Predicting Consumer Attitude to Use On-line Shopping: Context of Malaysia

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Abstract: Nowadays, the Internet has become an essential part of our lives. It has entered all sectors of our daily activities: business, communication, Shopping, and personal life. This study, based on the diffusion of innovations (DOI) theory investigates factors that influence adoption and usage of e-shopping, especially, in Malaysia. Factors were empirically tested against data collected from 375 participants using survey questionnaires. Perceived Relative advantage was found to be the most significantly related factor affecting e-shopping adoption in Malaysia, followed in turn by Privacy and Compatibility. Security of the Internet had a notable effect on e-shopping and adoption in Malaysia. However there is no significant in consumers' attitude towards online shopping based on complexity. The results show that if students worry about whether their information due to the process of online shopping will be used for other purposes, it will reduce their purchase attitude. In other words, students will evaluate online shopping based on such perceptions as whether the purchase through online will bring additional advantages, and, at the same time, be compatible with their current life style. Customers shop online to save time and effort.
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1. Introduction

The impact of the Internet on the Malaysian market is considerable, as it has made it easy for consumers to purchase products or services from the vendor and to look up the product information on the Internet (Ling , Chai et al. 2010) The Malaysian government has struggled to equip its society with an electronic environment, particularly in respect of Internet commerce (Hashim, Ghani et al. 2009). The internet, one of the most successful innovations in the world. The goal of this article is to raise awareness and enhance understanding of factors that influence adoption and usage of online services in Saudi Arabia in the light of the Rogers' (2003) diffusion of innovations theory DOI (Chau and Lai 2003; Rogers 2003). More precisely, online service adoption will be studied from the information systems adoption point of view referring to the idea that consumers are using online information system via the Internet (e-service) directly and hence more knowledge on the factors that affect information systems adoption is needed. Malaysia in the light of the Rogers' diffusion of innovations theory DOI (Rogers, 2003).

Innovation is connected to online shopping because shopping online can be treated as an innovative behaviour (Zhou and Zhang 2007). A number of studies indicated user perceptions of the innovation influencing their adoption decisions towards online shopping (Tan and Thoen 2000; Papies and Clement 2008). The innovation diffusion theory provides a set of innovation attributes that may affect adoption decisions. Theory of innovation diffusion, one of the most influential innovation adoption frameworks, identified certain key characteristics of innovation. A meta-analysis of innovation characteristics and innovation adoption found relative advantage, complexity and compatibility to be more consistently related to adoption behavior compared to other characteristics of innovation proposed by Rogers' theory (Dutta, 2012). Accordingly, in this study we suggest that relative advantage, complexity and compatibility aspects of online content are likely to influence the attitude of online shopping.

According to the previous research, the attitudes towards online shopping has proved to be a significant predictor of making online purchases (Yang , Lester et al. 2007). Therefore, the success of e-shopping depends on knowing customers behavioural attitude. Prior research suggests that perceived risk is an important factor influencing online consumer behaviour (Pavlou 2003; Salam, Iyer et al. 2005; Schlosser, White et al. 2006). Previous studies have shown that perceived risk is derived from consumer uncertainty, especially in the case of Internet shopping (Bakos 1997). Similarly, Miyazaki and Fernandez (2001), found that perceived risk had a significant impact on online purchasing behaviour. Behaviour researchers, for the most part, defined perceived risk in terms of the consumer's perceptions of the uncertainty and potential adverse consequences of buying a product or service (Miyazaki and Fernandez 2001; Littler and Melanthiou 2006), and is frequently defined as the

possibility of negative results (Das and Teng 2004).security concerns are one of the main reasons web users are not purchasing over the Internet. Consumer reluctant to the internet commerce because of partly due to the barrier to shopping on internet, high privacy and security. There is a close relationship between security and privacy. While privacy is related to what a company purposely decides to do with consumer data, security is concerned with any accidental comprises of consumer data to a third party (e.g. Hacker and identify thief) and lee (2009) mentioned that we have to realize that in that future, the hackers are not from inside the company but also it can be from outside or somewhere else where cannot identify. Consumers' privacy issues are not new and consumer have worried about how personal data are used by government and more recently by business. Internet users want to feel that their privacy are being protected. The government must also protect the privacy and security of consumers as one of the main roles it can contribute in growing internet shopping, Relative advantage is positively related to adoption as compared to other perceived adoption characteristics. It represents the degree to which an innovation is being perceived as better than the idea it supersedes (Rogers 1995).

The relative advantages appear to be significant to the diffusion of online shopping innovation. Complexity, defined by Rogers (1995), is the degree in which an innovation is perceived as relatively difficult to understand and use. If the degree of difficulty is high, then adoption will be low. Most of the user agreed that no additional skills were required for executing internet shopping, as it was not complicated at all. For them, basic computer knowledge should be sufficient for shopping. However, for the first- time user, familiarity with browsing and searching on the internet is important. In general, the respondents agreed that the degree of difficulty in e-shopping is low. Compatibility, which is positively related to adoption, refers to the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters (Rogers, 1995). Many users faced no problems in adapting to the new way of shopping, either with regard to their culture or social life. It is very compatible with their beliefs, values and practice. Roger's DOI (1983) has been adopted and widely studied in mobile setting. For instance, Wu and Wang (2005) point out that perceived relative advantage and compatibility influence favourable attitude towards M-commerce. Previous study by Borg and Persson (2010) supported the relevancy of all five perceived characteristics of innovation in Roger's DOI in forming favourable

attitude towards mobile transaction in South Africa. Lau (2002), utilized the DOI's attributes to predict the adoption of online trading by broker's in Hong Kong. The study found that perceived usefulness, perceived ease of use or complexity, relative advantage, compatibility, were significantly related with the attitude of using the system.

The point of this study is to test empirically the influence of privacy and security, together with some of the attributes of the theory of diffusion of innovation (IDT) on online shopping. Internet will be used as the targeted technology in this study. In this study, we hypothesized that privacy, security, relative advantage, compatibility, complexity; affect an individual's attitude toward online shopping. The research model for this study is shown in Figure 1. There are five hypotheses in this study.

H1: There is a positive relationship between Relative advantage and attitude toward online Shopping.
H2: There is a positive relationship between Compatibility and attitude toward online shopping
H3: There is a negative relationship between Complexity and attitude toward online shopping.
H4: there is a relationship between privacy and attitude toward online shopping.
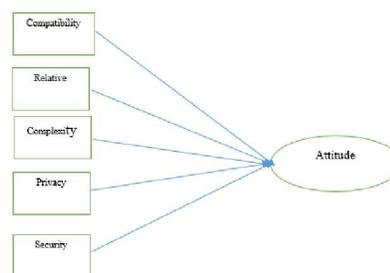H5: there is a relationship between security and attitude toward online shopping

Figure 1. Research framework

2. Material and Methods

The research model includes five constructs and each construct was measured with items. All items were measured with a seven-Likert scale. Items of Attribute of innovation were adapted from Parthasarathy and Bhattacherjee (1998) and Moore and Benbasat (1991). In addition, the items measuring perceived risk were adapted from Lee (2009). Survey approach was chosen to gather information directly from students in universities located in the Klang valley. Students are potentially able of utilizing internet services and are believed to

be the most frequent and active internet users (Zendehdel, Paim et al. 2011). Thus, it is significant for retailers and consumers' behavior researcher to recognize Malaysian students' population attitude toward online shopping due to student's role in online marketing in Malaysia (Sabri , MacDonald et al. 2008). Thus selecting students as our sample was appropriate. Cluster sampling method was used. Among 400 questionnaires that were dispersed, about 380 were returned, but only 375 completely answered. Frequency distribution profile of respondents showed that 60 percent of the respondents were female while 40 percent were male. The majority of the respondents (55.2 %) fall in the age range between 20 to 25 years of age. Respondents having a monthly income ranging from less than RM 2400 were the majority income group (72.3 %). From the ethnic point of view, Malays comprised 52.4%, followed by Chinese and Indians that composed 32.8% and 14. 4% of the study sample respectively.

3. Results

Structural equation modelling (SEM) was used to analyses the data. So SEM is a multivariate technique that permits the simultaneous estimation of multiple equations. Beside, SEM accomplishes factor analysis and regression analysis in one step, as SEM is used to test a structural theory. Moreover, SEM has become a very prevalent technique in the social sciences based on its main strong point.

Confirmatory factor analysis in Amos software was used to analyses construct validities, a measurement model should be assessed for goodness-of-fit. The literature advocated that, for a good model fit, chi-square/ degrees of freedom should be less than 3, adjusted goodness-of-fit index (AGFI) should be larger than 0.8, goodness-of-fit index (GFI), normed fit index (NFI), and comparative fit index (CFI) should all be greater than 0.9, and root mean square error (RMSE) should be less than 0.8. Second, convergent validity is assessed by three criteria. Item loading is at least 0.7 and significant, composite construct reliability is a minimum of 0.8, and average variance extracted (AVE) for a construct is larger than 0.5. Finally, discriminant validity is assessed by the measure that the AVE of each construct should be larger than its square correlation with other constructs. The indices for the measurement model indicate a good fit with Chi-square /df (1.57), AGFI (0.89), GFI (0.81), NFI (0.92), CFI (0.94), and RMSE (0.042). Thus, this measurement model indicates a high degree of reliability as well as convergent and discriminant validities.

The hypothesized research model was tested using the structural model. The overall fit statistics suggest that the model has adequate model fit $x^2/df = 1/21$; GFI -=0:95; AGFI =0:92; CFI = 0:97; RMSEA =0:047: The model fit indexes all are acceptance levels, indicating that the showed fitted the data well.

Table1. Results of Hypotheses Testing of This Study

Hypotheses	IV	DV	Coefficient	P-Value	Result
H1	Relative	Attitude	.325	***	Supported
H2	Compatibility	Attitude	.415	***	Supported
H3	Complexity	Attitude	.085	***	Not Supported
H4	Privacy	Attitude	-.346	***	Supported
H5	Security	Attitude	.-412	***	Supported

4. Discussions

This study is concerned with empirical investigation predictors of attitude toward online shopping that could affect successful predictors of attitude toward using of Internet in Malaysia through Applications of Innovation Diffusion Theory IDT. The finding shows that relative advantage and compatibility are success factors that have significant effect on attitude toward online Shopping. The findings of previous studies indicate that these variables (relative advantage, compatibility) are significant factors in predicting the adoption of innovations (Rogers, 1995). In other words, students will evaluate online shopping based on such

perceptions as whether the purchase through online will bring additional advantages, and, at the same time, be compatible with their current life style. Customers shop online to save time and effort. The results show that complexity it's not significant contribution to the prediction of attitude towards online shopping. Eastlick (1993) and Lin (1998) found no significant relationship between complexity and adoption. As long as an individual's technology apprehension is outweighed by the perceived advantage of innovations, complexity is not a serious concern for consumers (Lin, 1998). Moreover the results, showed in table1 that there is a significant negative relationship between perceived risk and

attitude towards online shopping Therefore, H5-6 was supported by the data in this study. This is consistent with previous studies in which risk perception was found to have a significant negative impact on the attitude towards online shopping or likelihood to purchase online (Jarvenpaa, Tractinsky et al. 1999; Teo and Liu 2007; Grabner-Kruter and Faullant 2008).The results show that if students worry about whether their information due to the process of online shopping will be used for other purposes, it will reduce their purchase attitude. Furthermore, this study found that if information security is not guaranteed, students will actually decrease using online shopping. Thus, online shopping managers must pay attention. The government must also protect the Privacy and security of consumers as one of the main roles it can contribute in growing internet shopping.

This paper assert that innovation can provide better content, superior technical benefits, and cost efficiency to consumers, an innovation can hardly displace the traditional technologies. In this paper the predicted factors are all relevant and can help marketers and advertisers to develop more capable ways to attract consumers to shop on the Internet. Further online store should organize website contents compatible with the way people manage their needs, in the traditional way in terms of the users past experiences and beliefs.

Furthermore, this experience should be seen as more useful compared with the traditional ways. Online shopping marketers could also look into the possibility of spreading and promoting security and privacy related information on the Internet.

Ecommerce computer network security technologies, such as firewalls, virtual private networks, intrusion detection systems, and virus prevention techniques, should be used to strengthen online security. Moreover, e-commerce security management systems should be developed, including personnel management, security systems, tracking audit systems, maintenance systems, data backup systems, and regular cleaning of virus systems.

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