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Article

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MARKETING | RESEARCH ARTICLE

Students' online purchasing behavior in Malaysia: Understanding online shopping attitude

Marzieh Zendeheel^{1*}, Laily Hj Paim¹ and Syuhaily Bint Osman¹

Abstract: Studies examining the factors that affect the online purchasing behavior of consumers are rare, despite the prospective advance of e-commerce in Malaysia. The present study examines particular factors that influence the attitude of potential consumers to purchase online by using the attributes from the diffusion of innovations theory of Rogers, the attribute of perception of risk, and the subjective norms toward online purchasing. Consumers' perceived risks of online shopping have become a vital subject in research because they directly influence users' attitude toward online purchasing. The structural equation modeling method was used to analyze the data gathered on students using e-commerce, and, thus, to validate the model. According to the results, consumers' attitude toward online purchasing affects the intention toward online purchasing. The other influential factors are compatibility, relative advantage, and subjective norm.

Subjects: Internet / Digital Marketing / e-Marketing; Marketing; Marketing Management

Keywords: compatibility; relative advantage; complexity; perceived risk; subjective norm



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Marzieh Zendeheel (Jadehenari) was born in Rasht, Iran. She received her PhD degree in Consumer Science from University Putra Malaysia (UPM) in 2013; between 2002 and 2006, she was a lecturer at the Payam Nur University. Her current research interests include consumer behavior, online shopping, and management marketing. She is a postdoctoral researcher of University Putra Malaysia.

Laily Paim was the dean and deputy dean of the Faculty for several years. She received her MSc from Indiana State University, USA and her PhD (Consumer Behavior) from University of Illinois, Urbana Champaign, USA. She teaches both undergraduate and postgraduate courses in Research Methods, Consumption Economics, and Consumer Behavior. She has published a book on consumer science and family economics. She has more than 60 publications in international journals in the areas of consumer buying behavior in online shopping, consumer behavior and management.

PUBLIC INTEREST STATEMENT

Internet brings new opportunities for marketers to enhance prevalent marketing practices. Given that online shopping can save time and cost to marketers when developing marketing strategies, the current research can contribute to consumers to better understand advantages that online shopping may bring for them. Some of these advantages are convenience (time- and energy-saving), cheaper price (cost-saving), and more options as well as accessibility to product information before making any purchase decision. The research, at best, enhances consumers' awareness of the significant role that e-commerce has played in modern information technology (IT) context/community, and makes them aware of other shopping choices rather than the ones offered by traditional shopping practice.

1. Introduction

Analyzing consumer behavior is a main part in the success of e-business. With the growth and associated advantages of e-commerce, online shopping is currently experiencing what can be described as a boom. The rapid, large-scale development of this simple commercial idea has attracted consumers and vendors all over the world (Tsai, Cheng, & Chen, 2011). The Internet offers different services, such as information, as well as goods, collects data on market research, promotes services and goods, supports the ordering of merchandise online, and gives retailers and consumers a productive and adaptable new channel (Doherty & Ellis-Chadwick, 2010). Researchers have used many accepted theoretical frameworks to examine the business community's diffusion and acceptance of information and new technologies. However, the concept of e-marketing is still relatively novel (El-Gohary, 2009). The online shopping market of Malaysia was estimated at around RM1.8 billion in 2013, and, by 2015, it is expected to increase to RM5 billion (Bernama, 2014). Based on the Malaysian Communication and Multimedia Commission (Association, 2012), online shopping is ranked 11th among the top 15 reasons why Malaysians access the Internet. Shopping online is not the main factor that drives Malaysians to access the Internet. Therefore, we should pose questions as to how to improve its ranking and examine the research factors hindering Malaysians from doing online shopping. When buying online, perceived risk is an important aspect (Mwencha, Muathe, & Thuo, 2014) because consumers feel uncertain about their purchase decisions in this setting. According to Forsythe, Liu, Shannon, and Gardner (2006), consumers cannot directly touch the goods to be purchased when buying online. Moreover, concerns about security and privacy discourage them from buying online; hence, the amount consumers spend is reduced (Eastlick, Lotz, & Warrington, 2006). Therefore, the present study can help consumers' online shopping behavior in relation to their attitude and perceived risks to encourage more Malaysians to conduct online transactions and contribute to the Malaysian e-commerce development.

The results of this study will help vendors understand users' behavior in the online environment. Knowing user intention will benefit the successful application of online marketing strategies in order to change potential customers to real ones and maintain them.

2. Literature review

Rogers (1995) introduced the innovation diffusion theory to determine why some innovations are received by users more quickly than others as well as why they could even fail. In innovation diffusion, innovation passes through the social system through specific channels as time passes. According to Rogers (1995), innovation adoption is influenced by the innovation's attributes, such as compatibility, relative advantage, trialability, complexity, and observability. These factors have been adopted and revised by succeeding studies of innovation. A previous study discovered that compatibility, relative advantage, and complexity are reliably associated with innovation acceptance (Almobarraz, 2007). Relative advantage is the extent to which an innovation is superior to the one that it is superseding. Many attributes have been studied across different technologies. Studies on the mobile Internet (Hsu & Lin, 2008) and online portals (Shih, 2008) revealed that a higher degree of offered advantage is related to increased levels of purchase attitude. An organizational study on the intention to adopt distributed work arrangements found that user intention and attitude are positively associated with relative advantage. Relative advantage significantly influences users' intentions toward online shopping.

Based on the theory of Rogers (2003), compatibility is the extent to which an innovation is in harmony with the current past experiences, present values, and needs of possible adopters. This attribute has been examined across different Internet shopping studies. A description of compatibility is used for online shopping for the purpose of the present study. Examples reveal that compatibility significantly and positively affects consumer intention (Hsu & Lin, 2008; Shin, 2007). An empirical study on online purchasing found that compatibility is a strong predictor of user intention (Mallat, 2004). Previous research has stated that there is a relationship between attitude and compatibility toward online shopping (Chen, Gillenson, & Sherrell, 2002; Vijayasarathy, 2004). In addition, the present study found that relative advantage is considered to be more adequate than perceived usefulness, and it has a comprehensive concept. Moreover, citing Ajzen (1991), it was found that attitude is the most significant factor in terms of the result for adoption.

The current study examined the risk in the Internet as the purchase method for online shopping as opposed to the traditional way. Remarkably, research that looks at the perceived risk related to online shopping is rare (Ling, Chai, & Piew, 2010). Studies in the subjective consumer behavior concept consider that perceived risk is related to insecurity and the consequences of a consumer's action. Perceived risk in using or purchasing a product or a service can deter a consumer from buying (Bianchi & Andrews, 2012). Moreover, in the context of online transactions, the intangibility of online trade serves as a risk for consumers because it prevents them from using online shopping services further (Choi & Lee, 2003).

Perceived risk also refers to a "trustor's belief concerning the likelihood of gains and losses without considering the relationships with particular trustees" (Jarvenpaa, Tractinsky, & Michael, 2000). In an online setting, according to Choi and Lee (2003), perceived risk is an obstacle to successful transactions because of the fact that customers intentionally and automatically perceive risk when judging products and services online. In an online shopping environment, where transactions involve considerable risk and uncertainty, customers' attitudes toward online shopping tend to be less positive. Similarly, a few studies have also noticed a negative association between attitude and perceived risk toward e-commerce (Hsu & Lin, 2008). According to Andrews and Bianchi (2013), perceived risk has a negative effect on shopping online. In some studies, risk perception is considered to be a multidimensional concept (Kayworth & Whitten, 2010; Mwencha et al., 2014; Tan, 1999). In the current study, the perceived risk concept has two dimensions grounded on the literature review: privacy and security. Despite the significant diffusion of e-commerce, online shopping is still considered risky by consumers (Andrews, Kiel, Drennan, Boyle, & Weerawardena, 2007). Risk perceptions in online shopping are usually related to the medium used, that is, with the reliability and security of conducting transactions online (Hernández, Jiménez, & Martín, 2010). Forsythe et al. (2006) found that risk negatively affects the perception of using the Internet for buying, specifically the perception of consumers who purchase less frequently. In contrast, Venkatesh, Morris, Davis, and Davis (2003) found that more innovative consumers observe less risk in purchasing online. The more constantly consumers purchase online, the less they notice the risk. This finding is correlated with those of Forsythe and Shi (2003) concerning frequent purchasers.

According to Miyazaki and Fernandez (2001), perceived security is a "threat that creates an event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosure, modification of data, denial of service, and/or fraud, waste, and abuse." Flavián and Guinalíu (2006) defined it as the consumers' belief that their financial information is not observable, cannot be deposited, or cannot be used by non-authorized consumers. At present, the main issue in e-commerce is the security of online transactions (Littler & Melanthiou, 2006; Lopez-Nicolas & Molina-Castillo, 2008; Marzieh & Paim, 2012). Security is an important factor in e-commerce success, and security concerns influence consumer behavior (Miyazaki & Fernandez, 2001). Furthermore, it is the factor that usually restricts customers from purchasing online (Lian & Lin, 2007).

According to Collier (1995), privacy commonly describes "the state of being free from intrusion or disturbance in one's private life or affairs," and contains such principles as people's right to the privacy of their own body, communication, and data. In the context of cyberspace, it is the users' capability to control the collection and use of their individual data (Forsythe et al., 2006; Xu & Gupta, 2009). The privacy issue in online purchasing is the opportunity for online businesses to gather information about persons and use it improperly (Verhagen, Meents, & Tan, 2006). The privacy of personal information is an important limiting factor on the Internet and is a fundamental issue among consumers (Park, Lennon, & Stoel, 2005; Pavlou, 2003; Quintal, Lee, & Soutar, 2010; Samadi & Yaghoob-Nejadi, 2009). Privacy subjects impact on consumers' trust in the online vendor (Miyazaki & Fernandez, 2001). Studies show that the issue of privacy is the key problem to the advancement of purchasing online (Littler & Melanthiou, 2006; Mandrik & Bao, 2005). As privacy concerns increase, the more consumers will be wary of sharing their personal information (Mwencha et al., 2014).

Therefore, issues about privacy and security play a vital role in elucidating the resistance to the online purchasing of consumers (Mwenda et al., 2014; Taylor & Todd, 1995). The consumers who are even less likely to shop online are those who consider that their private information can be easily obtained online by malicious individuals, and those who consider that the online environment is liable to fraud, and, therefore, not safe (Miyazaki & Fernandez, 2001). The present study also draws these important factors from the study of Miyazaki and Fernandez to examine in respect of Malaysian respondents.

The current study uses attitude as the dependent variable; from previous studies, attitude is the extent of an individual's positive feelings about online shopping. A person with a more positive attitude is more prone to purchasing online. According to Pavlou and Fygenson (2006), attitude has a vital role in shaping intention to contribute to online shopping. Previous studies on e-commerce and information systems have provided extensive empirical evidence concerning the positive association between attitude and intention (Shu & Chuang, 2011; Tsai et al., 2011). Accordingly, in the online shopping context, consumers with a more positive attitude are considered to be more likely to shop together as a group.

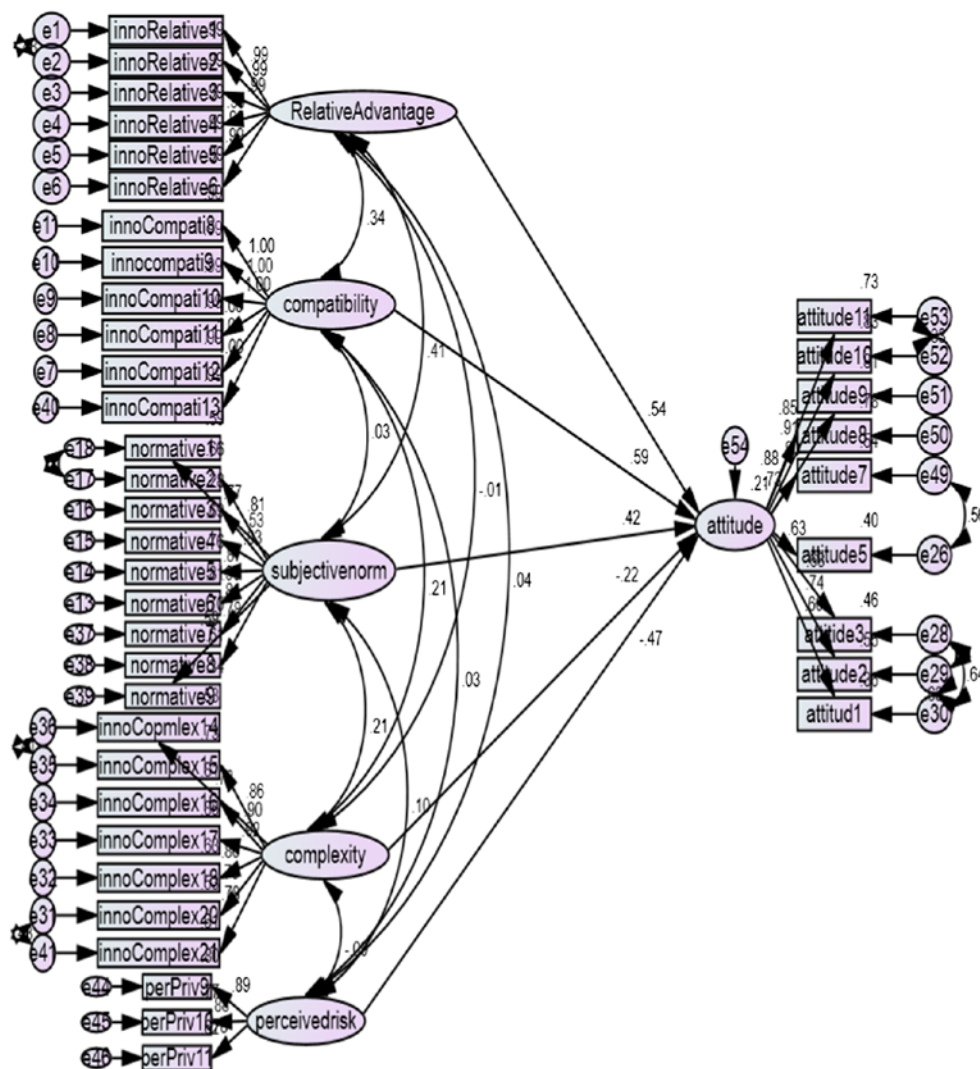
Although a person's attitude, which is shaped by his/her significant beliefs in executing a particular behavior, may be an important factor of behavioral intention, the theory of reasoned action (TRA) considers that the subjective norm also affects the intention. Fishbein and Ajzen (1975) defined the subjective norm as a person's view of the influence of important referents on his/her performance of a specific behavior and on whether an individual is driven to adhere to these expectations. Studies on technology acceptance show that the outcome of the group impact can form attitude irrespective of whether adoption is at the organizational or consumer level, or is voluntary or mandatory (Andrews & Bianchi, 2013). The subjective norm usually indicates the significant referents of individuals, including family and friends. According to Fitzgerald (2004), with the rapid diffusion of online purchasing, determining how the referents in people's shopping online may also affect their choices to shop online is essential. In the TRA, a subjective norm can determine a person's behavioral intention. It is the perceived social pressure of the influence of the most important people on an individual's performance of a particular behavior. Therefore, when the subjective norm level is high, the behavioral intention is also high (Taylor & Todd, 1995; Wu & Paulins, 2005; Yang, Lester, & James, 2007). Social influences have a positive influence on a person's behavior (Andrews & Bianchi, 2013; Tarkiainen & Sundqvist, 2005; Wu, 2003). According to Compeau and Higgins (1995), outcome expectations are expected to be affected by reassurance from significant others, which is the basis of the subjective norm. Studies show that the subjective norm has a positive effect on the IT usage of individuals (Lian & Lin, 2007; Venkatesh & Davis, 2000; Zhang & Li, 2002). In terms of the effects of social norm, particularly online purchasing behavior, Taylor and Todd (1995) found that normative belief has a positive result on online shopping attitudes (Liu & Forsythe, 2010; Tsai et al., 2011).

3. Theoretical framework

The connection between intention and attitude in the technology use of consumers has been examined (Bagozzi, Wong, Abe, & Bergami, 2000; Mathieson, 1991). The TRA is commonly used to explain an individual's behavior and intention. According to Fishbein and Ajzen (1975), a person's intention to execute a particular behavior is what determines behavior. Intention includes two factors, namely subjective norms and attitudes. The application of this theory to consumer decisions has been positive, despite the fact that much of the support for this theory originates from the studies on social psychology (Taylor & Todd, 1995). Moreover, e-commerce adoption indicates that factors associated with subjective norms and attitudes are significant predictors of the intention to conduct e-shopping (Ajzen, 1985; Wang, Gu, & Aiken, 2010). In using the TRA in this context, the factors that are likely to affect intention or attitude toward online purchasing should be identified. This study also adopts the perceived characteristics of innovation, as indicated in Rogers' theory of innovation. These factors are complexity, relative advantage, and compatibility, which are considered to be important explanatory factors by studies on customers in respect of purchasing online (Almobarraz, 2007; Gerrard & Barton Cunningham, 2003; Mahajan & Muller, 1994). Based on the evidence from the literature, this

Figure 1. Structural model of the attitude.

Note: All $p < .05$.



study on online shopping conceptualizes the factors affecting intention and/or attitude in the TRA model. Individuals regard online shopping as risky, and previous studies show that perceived risk affects an individual's intention or attitude to purchase online (Andrews & Bianchi, 2013; Miniard & Cohen, 1983). The model includes the subjective norm in accordance with the TRA. The subjective norm is used to investigate the influence of significant others on a person's organizational communication or offline social network (Moore & Benbasat, 1991; Perea y Monsuwé, Dellaert, & de Ruyter, 2004).

Figure 1 shows the proposed models. The current study intends to determine the particular elements that affect consumer characteristics and purchase attitude to purchase online. According to Venkatesh and Davis (2000), the theory of innovation and TRA should be extended to and supported by other concepts to be more wide-ranging. Thus, this study incorporates other constructs related to consumer characteristics (innovation attribute), and online shopping privacy and security concerns.

4. Sampling procedures

With the development of the Internet, college students have become a consumer section that has active and heavy Internet users compared with other parts of the population (Delafrooz, Paim, & Khatibi, 2011; Jariah, Husniyah, Laily, & Britt, 2004). According to Cassis (2007), they are also the main

users of online shopping. This consumer segment spends more money on the Internet than other demographic segments in the United States. Therefore, choosing a student sample is sensible in examining online shopping attitude.

A pilot questionnaire was constructed and presented to experts, as well as to doctorate students who specialized in e-commerce and information systems, to produce the final structured questionnaire. A sample of 45 students was chosen for the pilot test, which was utilized to increase the validity and precision of the measurement implement.

In total, 375 students with various majors were selected from different universities in the Klang Valley area for the main survey. For the five latent constructs, the questions were modified from the literature to the e-commerce context. The questionnaire on the subjective norm was selected from nine items modified from Taylor and Todd (1995), and Fang, Shao, and Lan (2009). The first dimension of this construct is relative advantage, which consists of six items. It is measured by the advantages of online shopping, such as time saving, effort saving, easy ordering, and enhanced performance (Verhoef & Langerak, 2001), which were adapted from Parthasarathy and Bhattacharjee (1998). The second and third dimensions, compatibility and complexity, were also modified from Parthasarathy and Bhattacharjee (1998). They use a five-point measuring scale with seven items. The questionnaire on students' perceived risk was measured based on two dimensions with 11 items. Security (consisting of five items) was adopted from Gefen (2002), and privacy (consisting of six items) was adapted from Kim, Ferrin, and Rao (2008). Privacy issues stem from problems, such as spam from online retailers, exposure of the shopping behavior patterns of customers, and illegal sharing of personal information (Miyazaki & Fernandez, 2001).

5. Analysis

Data were analyzed according to the structural equation modeling (SEM), and based on Amos software (Andrews & Bianchi, 2013). The measurement model was initially established and then assessed separately from SEM in accordance with the two-stage model building process (Gefen, Karahanna, & Straub, 2003). The chi-square to degrees of freedom ratio, (RMSEA, CFI, RMR) was used to measure the fit of the model. Table 1 shows that all the criteria are above .90, which is considered to be a good model fit. Values below .05 were considered as a good fit and those below .08 were considered a suitable fit for the RMSEA and RMR, respectively (Browne & Cudek, 1993).

The second purpose of the measurement model was to assess the construct validity of the instrument by conducting both convergent and divergent validity analyses.

The results of the assessment of the construct validity (including discriminant validity and convergent validity) after the validation based on the degree of model fit show that, in terms of convergent validity, all the constructs had an acceptable level of model convergent validity. All the remaining indicators in the modified measurement model had a factor loading of more than .5, ranging from .517 to .931, and were significant at the .01 level in their underlying constructs. Moreover, based on AVE (average variance extracted), the items designed to measure the specific latent constructs had a high level of variance in their underlying constructs. The average variance extracted values for all the constructs were greater than the recommended value of .5 (Hair, Black, Babin, & Anderson, 2010). The results of the evaluation of the discriminant validity of the measured scales show that the AVE for all the latent constructs was greater than the square correlation of the constructs.

Table 1. Model fit of measurement

Model	NFI	RMSEA	CFI	P	CMIN/DF	IFI
Defaulting model	.940	.055	.970	.000	1.94	.970

Table 2. Result of CFA

Construct	Number of items	CR	AVE
Relative advantage	6	.898	.986
Compatibility	6	.899	.992
Complexity	7	.934	.672
Perceived risk	3	.889	.728
Subjective norm	9	.731	.606
Attitude	9	.945	.605

Table 3. Average variance extracted (on the diagonal) and squared correlation coefficients (on the off-diagonal) for study instrument

Construct	Relative	Compatibility	Subjective norm	Perceived risk	Attitude	Complexity
Relative advantage						
Compatibility	.176					
Subjective norm	.051	.198				
Perceived risk	.117	.037	.103			
Attitude	.546	.505	.154	.018		
Complexity	.161	.086	.044	.010	.017	

Moreover, based on Table 2, convergent validity is supported by all the constructs in this study, since the average variances extracted for all the latent constructs ranged between .60 and .99.

In addition, when each construct is distinct from one another, it shows discriminant validity, which tests how well the constructs are able to discriminate from each other. This can be measured by determining whether the square root of the AVE value of a construct is larger than the correlation coefficients with other constructs (Ho, 2006).

Discriminant validity was supported according to Table 3, which indicates the correlation matrix of the constructs in this study. This is because all the square root values were larger than the correlation coefficients.

5.1. Structural models of the study

As mentioned earlier, the second model in the SEM analysis is the structural model. The second model is specified and validated to test the hypothesized relationship among the variables.

Table 4. Regression weight

			Standardized estimated	SE	CR	P	R ²
Attitude	←	Relative advantage	.543	.065	8.35	***	.73
Attitude	←	Compatibility	.591	.022	26.86	***	
Attitude	←	Complexity	-.223	.018	12.38	.711	
Attitude	←	Subjective norm	.424	.060	7.06	***	
Attitude	←	Perceived risk	-.473	.032	14.78	***	

Figure 1 displays further results of this study.

The structural model, as displayed in Figure 1, was considered to answer the objective of this study.

The results from Table 4 show that five independent variables predict 73% of the variance of the attitude to shop online. In addition, the results show that based on the standardized regression weight, compatibility had the highest contribution in the prediction of attitude toward online shopping, followed by relative advantage.

6. Discussion

The present study aims to investigate the effect of the perceived attributes, namely relative advantage, compatibility, and complexity, on students' attitude toward online purchasing according to the diffusion of innovation theory (Rogers, 2003). The results show that compatibility and perceived risk significantly predicted users' attitude to purchase online as well as the relative advantage. Complexity was found to be an insignificant adoption attribute in online shopping. Extensive literature supports relative advantage as having a positive impact on attitude and intention (Chang, Cheung, & Lai, 2005; Cheung, Chan, & Limayem, 2005; Hsu & Lin, 2008; Sinha, 2010). Therefore, online shopping can be considered to be better than the systems it supersedes, which is consistent with the data gathered from the respondents of our study. Compatibility is widely supported in the literature, which is consistent with our findings on this attribute (Schiffman & Kanuk, 2007; Shin, 2007). Online shopping is an easy-to-use application. Not much attention is given to the users of online purchasing in regions that are less advanced, such as Malaysia, where the uptake of e-commerce is sluggish (Afzal, 2010; Samadi & Yaghoob-Nejadi, 2009). The present study deals with this drawback by examining the factors that affect the attitude toward purchasing online of Malaysian consumers and their intention to maintain this behavior. The results offer remarkable insights into the online shopping behavior in Malaysia, mainly in respect of the drivers of persistence behavior, which is gradually becoming more significant.

The attitude toward online purchasing was significant. This result also correlates with that of Hernández et al. (2010), who also found that attitude affects the intention to continue online purchasing (Forsythe et al., 2006; Goldsmith & Lafferty, 2002; Haque, Al Mahmud, Tarofder, & Ismail, 2007). Nevertheless, it is usually associated with relative advantage, which is the strongest factor. The importance of compatibility rather than relative advantage for the Malaysian sample suggests that online purchasing is more of a lifestyle fit than an enhancement of the current methods of shopping. The respondents could have already known about the advantages of online purchasing, which may be the reason why this method of purchasing matched their way of living. Complexity did not influence attitude. This finding could have resulted from the socioeconomic stratum of the sample and the respondents being knowledgeable about using the Internet. In fact, according to Maldifassi and Canessa (2010), higher education promotes the widespread use of Internet technologies and computing. According to the findings, uncertainty over the online environment is evident, and influences the consumers' attitude and intention toward online purchasing. These findings indicate that young students are still looking for the advantages and ease of online purchasing. Previous studies show that subjective norms associated with the significant others in a person's social network directly affect intention, which is consistent with most studies on technology acceptance (Smith & Rupp, 2003; Taylor & Todd, 1995; Zhou & Zhang, 2007). Therefore, the fact that social influences can alter either intention or attitude to buy online is logical. This inference is in agreement with the idea that individuals in East Asian nations desire to gain information from friends and family with whom they have shared beliefs (Gong, 2009). In the Malaysian context, this study revealed that respondents feel more pressure from family members, friends, and colleagues about the choice of using or not using shopping online, which indicates that social norm should be considered in the studies on online shopping in Malaysia.

Figure 1 illustrates the findings of the study that indicate that perceived risk negatively influences usage. This result agrees with that in the literature (Biswas & Biswas, 2004; Zimmer, Aarsal, Al-Marzouq,

& Grover, 2010) that perceived risk has a negative association with online shopping. That is, it has been found that perceived risk is a common limitation to transactions. In short, when the perceived risk is great, it is more likely that consumers will not participate in any online purchasing in the future. Customers are concerned about the risk of security, which might cause private information leaks and potential financial losses. The findings of our study showed that the TRA and DoI theoretical models are very relevant and applicable to the perceptions of existing or potential online users. However, more variables, especially risk barriers, should be incorporated in the theoretical framework.

7. Conclusion

The current paper has recognized some main factors that are fundamental to the decision to shop online by student respondents in Malaysia. In considering the barriers, such as perceived risk in the development of e-shopping nowadays and in the future, this study confirms that attitude and compatibility are the factors most related to attitude, as suggested in the TRA and TPB (Ajzen, 1991). Furthermore, in this study, Rogers' theory could clarify the intention to purchase online, since the innovation characteristics of compatibility, relative advantage, and perceived risk are valid predictors of the intention to purchase online in the Malaysian context.

SEM was used in the present study for assessing the measurement model and structural model. The findings revealed which variables significantly affect the attitude to purchase online shopping. The findings draw attention to the role played by perceived risk as a problem in the growth of online shopping in Malaysia, and also indicate that the relative advantage and subjective norm are related to the attitude toward online shopping.

The present study indicates that the relative advantage comprises convenience, time-saving, and financial advantages, and that each aspect characterizes a side of the benefits of shopping online, as acknowledged in the previous studies. Based on the results, the ease to use and save time are the main advantages for Malaysian users to shop online. As Internet use and online shopping are more widespread, factors such as complexity play a small role. The things that most users consider are having a favorable attitude toward online shopping and finding it compatible with their lifestyle. It is worth mentioning that based on the respondents in the context of Malaysia, even though confidence and safety in computer systems are growing, and, nowadays, online shopping is a common practice, perceived risk continues to negatively affect attitude to purchase online and indicates the important role of perceived risk in purchasing online.

8. Implications

The present study aimed to offer a good comprehension of the aspects influencing online shopping behavior. As consumers overcome the stage of initial adoption and appreciate the advantages of purchasing online, a fast transmission of e-commerce in Malaysia may be expected. In respect of perceived risk, managers should guarantee strategies on risk reduction to engender a positive attitude to their websites among consumers. The results also help existing brick-and-mortar companies as they can attract more clients when they spread to online channels.

This study has the following implications. Measures should be adopted by retail companies to remove the risk issue and develop trust in this marketing method. Moreover, because of the perceived lack of secure transactions, a mechanism that can improve privacy and safety should be established by retailers to encourage people to purchase online. Losing their credit card information and financial details should be the least of their worries. The SSL protocol for payment should be used to secure websites and prevent them from disclosing information.

Consequently, based on this study, online providers in Malaysian stores should try to form an adequate reputation by, for example, collaborating with partners who already have a good name, as well as by providing satisfying and sufficient transactions. The strategies to reduce risk are to provide buyers with information about consumer rights, offer a security approval symbol, and provide a money back guarantee, as well as communicate to consumers the high-security standards and protect consumers'

personal information. In addition, the subjective norm influences online shopping behavior, and it is suggested that word-of-mouth marketing should be used by online retailers to promote their web-sites. This method is regarded as one of the most effective methods in advertising.

For managers and entrepreneurs, customers are their fundamental revenue-generating assets. In establishing a virtual store, managers and entrepreneurs should pay attention to the store's ability to provide convenient and efficient shopping (relative advantage) for customers, compatibility with the customers' lifestyle and work, quality goods and services, and value. Retailers should provide quality goods and services at low prices.

Online vendors who are active in selling products on the Internet in Malaysia should consider taking action based on the results of the study as they need to focus on the benefits of buying online, and remember the advantages that potential buyers most value. The outcomes of the present study have exposed that low cost benefits are considered to be the main advantage. Consequently, online sellers should offer the lowest price and promise other financial advantages, such as discounts, coupons, and other monetary motivators. Online providers ought to introduce strategies that are advantageous to the purchaser, such as easy payment features or personalized information based on past behavior.

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