Abstract. *Internet shopping anxiety (ISA), or the negative emotion that results from an individual's experiences with online shopping in particular, is an important factor to explain the consumer's emotion in e-commerce usage experience, such as e-tailing service usage experience. In this study, we introduce Internet shopping anxiety (ISA) as a new factor that reflect the consumer's emotion in e-tailing service usage. We explore and empirically validate the relationships among Internet shopping anxiety, perceived risk and consumer satisfaction under the online retailing context.*

This study surveyed and collected the responses of 239 survey participants with online shopping experience. The results indicated that E-tailing service quality and trust in website have significant negative effects on Internet shopping anxiety. Further, the results showed that Internet shopping anxiety have a significant positive effect on perceived risk. Finally, perceived risk is found to have a significant negative effect on consumers' satisfaction.

Keywords: consumer satisfaction, e-tailing service, internet shopping anxiety.

MEASURING THE ANTECEDENT EFFECTS OF SERVICE COGNITION AND INTERNET SHOPPING ANXIETY ON CONSUMER SATISFACTION WITH E-TAILING SERVICE

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1. Introduction

In recent years, the Internet has become an indispensable information technology tool (Joiner, Brosnan, Duffield, Gavin & Maras, 2007; Racolta-Paina and Luca, 2010). The Internet provides consumers with a new means of acquiring information, receiving services, and making purchasing decisions (Doolin, Dillon, Thompson & Corner, 2005). It enables consumers to efficiently acquire information and offers a convenient platform for comparing products and choosing from among online retailers. Online shopping is quick, and consumers do not have to leave their home or office to purchase items. Given these benefits, one might wonder whether there are any disadvantages to using the Internet for online retail.

Yet unlike with traditional retail, online shoppers cannot see or touch a product before purchasing it. Also, they cannot interact directly with sellers. Because of this, online shopping is inherently more uncertain and risky for consumers than shopping in real world. If something goes wrong with an online purchase, consumers may end up with the wrong product; may end up with a product of inferior quality; or may risk losing their time, money, and even identity. Therefore, online retailers should not only sell products but provide support throughout entire online shopping process, a service that is called *e-tailing service*.

The majority of research has focused on the content of e-tailing services (e.g., Ahn, Ryu & Han, 2007; Kim, Kim & Kandampully, 2007) and on online shoppers' evaluation of these services in terms of satisfaction, intent to reuse, and loyalty (e.g., Huang, 2008; Roman, 2007). Yet there is a surprising lack of understanding of the emotions of online shoppers with regard to e-tailing services. Consumers' emotions may affect their evaluations and judgments (Chaudhuri, 2002). By elucidating the emotions of online shoppers – especially the negative emotions – researchers can not only better understand the inner worlds of these shoppers but also advise online retailers on how to improve their services. Thus, it is important to study the negative emotions of online shoppers.

Negative emotions studied among consumers include anger, hate, resistance, fear, and anxiety (e.g., Dallimore, Sparks & Butcher, 2007; Menon and Dubé, 2007). Among these, anxiety is the most widely studied (e.g., Brosnan, 1998; Meier, 1985; Norris, Pauli & Bray, 2007). According to Taylor (1974), anxiety has four characteristics: It is universal, it is normal, it is different from fear, and it can be constructive. These characteristics make anxiety an important construct of human emotion. Although anxiety is often discussed in the literature on consumer behavior (e.g., Brown, 1999; Viswanathan, Rosa & Harris, 2005), computer use (e.g., Durndell and Haag, 2002; Hackbarth, Grover & Yi, 2003), and Internet use (e.g., Joiner et al., 2007; Presno, 1998), it has been relatively understudied in the context of Internet shopping. To fill this gap in the literature, we examined the influence of Internet shopping anxiety on consumer satisfaction with e-tailing services.

E-tailing services include those services with which a consumer comes into direct contact in the online shopping environment. E-tailing services are the most

discussed issue in the Internet literature (e.g., Goldsmith and Bridges, 2000; Rao, 1999; Wang and Head, 2007). They are frequently discussed in terms of (1) information about products, services, and events (e.g., product warranty and product features) presented on an online shopping site (e.g., Bhatti, Bouch & Kuchinsky, 2000); (2) service, or the way in which online retailers help their consumers to complete the shopping process (e.g., Shamdasani, Mukherjee & Malhotra, 2008); and (3) system, or the "place" in which consumers do their shopping, such as on a website (e.g., Frambach, Roest & Krishnan, 2007; Wolk and Skiera, 2009). In the present study, we divided e-tailing services into two components: service and system. (We followed Jun, Yang and Kim, 2004, and combined the information and service components.) Specifically, we examined service and system with regard to the corresponding constructs of e-tailing service quality and online shoppers' trust in website (system) from the perspective of online shoppers.

The present study supplements existing research findings by focusing on the common online shoppers' negative emotion – Internet shopping anxiety. E-tailing services can act as a potential trigger of Internet shopping anxiety among consumers. Thus, we aimed to explore how e-tailing service quality and trust in website affect consumers' Internet shopping anxiety and to understand how this anxiety further influences risk perception and consumer satisfaction with e-tailing services. The three research questions were as follows:

a) Do perception of e-tailing service quality and trust in website affect consumers' Internet shopping anxiety?

b) What is the effect of Internet shopping anxiety on perceived risk of the e-tailing service?

c) What is the relationship of perceived risk of e-tailing service use and consumer satisfaction with the-tailing service?

This article is organized as follows. We first discuss the theoretical foundations for the development of our research hypotheses. We then describe the study methodology and data analysis procedures. Results are presented next. Finally, findings are discussed and conclusions drawn.

2. Literature review and hypothesis development

2.1. Internet shopping anxiety

Researchers have examined the negative emotions associated with using technology or the computer. For example, some people have negative psychological reactions and experience physiological changes when faced with having to use the computer (Rosen and Weil, 1995; Tseng, Tiplady, Macleod & Wright, 1998). People have mentioned experiencing avoidance, hate, resistance, fear, and anxiety while using the computer. Among these negative emotions, computer anxiety is the most widely discussed (e.g., Brosnan, 1998; Meier, 1985; Norris, Pauli & Bray, 2007).

Most prior research considered causes of computer anxiety in relation to computer use only (e.g., Brosnan, 1998; Meier, 1985; Norris et al., 2007). However, Durndell and Haag (2002) indicated that Internet use generates similar but distinctive anxiety than that caused by computer use. Anxiety or other negative emotions that result from using the computer may appear similar to Internet anxiety, but there are experiential differences (Thatcher, Loughry, Lim & McKnight, 2007). The Internet, which enables users to surf the web, is an extension of the computer and an information technology application (Durndell and Haag, 2002). Thus, anxiety that appears to be related to using the computer could actually be caused by using the Internet.

Presno (1998) proposed that Internet anxiety is feelings of indecisiveness in an individual using the Internet as a result of being inundated with information and interaction. Joiner et al., (2007) believed that Internet anxiety is an important factor that affects one's usage of the Internet. They suggested that Internet anxiety is similar to computer anxiety-an irrational fear aroused by the thought of using computers, resulting in avoidance of or minimal computer usage. But Presno (1998) suggested that the factors causing computer anxiety may not adequately explain Internet anxiety because of the differences in usage experiences.

Similar to computer anxiety and Internet anxiety, we distinguish between Internet anxiety and Internet shopping anxiety. *Internet anxiety* refers to the negative emotion that results from an individual's general experiences using the Internet, whereas *Internet shopping anxiety* refers to the negative emotion that results from an individual's experiences with online shopping in particular.

Although Internet anxiety and Internet shopping anxiety are similar, there are some important conceptual differences. First, Internet anxiety arises from the use of web-related services only, whereas Internet shopping anxiety arises from any component (either web-related or non-web-related) of the online shopping process. For example, if consumers are afraid that they will not receive products that they purchased online, this may increase their Internet shopping anxiety. Second, Internet anxiety develops across time and as a result of multiple situations, and it thus can be measured in terms other than specific usage experiences. In contrast, Internet shopping anxiety develops as a result of online shopping transactions and thus can be measured after having such experiences. Third, online shopping is an economic activity, and if something goes wrong in the process, consumers stand to lose time and money. Such a situation is inherently more risky and uncertain than merely using the Internet, and thus anxiety levels increase.

The online shopping context with which consumers engage could evoke domain-specific Internet anxiety, namely Internet shopping anxiety, when these consumers perceive the online shopping process and technology as being overwhelming, risky, or uncertain. Thus, Internet shopping anxiety is a variable and worth issue to discuss.

2.2. E-tailing service quality and Internet shopping anxiety

Scholars have attempted to determine the factors that influence consumers' perceptions of various web services. Page and Lepkowska-White (2002) drew from the brand-related literature to distinguish between web awareness and web image. *Web awareness* indicates a consumer's familiarity with web services (Page & Lepkowska-White, 2002), including content related to online products, services, and sellers (Strauss and Frost, 1999). Given that the services provided by different websites may appear similar to consumers, it is important that web service providers create and maintain sites that attract consumers' attention. In contrast, *web image* reflects users' perceptions of both the web-related and non-web-related services of a site (Page and Lepkowska-White, 2002). To build a positive image, it is crucial that websites be easy to navigate, be information rich, and provide for secure transactions (Hoffman and Novak, 1996; Page and Lepkowska-White, 2002).

When the content of a website is perceived as being of good quality, web services can be used to strengthen web image and web awareness among consumers, and even consumers' reliance on the website. Jun et al. (2004) examined the factors that cause consumers to revisit websites and repeatedly use a web service. They discovered that the six most important factors in the online retailing context are reliability, attentiveness, ease of use, access, security, and credibility. We integrate the findings of Jun et al. (2004) and Page and Lepkowska-White (2002) to define *e-tailing services* as services offered by online retailers to promote understanding of themselves and their products among consumers and to facilitate consumers accomplish their online shopping.

Online retailers that can use e-tailing services to assist their consumers during online shopping will make a good impression among these consumers. Services of high e-tailing service quality make consumers feel confident and comfortable and help them to complete their online shopping. Through the services, these online retailers provide a positive usage or shopping experience for consumers, decreasing their degree of Internet shopping anxiety. Thus, the intensity of Internet shopping anxiety is negatively associated with e-tailing service quality:

H1: An online retailer's e-tailing service quality is negatively associated with online shoppers' Internet shopping anxiety.

2.3. Trust in website and Internet shopping anxiety

When faced with a situation over which they have little or no control, people are said to have trust if they believe they will not be taken advantage of (Mayer, Davis & Schoorman, 1995; Schneider, 2006). Trust is also regarded as a kind of volitional control behavior between human beings (Thatcher et al., 2007). Previous research has focused extensively on interpersonal trust rather than human–object trust (Delgado-Ballester, Munuera-Aleman, Yague-Guillen, 2003). Yet people can also have trust in objects. For instance, consumers trust automated teller machines and use them to manage their bank accounts (Thatcher et al., 2007).

As information technology develops, the frequency of human–computer interactions increases, which makes trust between users and websites an important issue (Johnson, Bardhi & Dunn, 2008). Ajzen (1988) separated trust in technology into trusting beliefs and trusting intentions. *Trusting beliefs* result when people perceive an object they trust as benevolent, competent, honest, and predictable, whereas *trusting intentions* result when individuals are willing to rely on the object in question (McKnight and Chervany, 2001).

When consumers have trust in the website of an online retailer, they are more confident and carefree while shopping. In contrast, being distrustful of a website increases Internet shopping anxiety. Thus, the greater trust a consumer has in an online retailer's website, the less Internet shopping anxiety he or she will experience. Having trust in website reduces a shopper's level of Internet shopping anxiety:

H2: Online shoppers' trust in website is negatively associated with their Internet shopping anxiety.

2.4. Internet shopping anxiety and perceived risk

Emotions are basic motivations and crucial behavioral determinants in the consumption process (Chaudhuri, 1997). Oftentimes, individuals consume product and service just simply for a feeling or an emotion. For example, they may see a movie or go to an amusement park just for fun. Likewise, purchasing or consumption activities may be based not only on evaluation and reasoning but also on emotion. Chaudhuri (1998) proposed two main types of consumer behavior: the information-processing approach and the experiential approach. The *information-processing approach* asserts that consumer behavior is based on tangible attributes of information and is objective, rational, and problem-solving (Bettman, 1979; Johar, Maheswaran & Peracchio, 2006). In contrast, the *experiential approach* emphasizes consumer behavior as based on non-tangible attributes of information and as being subjective, emotional, and symbolic (Holbrook and Hirschman, 1982; Payne, Storbacka & Frow, 2008). Both reason and emotion provide people with knowledge of the real world, guide their judgment, and affect their behavior.

When consumers find themselves in situations marked by uncertainty, they normally use information to reduce risk and to make decisions (Bauer, 1960). In fact, having information reduces risk, uncertainty, and conflict (Berlyne, 1960; Bettman, 1979; Chaudhuri, 2002). When feeling uncertain, consumers need a great deal of information to serve as a knowledge base for evaluating risk. Consumers' knowledge originates from emotion, which in turn affects their perception of risk (Chaudhuri, 1997). By exploring the relationship among emotion, knowledge, and risk, Chaudhuri (1997, 2002) discovered that consumers' negative emotions contribute greatly to perceived risk. We proposed Hypothesis 3 as follows:

H3: Online shoppers' Internet shopping anxiety is positively associated with their perceived risk of the e-tailing service.

2.5. Perceived risk and consumer satisfaction

The influence of consumer satisfaction on consumer behaviors and intentions has received much attention in the marketing literature (e.g., Bena, 2010; Cronin, Brady & Hult, 2000; Ekinci, Dawes & Massey, 2008). Previous research has studied consumer satisfaction along various dimensions: time of evaluation (e.g., retrospective of past consumption or immediate to an encounter), object being evaluated (e.g., product or service), type of response (e.g., cognitive or affective), and so on (Oliver, 1997; Westbrook and Oliver, 1991). Oliver (1997) suggested that satisfaction evaluations represent a more generalized evaluation of a class of objects purchased (e.g., a post-consumption evaluation). The present study's interest in consumer satisfaction is in line with this notion and also focuses on satisfaction evaluation.

Both cognitive and affective responses to products or services (or so-called "prior information") influence consumers' judgments (Homburg, Koschate & Hoyer, 2006; Oliver, 1997). Consumers use this prior information to evaluate their satisfaction with later consumption experiences (Bolton, 1998; Homburg et al., 2006; Mittal, Kumar & Tsiros, 1999). Using cognitive and affective judgment, consumers can anticipate their satisfaction with a given product or service (Chandrashekaran, McNeilly, Russ and Marinova, 2000). Variance in consumer satisfaction is largely explained by cognitive and affective factors (Homburg et al., 2006). Thus, consumers use cognitive and affective responses to form judgments and anticipate their level of satisfaction with future consumption.

Whereas past research has extensively explored the relationship between consumer satisfaction and major attributes or processes of a service or product experience (Mittal, Ross & Baldasare, 1998), the present study focuses on the association between online shoppers' satisfaction and perceived risk of using e-tailing services. Perceived risk represents the degree to which individuals anticipate adverse consequences or uncertain outcomes of a decision (Johnson, Garbarino & Sivadas, 2006). Although perceived risk has rarely been examined as an antecedent of consumer satisfaction evaluation, Chaudhuri (1997) found that there is a strong relationship between risk perceptions and negative feelings about consumption, which can in turn have a direct effect on satisfaction evaluation (Mano and Oliver, 1993). In addition, uncertainty has a negative influence on post-purchase evaluations (Rust, Inman, Jia & Zahorik, 1999). Johnson et al. (2006) further confirmed that perceived risk is negatively associated with evaluations of consumer satisfaction. Therefore, we predict a negative relationship between perceived risk and online shoppers' satisfaction with e-tailing services:

H4: Online shoppers' perceived risk of e-tailing service is negatively associated with their satisfaction with the e-tailing service.

3. Research methodology

The study adopted a survey method for data collection and applied structural equation modeling (SEM) technique to examine research hypotheses.

3.1. Measurement

This study adopted a 21-item scale of e-tailing service quality, which was originally developed by Jun et al., (2004). The scale is of six dimensions which are reliability, access, ease of use, attentiveness, security, and credibility. Consumer's trust in website was measured by using the four-item scale developed by Thatcher et al., (2007). Internet shopping anxiety was measured by adapting the three-item Internet anxiety scale developed by Thatcher et al., (2007). Perceived risk was measured by adapting the four-item scale used by Doolin et al., (2005). The four items to measure consumer satisfaction with e-tailing service were adopted from the work of Flavia´n, Guinalı´u and Gurrea (2006).

All items of the measurement used a 7-point Likert scale. Each item ranged from 1 "I do not agree at all" to 7 "I totally agree". The constructs and items used are shown in Table 1.

Table 1

The survey instrument

Construct	Definitions and items	Mean	S.D.
E-tailing service quality (The degree of online shoppers' perceived e-tailing service quality)			
E-tailing service quality – reliability[a]			
RE1. The quantity and quality of the product/service I received from the online retailer was exactly the same as what I ordered.		5.29	0.942
RE2. The product/service I ordered was delivered to me within the time promised by the online retailer.		5.49	0.912
RE3. The billing process was accurately handled and its records were kept accurately by the online retailer's website.		5.54	0.849
RE4. The online retailer's website responded to my inquiry promptly.		4.98	0.825
RE5. When the online retailer promised to e-mail or call me by a certain time, it did so.		5.26	0.866
RE6. The system of the online retailer's website rapidly retrieved the information I requested.		5.41	0.783
E-tailing service quality – Access[a]			
AC1. The online retailer's website showed its contact information, such like e-mail, telephone and so on.		5.31	0.839
AC2. If I want to, I could easily contact a consumer service representative of the online retailer over the e-mail or telephone.		5.24	0.879
AC3. The online retailer's website offered multiple ordering options such as e-mail or telephone options.		5.23	0.850

Construct	Definitions and items	Mean	S.D.
AC4. For more information, I could turn to the online retailer's chat rooms, bulletin boards, or others.		5.23	0.855
E-tailing service quality – Ease of use[a]			
EU1. The online retailer's website address was easy to remember.		5.31	1.082
EU2. The organization and structure of online catalogs were well-organized and easy to follow.		5.40	0.848
EU3. All the terms and conditions (e.g. payment, warranty, and return policies) were easy to read/understand.		5.34	0.888
EU4. The contents in the online retailer's website were easy to understand.		5.44	0.822
E-tailing service quality – Attentiveness[a]			
AT1. The online retailer gave me personalized attention.		5.01	0.838
AT2. The online retailer's website had a message area for consumer questions and comments.		5.05	0.866
AT3. I received a personal "thank you" note via e-mail or other media after I placed an order from the online retailer.		5.11	0.835
E-tailing service quality – Security[a]			
SE1. I felt secure in providing personal information for online purchase on the online retailer's website.		5.08	0.769
SE2. I felt the risk associated with Internet transactions was low on the online retailer's website.		5.10	0.856
E-tailing service quality – Credibility[a]			
CR1. The website showed the online retailer's related information in this online business.		5.22	0.797
CR2. I received special rewards and discounts as promised from doing business with the online retailer on the website.		5.17	0.804
Trust in website (The degree of online shoppers' trust in website)			
TW1. I think, the online retailer's website has the functionality I need.		5.26	0.856
TW2. The online retailer's website has the ability to do what I want it to do.		5.22	0.877
TW3. Overall the online retailer's website provides the capabilities I need.		5.28	0.852
TW4. I think the online retailer's website is very reliable.		5.04	0.947
Internet shopping anxiety (The degree of online shoppers' Internet shopping anxiety)			
IA1. It scares me to think that I could lose a lot of information on the online retailer's website by hitting the wrong key.		3.02	0.874
IA2. The online retailer's service is somewhat intimidating to me.		3.00	0.935
IA3. Using the online retailer's service for shopping is a bad idea.		2.89	0.892
Perceived risk (The degree of online shoppers' perceived risk)			
PR1. I feel, using the online retailer's service has the risk of making a poor purchasing decision.		2.95	0.726
PR2. I feel, using the online retailer's service has the inability to compare price.		3.26	0.727
PR3. I feel, using the online retailer's service has the inability to inspect the product.		3.05	0.782

Construct	Definitions and items	Mean	S.D.
	PR4. I feel, using the online retailer's service has the risk of compromising personal information.	3.19	0.896
	Consumer satisfaction (The degree of online shoppers' satisfaction with online retailer's service)		
	CS1. I think that I made the correct decision to use the online retailer's service.	5.78	0.929
	CS2. The experience that I have had with the online retailer's service has been satisfactory.	5.32	0.935
	CS3. In general terms, I am satisfied with the way that the online retailer's service has carried out transactions.	5.46	0.808
	CS4. In general, I am satisfied with the service I have received from the online retailer.	5.41	0.893

[a] Construct – factor

3.2. Data collection

In order to secure a more representative sample, we used the convenience sampling approach by administering questionnaires on the survey website. Every respondent must be the members of the survey website and have to log in the survey system. The website allows only one account per person in the system. Therefore, we arranged the survey on the website to prevent double response. We offer virtual points to the respondents after we check the completeness of their answers. The respondents can exchange the virtual points for several goods.

All of the survey participants were screened with at least one shopping experience on particular online retailers' websites. Two hundred and sixty questionnaires were returned and 21 were dropped due to incomplete answers. Table 2 presents the demographic characteristics of the respondents.

Table 2
Demographic characteristics of the respondents*

Measure	Items	Frequency	Percentage (%)
Gender	Male	103	43.1
	Female	136	56.9
Age	Under 20	24	10
	21~30	182	76.2
	31~40	23	9.6
	Over 41	10	4.2
Occupation	Electronics industry	18	7.5
	Manufacturing	12	5
	Government	20	8.4
	Service sector	78	32.7
	Student	111	46.4
Education	High school	29	12.2

Measure	Items	Frequency	Percentage (%)
	Undergraduate	165	69
	Graduate	45	18.8
Disposable income	Less than NT $10,000	34	14.3
	NT $10,001 ~ NT $20,000	73	30.5
	NT $20,001 ~ NT $30,000	39	16.3
	NT $30,001 ~ NT $40,000	29	12.1
	NT $40,001 ~ NT $50,000	19	8
	Over than NT $50,001	45	18.8

* Sample size = 239.

4. Results

We analyzed the convergent validity of constructs, the reliability of our measurement items, and tested the significance of the research hypotheses in a structural equation model by using SPSS 15.0 and Amos 7.0.

4.1. Assessing reliability and validity of constructs

Cronbach's α was used to assess the internal consistency of the proposed constructs. Table 3 presents the factor loading ranges and Cronbach's α for each construct identified and used. All Cronbach's α value ranged from 0.676 to 0.897, which are greater than 0.6 is acceptable (Nunnally, 1978) and thus the constructs were considered reliable. Therefore as a result, no measurement item was dropped.

Convergent validity occurs when all items measuring a construct load on a single factor. We assessed each factor by conducting a within-scale factor analysis. In Table 3, all measurement items converged onto their constructs with factor loading of each item higher than 0.4 and all factors demonstrated uni-dimensionality. Table 4 shows the result of correlation analysis in which the correlations con-effinicents between all variables were all statistically significant to fulfill the criterion validity as they were consistent with the directions of relationships proposed in research hypotheses.

Table 3

Results of reliability test

Construct	Measurement items	Cronbach's α	Loading range	Number of items[*]
E-tailing service quality				
Reliability	RE1, RE2, RE3, RE4, RE5, RE6	0.854	0.524-0.720	6(6)
Access	AC1, AC2, AC3, AC4	0.897	0.715-0.768	4(4)
Ease of use	EU1, EU2, EU3, EU4	0.825	0.587-0.690	4(4)
Attentiveness	AT1, AT2, AT3	0.706	0.516-0.617	3(3)

Construct	Measurement items	Cronbach's α	Loading range	Number of items[*]
Security	SE1, SE2	0.680	0.472-0.550	2(2)
Credibility	CR1, CR2	0.676	0.420-0.497	2(2)
Trust in website	TW1, TW2, TW3, TW4	0.875	0.728-0.839	4(4)
Internet shopping anxiety	IA1, IA2, IA3	0.797	(-0.552)-(-0.702)	3(3)
Perceived risk	PR1, PR2, PR3, PR4	0.718	(-0.514)-(-0.679)	4(4)
Consumer satisfaction	CS1, CS2, CS3, CS4	0.884	0.462-0.559	4(4)

[a] Final items (initial items).

Table 4

Correlations and square root of the AVE

Variable	E-tailing service quality	Trust in website	Internet shopping anxiety	Perceived risk	Consumer satisfaction
E-tailing service quality	0.853				
Trust in website	.518**	0.875			
Internet shopping anxiety	-.696**	-.508**	0.838		
Perceived risk	-.714**	-.436**	.663**	0.741	
Consumer satisfaction	.770**	.532**	-.688**	-.586**	0.886

** Significant at 0.01 level (two-tailed).

4.2. Structural equation modeling

We used SEM and a confirmatory factor analysis to test the model and its validity. Amos 7.0 was used to perform the SEM analysis. We followed the recommended two-stage analytical procedures of SEM: the measurement model and structural model. The measurement model was used to ensure that the results were acceptable and consistent with the underlying conceptual model, and the structural path model was then used to examine and determine relations and their significance among the constructs.

Table 5 summarizes the results of the measurement model. The results show that based on their parameter estimates and statistical significance, all model constructs, namely e-tailing service quality (reliability, access, ease of use, attentiveness, security, and credibility), trust in website, Internet shopping anxiety, perceived risk, and consumer satisfaction all exhibited to be valid measures of their respective constructs.

Table 5

Results of the measurement model

Construct and indicators	Standardized loadings	*t*-value	Composite reliability
E-tailing service quality			0.967
RE	0.789	_a	
AC	0.740	12.278***	
EU	0.813	13.825***	
AT	0.726	12.000***	
SE	0.748	10.759***	
CR	0.832	14.239***	
E-tailing service quality – Reliability[b]			0.907
RE 1	0.730	_a	
RE 2	0.777	10.944***	
RE 3	0.663	10.211***	
RE 4	0.572	8.392***	
RE 5	0.666	9.815***	
RE 6	0.790	11.264***	
E-tailing service quality – Access[b]			0.940
AC 1	0.790	_a	
AC 2	0.849	14.619***	
AC 3	0.815	15.817***	
AC 4	0.846	13.941***	
E-tailing service quality – Ease of use[b]			0.899
EU 1	0.593	_a	
EU 2	0.823	12.762***	
EU 3	0.762	14.021***	
EU 4	0.816	9.362***	
E-tailing service quality – Attentiveness[b]			0.799
AT 1	0.676	_a	
AT 2	0.652	8.494***	
AT 3	0.668	8.667***	
E-tailing service quality – Security[b]			0.791
SE 1	0.791	_a	
SE 2	0.655	9.459***	
E-tailing service quality – Credibility[b]			0.781
CR 1	0.726	_a	
CR 2	0.703	10.820***	
Trust in website			0.931
TW 1	0.819	_a	
TW 2	0.835	14.437***	
TW 3	0.855	14.825***	
TW 4	0.701	11.538***	

Construct and indicators	Standardized loadings	*t*-value	Composite reliability
Internet shopping anxiety			0.876
ISA 1	0.764	-ᵃ	
ISA 2	0.824	12.357***	
ISA 3	0.682	10.310***	
Perceived risk			0.829
PR 1	0.690	-ᵃ	
PR 2	0.582	7.940***	
PR 3	0.680	9.280***	
PR 4	0.653	8.823***	
Consumer satisfaction			0.935
CS 1	0.854	-ᵃ	
CS 2	0.825	15.673***	
CS 3	0.857	16.665***	
CS 4	0.729	13.001***	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.
ᵃ Values were not calculated, because loading was set to 1.0 to fix construct variance.
ᵇ Construct – factor.

By a covariance structural analysis, we verified the structural integrity of the research model. As shown in the Table 6, a final structural equation model was generated yielding highly acceptable fitness statistics with χ^2/d.f. = 1.194, RMSEA = 0.029, GFI = 0.926, AGFI = 0.901, NFI = 0.934, CFI = 0.989. Therefore, the research model was considered structurally fit by the conventional criteria for acceptable model fitness.

Table 6

Goodness-of-fit measures

| Fit index	Score	Criterion	Reference
Absolute fit measures			
χ^2/d.f.	1.194**	$\leqq 2$**; $\leqq 3$*	Jöreskog (1969)
RMSEA	0.029**	$\leqq 0.05$**; $\leqq 0.08$*	Browne and Cudeck (1993)
GFI	0.926**	$\geqq 0.90$**; $\geqq 0.80$*	Bagozzi and Yi (1988)
AGFI	0.901**	$\geqq 0.90$**; $\geqq 0.80$*	
Incremental fit measures			
NFI	0.934**	$\geqq 0.90$**	Hu and Bentler (1999)
CFI	0.989**	$\geqq 0.90$**	

Acceptability: ** acceptable, * marginal.

The results of testing statistical hypotheses proposed in this study are shown in Figure 1 and Table 7. Hypothesis 1 which proposed that e-tailing service quality will have a significant negative effect on Internet shopping anxiety was supported with a path estimate of -0.774 (*t*-value = -4.126). Hypothesis 2, which proposed the

significant negative effect of trust in website on Internet shopping anxiety, was also confirmed based on a path estimate of -0.211 (*t*-value = -9.067). Hypothesis 3 which predicted that Internet shopping anxiety will have a significant positive effect on perceived risk was sustained with a path estimate of 0.938 (*t*-value = 8.627). Finally, Hypothesis 4 which postulated that perceived risk will have a significant negative effect on consumer satisfaction was supported with a path estimate of – 0.994 (*t*-value = -8.971).

As shown in Table 7, Hypotheses 1 and 2 were supported, which indicated that the poorer e-tailing service quality and trust in website, the higher Internet shopping anxiety. H3 was also supported and confirmed that Internet shopping anxiety positively contributes to perceived risk. As Internet shopping anxiety gets higher, online shoppers' perceived risk is intensified. H4 that predicted the relationship of perceived risk and consumer satisfaction was also verified. It is found that when perceived risk toward e-tailing service is low, consumer satisfaction with the e-tailing service drives up.
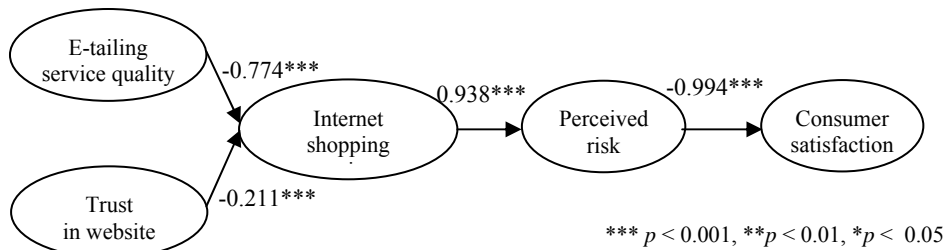
Figure 1. Covariance structural model for the study

Table 7

Estimates of structural path coefficients

Hypothesis	Path	Path estimate	*t*-value	*p*-value	Results
H1	E-tailing service quality → Internet shopping anxiety	-0.774	-4.126	0.001***	Supported
H2	Trust in website → Internet shopping anxiety	-0.211	-9.067	0.001***	Supported
H3	Internet shopping anxiety → Perceived risk	0.938	8.627	0.001***	Supported
H4	Perceived risk → Consumer satisfaction	-0.994	-8.971	0.001***	Supported

*** *p* < 0.001, ***p* < 0.01, **p* < 0.05.

5. Discussion and conclusion

We investigated the relationships among e-tailing service quality, trust in website, Internet shopping anxiety, risk perception, and satisfaction with the e-tailing service. Using a structural model, we examined the influence of online retailer's service and online shoppers' emotion on perceived risk and consumer satisfaction. The findings of the study are as follows.

First, e-tailing service quality is negatively associated with Internet shopping anxiety. This finding is consistent with our hypothesis. Online retailers who provide services to assist consumers in shopping online can build good feelings about their e-tailing service. Consumers feel comfortable, and their Internet shopping anxiety decreases.

Second, trust in website is negatively associated with Internet shopping anxiety. This finding corroborates that of a previous study (Thatcher et al., 2007) and indicates that online shoppers are confident in the ability of a website to facilitate their online shopping. When shoppers feel more comfortable using an e-tailing service platform, they experience less Internet shopping anxiety.

Third, Internet shopping anxiety is positively associated with perceived risk. This is consistent with a prior study that suggested that consumers' negative emotions lead to greater perceived risk (Chaudhuri, 1997). Internet shopping anxiety served as information helps consumers to judge risk, uncertainty, and conflict (Chaudhuri, 2002).

Fourth, perceived risk is negatively associated with consumer satisfaction. This suggests that the perceived risk of using an e-tailing service influences online shoppers' evaluations of satisfaction with the online retailer and its services. Previous studies that have investigated the relationship between perceived risk and consumer satisfaction have reported similar effects (Johnson et al., 2006).

With the development of Internet technology, online shoppers have more information than ever and more competitively priced products and services from which to choose. In such an environment, it is not easy for an online retailer to gain or maintain a competitive advantage. Offering consumers different services has become an industry trend. To do this successfully, online retailers need to better understand the needs and feelings of online shoppers. If online retailers realize which service contents consumer will feel relax with and rely on, they can incorporate such contents into their sites and create a positive image. Consumers will thus be more satisfied with the e-tailing service and will reuse it. Therefore, our study has the following managerial implications.

For online retailers, they should provide consumers with accurate, prompt, and secure service throughout the shopping experience, for example by cooperating with logistics or cash-flow service providers. This can increase consumers' confidence about shopping on a website. As much as possible, online retailers should offer consumers personalized services, for example by building an online customer relationship management system or offering online customer service. By listening to individual consumers, online retailers can offer help and resolve problems

immediately. Jun et al. (2004) reported that a well-designed navigational structure leads consumers to perceive control and enjoy their shopping experience on a site. Therefore, websites should be easy to navigate, well-organized, and concise. Providing a place to share information online is also encouraged. For example, online retailers could create a product- or service-related community in which consumers can share their post-consumption impressions or problem-solving experiences. All of these suggestions would help online retailers increase consumer confidence in the shopping process and decrease anxiety and other negative emotions.

For online shoppers, the findings can first help them understand their emotions more and adjust their emotions. For example, consumers could try to control their anxiety and contract customer service to solve the problem. Then, the finding suggests online shoppers choose suitable or trustable online retailers to make consumptions such as a website which handles the billing processes and keep records accurately. Third, online shoppers could also have some principles to evaluate online retailer's e-tailing service contents.

There are some limitations to this study. First, data collection was limited to the shopping experiences of a particular Internet application—online retailer's website such as Yahoo! and PChome. Future research could focus on user experiences on other types of Internet applications (e.g., blogs) or online shopping (e.g., online auction). Second, other factors may have an influence on Internet shopping anxiety, such as attribution, time, experience, and frequency. These factors could be examined in the future. Third, our use of a sample of online respondents limits the generalizability of this study. We suggest that future empirical research use more diverse samples to enhance the generalizability of the findings. Fourth, this study was based primarily on consumers who ever engage in online shopping. Future research could divide online shoppers into heavy users and general users to explore the effect of consumer attribution on these variables.

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