would have to spend a lot of time if I want to return online purchased products.	TL4	0.75			
• I am afraid that products purchased from online vendors will not be delivered on time.	TL5	0.92			

(continue on next page)

Table 2 (continued)

Items		Std. Loadings	Composite Reliability	Average Variance Extracted	Cronbach's Alpha
Psychological Risk			0.850	0.660	0.843
• The thought of online shopping makes me feel uncomfortable.	PSY1	0.95			
• The thought of online shopping causes me to experience unnecessary tension.	PSY2	0.84			
• Online shopping will lead to too much social isolation.	PSY3	0.61			
Source Risk			0.853	0.660	0.835
• It is difficult to determine the reliability and expertise of some online companies.	SOU1	0.89			
• It is difficult to determine the reputation of some online companies.	SOU2	0.92			
• I am concerned about the trustworthiness of some online companies.	SOU3	0.60			

Discriminant validity, or the extent to which one construct is different from other constructs, is checked by comparing the shared variance among variables, with the square root of AVE by each construct (Fornell & Larcker, 1981). As presented in Table 3, the shared variances among factors are lower than the square root of AVE. Hence, discriminant validity was achieved.

Table 3
Discriminant validity of model constructs

	1	2	3	4	5
1. Financial Risk	0.792				
2. Performance Risk	0.230	0.849			
3. Time-Loss Risk	0.448	0.252	0.839		
4. Psychological Risk	0.413	0.145	0.757	0.812	
5. Source Risk	0.260	0.324	0.425	0.436	0.812

Notes: Diagonals represent the square root of the AVE.

The structural model was tested after all constructs in the measurement model were validated and satisfactory fit was achieved. The structural model aims to specify which latent constructs directly or indirectly influence the values of other latent constructs in the model. The latent constructs are assembled into the structural model based on the hypotheses in the interrelationships among them. Then, the multiple relationships among the constructs were analysed simultaneously to test the hypotheses. The structural model results depicted in Figure 2 indicated a good fit of the model.

RELATIONSHIP BETWEEN PERCEIVED RISK FACTORS AND CONSUMERS' UNWILLINGNESS TO BUY HOME APPLIANCES ONLINE

The analytical results of the estimated path coefficients for the structural model in Table 4 and Figure 2 indicate that perceived performance risk has the highest standardised beta coefficient value and is positively and significantly associated with consumers' unwillingness to buy home appliances online ($\beta_{1b} = 0.245$; $p < 0.01$); thus, H1b is supported. However, the results reveal that financial risk ($\beta_{1a} = -0.148$; $p > 0.05$) and time-loss risk ($\beta_{1c} = 0.207$; $p > 0.05$) have no impact on consumers' unwillingness to buy home appliances online. Hence, neither H1a nor H1c is supported. Next, a similar insignificant finding also applies to the psychological risk ($\beta_{1d} = 0.033$; $p > 0.05$) and source risk ($\beta_{1e} = 0.026$; $p > 0.05$) dimensions, thus rejecting H1d and H1e. $R^2 = 0.712$, implying that consumers' unwillingness to buy home appliances online is influenced by perceived risk components, such as perceived performance risk, financial risk, time-loss risk, psychological risk and source risk by 71.2%.

Moderating Effects of Online Consumer Reviews between Perceived Risk Factors and Consumers' Unwillingness to Buy Home Appliances Online

A multi-group comparison test via SEM was performed to test whether online consumer reviews moderate the relationship between perceived risk factors and consumers' unwillingness to buy home appliances online. Table 5 shows that a significant difference exists between the low online review and high online review ($\Delta\chi^2/\Delta df = 19.176/9$, $p < 0.05$), thus supporting Hypothesis 2. Hence, the results established that online consumer reviews for both groups of low online reviews and high online reviews significantly moderated the relationship between perceived risk factors and consumers' unwillingness to buy home appliances online.

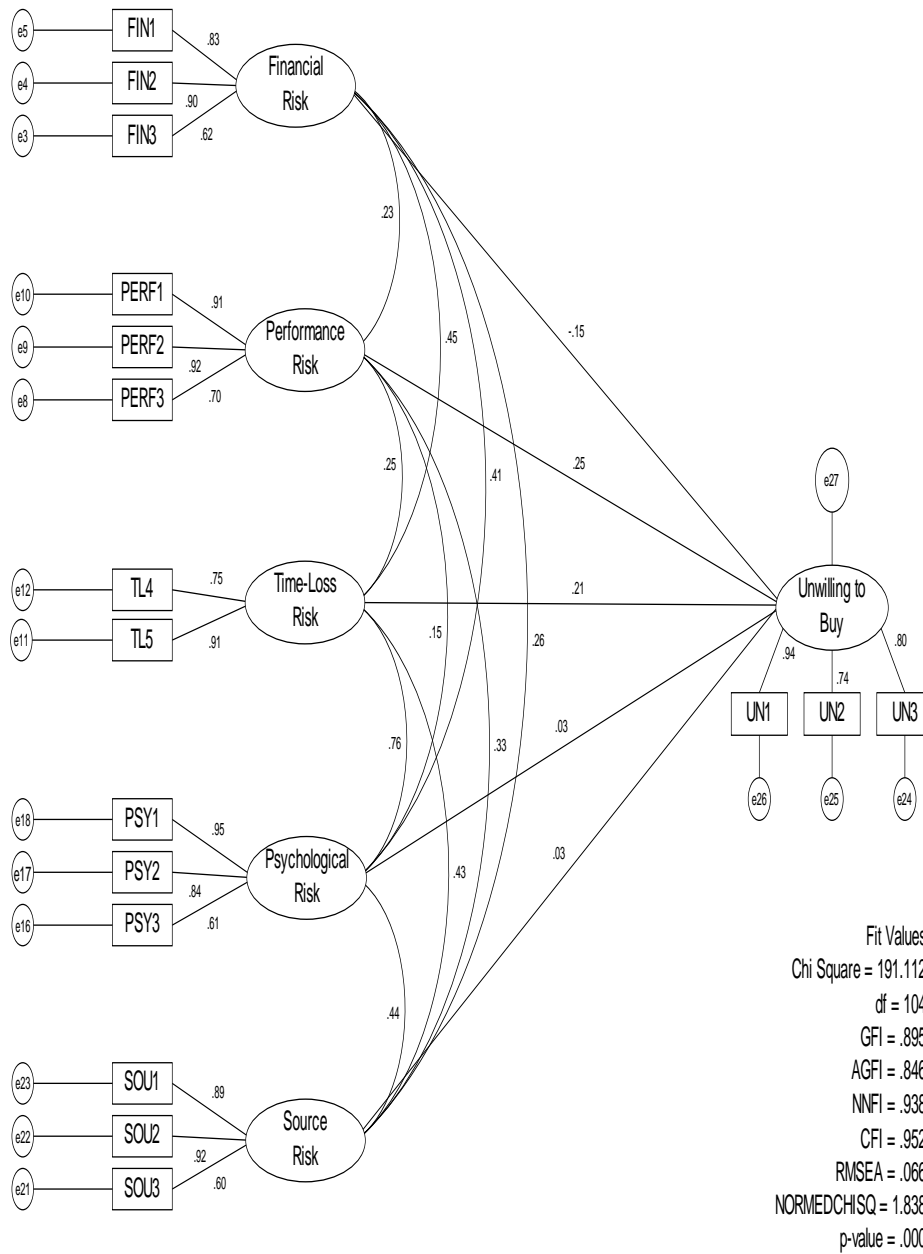


Figure 2. Hypothesised Structural Model

Table 4
Result of hypothesised structural model

Hypotheses				Estimate	S. E.	C. R.	p	Results
H1a	Financial Risk	→	Unwilling to Buy	-0.148	0.119	-1.617	0.106	Not Supported
H1b	Performance Risk	→	Unwilling to Buy	0.245	0.155	2.840	0.005*	Supported
H1c	Time-Loss Risk	→	Unwilling to Buy	0.207	0.132	1.432	0.152	Not Supported
H1d	Psychological Risk	→	Unwilling to Buy	0.033	0.174	0.247	0.805	Not Supported
H1e	Source Risk	→	Unwilling to Buy	0.026	0.156	0.291	0.771	Not Supported

*p-value < 0.01

Table 5
Result of the effects of the moderating variables

Hypothesis	Constrained Model	Unconstrained Model	Chi-square Difference	Result on Moderation	Result on Hypothesis
Perceived Risk → Unwillingness to Buy Home Appliances Online	388.496 (df = 217)	369.320 (df = 208)	19.176 (df = 9)	Significant	Supported

DISCUSSION

This study examined the effect of perceived risk factors (i.e. perceived performance risk, financial risk, time-loss risk, psychological risk and source risk) on consumers' unwillingness to buy home appliances online. The results via the Structural Equation Modelling (SEM) technique revealed that the influence of perceived risk on its significances were dissimilar depending on the dimensions of the perceived risk. Consumers' consider perceived performance risk as the most important factor contributing to their unwillingness to buy home appliances via the internet – more so than the other components of perceived risk, such as financial risk, time-loss risk, psychological risk and source risk – because the consumers are unable to touch, see and hear the product themselves. This finding is in agreement with previous studies that found that perceived performance risk in terms of product characteristics such as quality, size, colour and style was consistently determined to be the most significant predictor of online purchase

behaviour (Chang, & Tseng, 2013; Forsythe & Shi, 2003; Forsythe et al., 2006; Kukar-Kinney & Close, 2010; Lim, 2003; Tian & Ren, 2009).

Further investigation revealed that perceived financial risk had an insignificant positive effect on the consumers' unwillingness to buy home appliances online. Previous findings indicate that Malaysian internet shoppers did not perceive a higher level of financial loss in their purchase decisions. Accordingly, perceived financial risk was found to have negative effect on online purchase intention (Akram, 2008; Chang, & Tseng, 2013; Forsythe & Shi, 2003; Forsythe et al., 2006; Hong & Cha, 2013; Kukar-Kinney & Close, 2010; Tian & Ren, 2009). However, Ko, Jung, Kim and Shim (2004) found that American internet users perceived a higher level of financial risk, while Korean internet users perceived higher levels of social risk.

Next, the analytical results demonstrate that perceived time-loss risk was found to not have a significantly positive relationship with consumers' unwillingness to buy home appliances online. Time-loss risk was measured by time spent ordering, receiving, and returning an unsatisfactory product. Ordering time referred to the transfer of information during online shopping, which was usually too slow. Furthermore, ordering time also referred to the complexity and inconvenience of the online shopping activity. Meanwhile, receiving and returning time referred to the delay in receiving products and the time spent returning unsatisfactory products. This finding is in line with Akram (2008) and Tian and Ren (2009) who show that consumers are not too concerned about the delay and time loss involved in online shopping. Forsythe and Shi (2003) found that some online shoppers may hesitate to buy via the internet due to concerns about inconvenience or delays in receiving products.

According to the empirical results of this study, insignificant findings also appear for perceived psychological risks towards unwillingness to buy home appliances online, which may be due to the fact that psychological risk does not positively affect consumers' psychology. For example, approximately 51% of the respondents spent only 2 to 5 hours on the internet daily, which is considered to be low or moderate. Thus, the minimum time spent daily on the internet did not lead to consumers' stress, tension and social isolation. Therefore, psychological risk was not significant enough to positively affect consumer's online purchase decisions. This result is in line with Forsythe and Shi (2003)'s findings, but contradicts those of Akram (2008), Hong and Cha (2013), and Park et al. (2013).

The last dimension of perceived risk, perceived source risk, also did not positively influence unwillingness to buy home appliances online. Although Lim (2003) suggests that consumers dislike dealing with unknown vendors and perceive a high risk in unreputable businesses, this finding is in agreement with

Akram (2008) whereby internet shoppers can easily verify the online vendors. Finally, the moderation of online consumer reviews with the relationship between perceived risk and consumers' unwillingness to buy home appliances online was investigated. Online consumer reviews have been found to moderate the relationship between perceived risk and consumers' unwillingness to buy home appliances online. Consumers view online reviews as a way to reduce their perceived risk. Jiménez & Mendoza (2013) note that more credible reviews lead to higher purchase intentions whereby consumers refer to credible online reviews when the reviews contain detailed information about the product and can assess the level of reviewer agreement based on the reviews. The positive and negative reviews of products sold online will be used as measuring tools for them to measure the level of risk when buying home appliances online.

CONCLUSION AND RECOMMENDATIONS

Perceived performance risk was determined to be the most significant risk dimension that affects consumers' unwillingness to buy home appliances online, surpassing the other components of perceived risk such as financial risk, time-loss risk, psychological risk and source risk. Consumers' risk perception differs between products. Home appliance products are perceived as higher risk, as consumers are unable to touch, see or hear the product themselves. Depending on the type of product, some products are perceived as high risk, while others are perceived as low risk (Cao & Mokhtarian, 2005). Buying through the internet leads to higher risk perception as online buyers are unable to use their senses to touch, see, hear, smell and taste. Furthermore, consumers were concerned that the products they received were not the same as those that were advertised online; thus, they perceived that buying online carries a high performance risk.

Online consumer reviews were also found to significantly moderate the positive relationship between perceived risk and consumers' unwillingness to buy home appliances online. Consumer reviews and feedback are important measurement tools for both internet shoppers and internet retailers and are also useful for the consumer. Therefore, internet marketers and retailers should use consumer reviews and feedback to shape their purchase decisions to reduce their risk perception through the provision of guarantees, warranties and incentives. Meanwhile, the responsible authority (such as the government) should also play an important role in reducing consumers' risk perception by providing better regulation and law enforcement related to online selling and buying activities. For instance, better regulation should be enforced to protect the rights of online consumers who have been cheated in online sales and purchases.

This study R^2 is 71.2%, and an investigation was performed on consumer behaviour towards purchasing home appliances online. Hence, this approach limits the generalisability of the findings to other products. Future studies could expand the area of investigation, such as moderating the role of consumers' cultural backgrounds, family status and education. In further research, it would be important to enlarge the sample size and explore different geographical areas. However, the present study has contributed to the understanding of consumers' behaviour in online purchasing in the context of the Malaysian consumer perspective. The likelihood of making an online purchase was determined based on the perceived risk factors as suggested by the perceived risk theory. Findings from this study suggested that performance risk was the most important risk factor that influenced Malaysian consumers' unwillingness to buy home appliances online.

These findings could have implications for the internet retailing industry in Malaysia. Specifically, retailers and internet marketers could better understand consumer perception and behaviour. They could also become better aware of consumer risk perception and could determine which type of risk is most important for increasing consumers' purchase likelihood. This knowledge will help retailers and internet marketers develop and improve their reliability and believability in order to gain consumer confidence in shopping online. Moreover, internet retailers could take several actions to improve internet marketing in order to meet customers' needs and expectations. Furthermore, the findings of this study also have implications for the local authorities to provide better regulations to protect consumer's rights, specifically pertaining to internet transactions. Such implications are important, as electronic commerce via internet retailing in Malaysia has a very promising future.

APPENDIX

Measurement of Instruments

Purchase Behaviour

- I will not buy home appliances online.
- I would not recommend my friends to buy home appliances through online.
- I will not buy home appliances through online if I need the products that I will buy.

Perceived Financial Risk

- I am concerned that my financial records might not be adequately protected if I shop online.
- It is not safe to give my credit card number when I order online.
- I am concerned about the ultimate price of the on-line product because there might be hidden costs.
- Traditional stores offer more discount than online store.
- Online stores offer discount price but the total cost is not lower.

Perceived Performance Risk

- It is difficult to determine the characteristics of the products such as quality, size, colour, and style by just looking at pictures on the web.
- It is difficult to feel, try or/and experience the product prior to purchase during online shopping.
- I am concerned that the product delivered may not be exactly as it appeared when displayed on the computer screen.
- The product performance is not consistent with the expectation.
- It is difficult to return when the product is not satisfied.

Perceived Time-Loss Risk

- I would have to spend much time if I want to return online purchased products.
- I am afraid that products purchased from online vendors will not be delivered on time.

- I am concerned for the time lost between ordering and receiving products bought online.
- The process of online shopping is complex.
- Information transformation is too slow during online shopping.

Perceived Psychological Risk

- The thought of online shopping makes me feel uncomfortable.
- The thought of online shopping causes me to experience unnecessary tension.
- Online shopping will lead to too much social isolation.

Perceived Source Risk

- It is difficult to determine the reliability and expertise of some online companies.
- It is difficult to determine the reputation of some online companies.
- I am concerned about the trustworthiness of some online companies.
- Web store could disappear after running business in short time.
- It is difficult to get support when the product fails.

Online Consumer Reviews

- If I buy a product online, I always read reviews that are presented on the website.
- If I buy a product online, the reviews presented on the website are helpful for my decision making.
- If I buy a product online, the reviews presented on the website make me confident in purchasing the product.
- If I don't read the reviews presented in the website when I buy a product online, I worry about my decision.

REFERENCES

- Ahasanul, H., Ali, K., & Shameem, A. M. (2009). Factors determinate customer shopping behavior through Internet: The Malaysian case. *Australian Journal of Basic and Applied Sciences*, 3(4), 3452–3463.
- Akram, M. S. (2008). How perceived risk affects online purchase intention: Consumer's perspective. Unpublished doctoral dissertation, Universite Paul Cézanne, France.
- Ali, H. A., Farhad, G., & Nooshin, G. T. (2010). A study of the role of perceived risk and user characteristics in Internet purchase intention. *World Academy of Science*, 66, 43–47.
- Al-Mowalad, A., & Lennora, P. (2012). Factors that influence Saudi consumers behavior to make online purchase. Paper presented at the International Conference on Management, Behavioral Sciences and Economics Issues.
- Atchariyachanvanich, K., & Okada, H. (2007). How consumer lifestyle affect purchasing behavior: Evidence from Internet shopping in Japan. *Journal of Entrepreneurship Research*, 2(2), 63–78.
- Bailey, A. A. (2005). Consumer awareness and use of product review websites. *Journal of Interactive Marketing*, 6(1), 1–16.
- Benedicktus, R. L., Brady, M. K., Darke, P. R., & Voorhees, C. M. (2010). Conveying trustworthiness to online consumers: Reactions to consensus, physical store presence, brand familiarity, and generalized suspicion. *Journal of Retailing*, 86(4), 322–335.
- Cao, X., Mokhtarian, P. L. (2005). The intended and actual adoption of online purchasing: A brief review of recent literature. Unpublished doctoral PhD diss., University of California, Davis, C.A.
- Cases, A. (2003). Perceived risk and risk-reduction strategies in Internet shopping. *International Review of Retail, Distribution & Consumer Research*, 12(4), 375–394.
- Chang, E. C., & Tseng, Y. F. (2013). Research note: E-store image, perceived value and perceived risk. *Journal of Business Research*, 66(2013), 864–870.
- Chu, K. K., & Li, C. H. (2008). A study of the effect of risk-reduction strategies on purchase intentions in online shopping. *International Journal of Electronic Business Management*, 6(4), 213–226.
- Crespo, A. H., del Bosque, I. R., & de los Salmones Sanchez, M. M. G. (2009). The influence of perceived risk on Internet shopping behavior: A multidimensional perspective. *Journal of Risk Research*, 12(2), 259–277.
- Doolin, B., Dillon, S., Thompson, F., & Corner, J. (2002). Perceived risk and the Internet shopping experience in online purchasing behavior. Auckland University of Technology, Hamilton, New Zealand.
- Dowling, G. R., & Staelin, R. (1994). A model of perceived risk and intended risk-handling activity. *Journal of Consumer Research*, 21(1), 119–134.
- Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: A perceived risk facets perspective. *International Journal of Human-Computer Studies*, 59(4), 451–474.
- Forsythe, S. M., & Shi, B. (2003). Consumer patronage and risk perceptions in Internet shopping. *Journal of Business Research*, 56, 867–875.

- Forsythe, S., Liu, C., Shannon, D., & Gardner, L. C. (2006). Development of a scale to measure the perceived benefits and risks of online shopping. *Journal of Interactive Marketing, 20*(2), 55–75.
- Featherman, M. S., Miyazaki, A. D., & Sprott, D. E. (2010). Reducing online privacy risk to facilitate e-service adoption: The influence of perceived ease of use and corporate credibility. *Journal of Services Marketing, 24*(3), 219–229.
- Grewal, D., Gotlieb, J., & Marmorstein, H. (1994). The moderating effects of message framing and source credibility on the price-perceived risk relationship. *Journal of Consumer Research, 21*(1), 145–53.
- Hair, J. F., Black, B., Babin, B., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data analysis: A global perspective*. New Jersey: Pearson Education Inc.
- Hansen, T., Jensen, J. M., & Solgaard, H. S. (2004). Predicting online grocery buying intention: A comparison of the theory of reasoned action and the theory of planned behavior. *International Journal of Information Management, 24*, 539–550.
- Hassan, A. M., Kunz, M. B., Pearson, A. W., & Mohamed, F. A. (2006). Conceptualization and measurement of perceived risk in online shopping. *Marketing Management Journal, 16*(1), 138–147.
- Heijden, H. V. D., Verhagen, T., & Creemers, M. (2003). Understanding online purchase intentions: Contributions from technology and trust perspectives. *European Journal of Information Systems, 12*, 41–48.
- Hong, I. B., & Cha, H. S. (2013). The mediating role of consumer trust in an online merchant in predicting purchase intention. *International Journal of Information Management*. doi: <http://dx.doi.org/10.1016/j.ijinfomgt.2013.08.007>
- Huang, Y., & Oppewal, H. (2006). Why consumers hesitate to shop online: An experimental choice analysis of grocery shopping and the role of delivery fees. *International Journal of Retail and Distribution Management, 34*(4), 334–353.
- Jiménez, F. R., & Mendoza, N. A. (2013). Too popular to ignore: The influence of online reviews on purchase intentions of search and experience products. *Journal of Interactive Marketing, 27*, 226–235.
- Jarvenpaa, S. L., Tractinsky, N., & Vitale, M. (2000). Consumer trust in an Internet store. *Information Technology and Management, 1*(1&2), 45–71.
- Ko, H., Jung, J., Kim, J. Y., & Shim, S. W. (2004). Cross-cultural differences in perceived risk of online shopping. *Journal of Interactive Advertising, 4*(2), 20–29.
- Kukar-Kinney, M., & Close, A. G. (2010). The determinants of consumers' online shopping cart abandonment. *Journal of the Academy of Marketing Science, 38*, 240–250.
- Lim, N. (2003). Consumers' perceived risk: Sources versus consequences. *Electronic Commerce Research and Applications, 2*, 216–228.
- Naiyi, Y. E. (2004). Dimensions of consumer's perceived risk in online shopping. *Journal of Electronic Science and Technology of China, 2*(3), 177–182.
- Nielson. (2010). *Global trends in online shopping*. A Nielson Global Consumer Report. <http://fi.nielsen.com/site/documents/Q12010GOS-OnlineShoppingTrends-FINALCLIENTREPORT-June2010.pdf>
- Pan, Y., & Zhang, J. Q. (2011). Born unequal: A study of the helpfulness of user-generated product reviews. *Journal of Retailing, 87*(4), 598–612.

- Park, D. H., & Lee, J. (2008). eWOM overload and its effect on consumer behavioral intention depending on consumer involvement. *Electronic Commerce Research and Applications*, 7, 386–398.
- Park, J. K., Han, H. J., & Park, J. H. (2013). Psychological antecedents and risk on attitudes toward e-customization. *Journal of Business Research*, 66, 2552–2559.
- Roselius, T. (1971). Consumer rankings of risk reduction methods. *Journal of Marketing*, 35, 56–61.
- Schlosser, A. E. (2011). Can including pros and cons increase the helpfulness and persuasiveness of online reviews? The interactive effects of ratings and arguments. *Journal of Consumer Psychology*, 21(3), 226–239.
- Shim, S., Eastlick, M. A., Lotz, S., & Warrington, P. (2001). An online pre-purchase intentions model: The role of intention to search. *Journal of Retailing*, 77, 397–416.
- Sweeney, J. C., Soutar, G. N., & Johnson, L. W. (1999). The role of perceived risk in the quality-value relationship: A study in a retail environment. *Journal of Retailing*, 75(1), 77–105.
- Teo, T. S. H., & Yeong, Y. D. (2003). Assessing the consumer decision process in the digital marketplace. *The International Journal of Management Science*, 31, 349–363.
- Tian, L., & Ren, G. (2009). Research on the perceived risk of consumer in e-business. Unpublished doctoral dissertation, Beijing Union University, Beijing, China.
- Vijayasathy, L. R. (2002). Product characteristics and Internet shopping intentions. *Internet Research: Electronic Networking Appliances and Policy*, 12(5), 411–426.
- Wu, J., Wu, Y., Sun, J., & Yang, Z. (2013). User reviews and uncertainty assessment: A two stage model of consumers' willingness-to-pay in online markets. *Decision Support Systems*, 55, 175–185.
- Zhu, F., & Zhang, X. (2010). Impact of online consumer reviews on sales: The moderating role of product and consumer characteristics. *Journal of Marketing*, 74(March), 133–148.