Determinants of Online Reservation Acceptance: An Empirical Study

Noor Hidayah Ab. Aziz, Universiti Teknologi MARA, Malaysia
Intan Salwani Mohamed, Accounting Research Institute, Universiti Teknologi MARA, Malaysia
Normah Omar, Accounting Research Institute, Universiti Teknologi MARA, Malaysia

Abstract - The evolvement of E-commerce has created a competitive environment that changed the way of doing business. Travel related industry such as hoteliers, airlines, and travel agencies compete effectively in the current business environment by adopting online reservation system. Despite million of dollars spent on web-technology investment, there are customers who prefer to stick to the traditional method of business transactions. These, point out the need to study the determinants of user acceptance of online reservation. Grounded in the extended Technology Acceptance Model (TAM), the current study attempts to investigate the causal link between individual differences in computer self efficacy (CSE), perceived ease of use (PEOU), perceived usefulness (PU), perceived credibility (PC), and behavioral intention (BI) in Malaysia environment. Results of Structural Equation Modeling (SEM) demonstrate that CSE has a significant relationship with PU, PU and PC have significant influence on BI, PEOU has no significant influence on BI, and CSE does not predict PC and PEOU.

Keywords: E-commerce, online reservation system, TAM

Introduction

E-commerce revolution has created a competitive environment that change the way of how business is being delivered and designed (Turban & King, 2003). Travel related industry that dominates by hoteliers, airline companies and travel agencies is one of the sector that being affected by the E-commerce revolution. In order to facilitate promotion and reservation processes, online reservation system has been established to provide conveniences of twenty four hours, seven days a week services to the customers. However, although the benefits of using online reservation system are obvious, it is a surprise that there are customers who prefer to stick to the traditional method of business transactions (Intan Salwani, 2010). Due to this, it is a need for businesses to find effective ways of persuading customers to reserve online. Thus, empirical investigation on factors that influence user’s acceptance on online reservation system could provide useful findings to the E-commerce players.

Drawing upon the issue, this study employs a modified version of the Technology Acceptance Model (TAM) to explore the factors that influence the customer’s behavioral intention to use online reservation system. Focus is given on Malaysian individual user of Internet through an empirical study conducted among the lecturers in public Universities, Malaysia.
Objective of Study

The study attempts to investigate the user’s behavioral intention to use the online reservation system. Empirical investigation is done to examine the causal link between individual differences in computer self-efficacy, perceived ease of use, perceived usefulness and perceived credibility with the user’s behavioral intention of online reservation. More specifically the study attempts to determine:

i. The influence of individual differences in Computer self-efficacy on perceived usefulness, perceived ease of use and perceived credibility of the online reservation system.

ii. The influence of consumer’s attitude in dealing with a complex transaction (perceived ease of use) on perceived usefulness and perceived credibility of the online reservation system.

iii. The extent to which perceived usefulness will influence behavioral intention to use online reservation.

iv. The extent to which the user’s perception of credibility regarding security and privacy issues could influence their voluntary acceptance of online reservation system.

Literature Review

Travel related product is rated among the top three products or services purchased via Internet (Eric & Cassidy, 2006). In response to this, many travel Web sites have been established, for which online reservation is applied on services such as hotels rooms, air tickets, car rentals, cruises, and package tours (Bell & Tang, 1998; Bernstein & Awe, 1999). The online reservation systems facilitate the customers to make reservations directly from the Internet. This system avoided a misery of long queues at the counters, and the time wasted on negotiating with the travel agents. Moreover, this system enables the customers to have a glance into the hotel rooms virtually, and also review the places that they plan to visit, eat and shop (Nusair & Kandampully, 2006). According to a study carried out by Jupiter Research, the number of people who bought travel products over the Internet has doubled from 18.6 million in 2006 to 38.6 million by 2007 (Abdul Rahim & Fariza, 2008). There is no doubt that manual reservations like phone calls, queues at counters or using a travel agent to buy the airline tickets and holiday packages are gradually being replaced by a few simple clicks of the mouse (Business world, 2008).

Technology Acceptance Model (TAM)

One of the Information System (IS) research areas that flourished in previous literature is a study on adoption of a new information technology (Klopping & McKinney, 2004). There are quite number of tools being used to describe the adoption of new technology in which one of them is the Technology Acceptance Model (TAM). TAM is developed by Davis in 1989 with the adaptation from the theory of reasoned action (TRA) by Ajzen and Fishbein in 1975, which stated that beliefs influence attitude, which leads to intention, and finally behaviors. After its development, it has become one of the widely referred adoption models in IS research (Gefen & Straub, 2003). According to Davis et al. (1989) TAM is developed to explain and predict computer usage behavior and specifically its goal, to provide an explanation of the determinants
of computer acceptance. They further stressed that TAM is capable of explaining user behavior across a broad range of end-user computing technologies and user populations, while at the same time being both parsimonious and theoretically justified. Later researchers who used TAM has to agree that TAM is robust across time, settings, population and technologies (Klopping & McKinney, 2004; Venkatesh et al., 2003; Lu, Yu, Liu & Yao, 2003).

The original TAM assumes that beliefs about usefulness and ease of use are always the primary determinants of Information technology or Information system adoption (Lu et al., 2003). These two elements are interrelated and serve as a basis for attitude towards using a particular system, which in turn determines the intention to use, and finally generates the actual usage behavior. Davis and Venkatesh (1996; 2000) have validated and extend TAM under different situation to make it more explanatory (Lu et al., 2003). Later on, Venkatesh et al. (2003) excluded the attitude construct because attitude did not fully mediate the effect of perceived usefulness on intention. This is explained by Davis et al. (1989) as in the working environment, people may use a technology for productivity enhancement (i.e. usefulness) even if they do not have a positive attitude (affect) towards using it. Later on, researchers simplified TAM by removing the attitude construct found in TRA (Venkatesh et al., 2003). They believed that TAM in its current form is not enough to explain some of the newly accepted technology. According to Klopping and McKinney (2004), extended TAM may help to address the limitations of the original TAM and perhaps it will provide more evidence for such behavior to happen. As a result, attempts to extend TAM have generally taken one of the three approaches: by introducing factors from related models; by introducing additional or alternative belief factors, and by examining antecedents and moderators of perceived usefulness and perceived ease of use (Wixom & Todd, 2005).

Determinants of online reservation acceptance

In this study, extended version of TAM (Wang et al., 2003) is being used in representing the hypothesized interrelationship of the factors under study. The variable of the main interest is the behavioral intention of a user. Behavioral intention and other variables are quantified and measured in order to find answers to the question of “what are the determinants of online reservation acceptance?” There five variables are as follows:

a) Computer Self Efficacy: According to Compeau and Higgins (1995), computer self efficacy means one’s ability to perform a specific task or job using a computer. In general, most of the researchers suggested that computer self efficacy played an important role in understanding the individual responses towards information technology. Besides, Wang et al., (2003) argued that choosing computer self-efficacy as a variable would be good because it could be manipulated by practitioners through the promotion and training approaches as compared to choosing age, gender and level of education which beyond the control of a business. This theoretical argument by Bandura (1997) also suggested that computer self-efficacy affect individual computer anxiety which in turn, influence the perceived ease of use, perceived usefulness and system usage.

b) Perceived Usefulness: Perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989). Based on the longitudinal study done by Davis, perceived usefulness is found to have strong influence on
peoples’ intention. Lallmaahmood (2007) also found perceived usefulness as a critical factor of the user’s intention to use a system, by looking at the attributes of perceived usefulness (i.e.: convenience, ease and time savings) which act as a main reason for the adoption of the system. Therefore, when a person realizes that a particular system will enhance his or her performance and productivity, this will initiate his/her intention to use online reservation.

c) Perceived Ease of Use: Perceived ease of use is defined as the extent to which a person believes that using a particular system will be free from effort (Davis, 1989). According to Law and Leung (2002), a well-designed reservation system with a user-friendly interface and useful information that is available to the customers prior to their purchase can help increase sales volume and improve the reputation of the travel Web site. Law and Bai (2007) also claimed that ease of navigation is a necessary condition for determining satisfaction. Burns (2006) stated that prospective buyers left the E-commerce websites due to few reasons, and one of them is difficulty in using the system.

d) Perceived Credibility: Perceived credibility is the extent to which one partner believes that the other partner has the required expertise to perform the job effectively and reliably (Ganesan, 1994). It includes the word or written statement of the other partner that can be relied upon (Lindskold, 1978). According to Wang et al. (2003), perceived credibility consists of two elements which are privacy and security. Consumers often feel that their bank is concerned with privacy issues and will protect them. (Pikkarien et al., 2004). While in Malaysia, the consumers have lack of confidence and trust in E-commerce transactions and this is further accentuated by the fact that the Consumer Protection Act specifically excludes protection for electronic transactions (Kaur, 2005). Nabi (2005) reported that the perceived security and privacy risks associated with E-transactions make many consumers feel skeptical about E-commerce.

e) Behavioral intention: According to Ajzen and Fishbein (1975) behavior is best predicted by intentions and intentions are jointly determined by the person’s attitudes and subjective norm concerning the behavior. Davis et al. (1989) also stressed that it is important to understand why people accept or reject a particular system. Therefore, there is a need to predict people’s acceptance of a new IS by measuring their intentions, and the ability to explain their intentions in terms of their attitudes, subjective norms, perceived usefulness, perceived ease of use and other related variables. The understanding of customers’ purchase intention is also important as customers’ behavior can be predicted through their intentions (Day, 1969). Pikkarien et al. (2004) highlighted that a good or bad system would depend on how the users feel about it. The study emphasized that if the users perceived the system to be negative; their behaviors towards that system would also be negative.
Hypothesis Development

In looking at the determinants that influence the user’s behavioral intentions on online reservation, the following hypotheses are tested:

H1: Computer self-efficacy has significant positive effect on perceived usefulness of the online reservation systems.

H2: Computer self-efficacy has significant positive effect on perceived ease of use of the online reservation system.

H3: Computer self-efficacy has significant negative effect on perceived credibility of the online reservation system.

H4: Perceived ease of use has significant positive effect on perceived usefulness of the online reservation systems.

H5: Perceived ease of use has significant positive effect on perceived credibility to use the online reservation system.

H6: Perceived usefulness has significant positive effect on behavioral intention to use the online reservation systems.

H7: Perceived ease of use has significant positive effect on behavioral intention to use the online reservation systems.
H8: Perceived credibility has significant positive effect on behavioral intention to use the online reservation system.

Methodology

a) Scope of Study: In this study, the lecturers of public Universities in Malaysia constituted the population of interest. There are several reasons why lecturers are desirable and acceptable sample for this study. Firstly, educated individuals are the most active users of new technology and are influential consumers. A study by Abdul Rahim and Fariza (2008), indicated that respondents with higher education level are exposed to a longer tenure of Internet experience. This is also supported by previous study on newly adoption technology which is conducted among educated people (i.e. Davis (1989) who chose respondents among MBA students). Secondly, their salary level entitles them to use credit cards. They are therefore at the highest potential of using it for online transactions. Furthermore, the population is chosen due to the reason of its dispersed location all over Malaysia.

b) Sampling Procedures: There are all together 24 campuses located all over Malaysia. The total population is 7219. Based on the population, a sample is drawn using stratified random sampling. The sample size is determined by using a table provided by Sekaran (2003). According to the table, the most appropriate sample size for a population of 7,000 to 8,000 is 364. However, due to the case that samples are to be broken in to sub-samples, the rule of thumb of minimum sub-sample size of 30 is followed (Roscoe, 1975). Therefore, after performing the calculation, the final sample size of 370 is required for this study.

c) Data Collection and Analysis Procedures: Data collection relies mainly on questionnaires method. The response rate of 51.08% is sufficient to avoid sample bias as suggested by Hussey and Hussey(1997). Data is analyzed using SPSS version 16.0 for windows and Amos Graphics version 16.0. Structural Equation Modeling (SEM) technique is chosen due to the ability of model fit assessment. Fit indices are used to determine whether the proposed model should be accepted or rejected. If the model is accepted, the next step is to interprete the path coefficient of the model.

Findings

The reliability of the items in each construct is tested using correlation coefficients, exploratory factor analyses and confirmatory factor analyses (CFA) using AMOS software. In CFA, the model fit indices used are: Chi-square/df ratio, Tucker-Lewis Coefficient (TLI), Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). For a good fit, Chi-square/df ratio must be less than 3, TLI and CFI must be more than 0.9 and RMSEA must be less than 0.08 (Hair et al, 2006). Table 1 depicts the structural model and fit assessment, and Table 2 summarizes the hypothesis testing.
TABLE I. STRUCTURAL MODEL AND FIT ASSESSMENT

Chi-square = 387.620  
df= 201  p-value = .000  
Chi-square/df = 1.928  
TLI = .935  
CFI = .944  
RMSEA = .073  
AIC = 491.620

TABLE II. SUMMARY OF HYPOTHESIS TESTING

<table>
<thead>
<tr>
<th>Proposition</th>
<th>Causal Relationship</th>
<th>P</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>CSE→PU</td>
<td>.034</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>CSE→PEOU</td>
<td>.855</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H3</td>
<td>CSE→PC</td>
<td>.182</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H4</td>
<td>PEOU→PU</td>
<td>***</td>
<td>Supported</td>
</tr>
<tr>
<td>H5</td>
<td>PEOU→PC</td>
<td>.029</td>
<td>Supported</td>
</tr>
<tr>
<td>H6</td>
<td>PU→BI</td>
<td>***</td>
<td>Supported</td>
</tr>
<tr>
<td>H7</td>
<td>PEOU→BI</td>
<td>.108</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H8</td>
<td>PC→BI</td>
<td>***</td>
<td>Supported</td>
</tr>
</tbody>
</table>

*** p<0.001

This study provides evidence that CSE is a determinant of PU. This is consistence with previous studies by Wang et al. (2003), Guriting and Ndubisi (2006), and Hanudin (2007). Results of the current study indicated that hoteliers, travel agencies and airline companies have to take certain measures in order to increase the level of computer self-efficacy among users. Sufficient
guidelines and efficient customer service would ensure that customers are well guided whenever they encounter a problem with the reservation process due to the lack of computer skill.

Furthermore, PU and PC have direct significant effects on behavioral intention. This is consistence with Lallmaahmood (2007), and Nysveen et al. (2005). The findings have indicated that in order to attract more users to voluntarily use online reservation, having a user-friendly system is not adequate. The most important aspect is to develop an online reservation with high functionalities to improve the performance of users by providing secured system for the users, and giving priority to users’ privacy. This will instil customer’s confidence to use the system.

Apart from the above, other variables have shown a contrary result. CSE does not predict PEOU and PC, which is inconsistence with Venkatesh (2000) and Wang et al. (2003). This implies that user’s judgments upon the level of difficulty in the system as well as concerns on security and privacy issues in online reservation are not explained by level of computer knowledge but by other variable. Besides, in looking at the effect of PEOU on BI, the result is also insignificant. The possible reason would be the degree of difficulties of online reservation is not an issue for educated people who have longer tenure of Internet experience.

**Conclusion**

This study has enriched the knowledge in the E-commerce area by assessing the factors that influence users’ acceptance of online reservation. This study has contributed to advanced knowledge of TAM. It is hoped that the research findings would be useful for companies that engage in online reservation transaction to design marketing strategies to cater new potential market segments while at the same time maintain their customers. Although some of the results have been tested statistically, it is still subject to several limitations. The first limitation concerns the sample. In this study focus is only given to the lecturers of public Universities in Malaysia. Therefore, generalization of conclusions cannot be made to every online reservation user. Next, literature reviews demonstrate that TAM is not the only model to predict technology acceptance. In fact there are other models that can be used to study user’s acceptance. This study only tested four variables (i.e. CSE, PU, PEOU, PC) as a predictors of user acceptance. On this basis, this model might face the fact that there are other possible factors influencing online reservation acceptance that are not included in the model.

The above limitations have paved the way to future research. One avenue for future research could be by extending the sample to the general population to allow generalization of conclusions.
References


