Website Quality and Consumer Online Purchase Intention of Air Ticket

Mohd Fazli Mohd Sam 1, and Md Nor Hayati Tahir 1

1Technology Management Department, Faculty of Technology Management & Technopreneurship, University of Technical Malaysia Melaka, Melaka 75300 Malaysia

Abstract— Internet application has been used by many firms especially the low-cost airline service providers in supporting their marketing activities. Thus, it is crucial to know whether firms’ website is giving an added advantage that could trigger online purchase intention. In this study, we examine six website quality factors: usability, website design, information quality, trust, perceived risk and empathy as antecedents of online purchase intention of air ticket. A self-administered questionnaire was used and 208 usable responses were collected in Klang Valley, Malaysia areas. Correlations and regressions were used to analyze the data. The findings showed that empathy and trust are the most direct influential factors in predicting online purchase intention. To improve consumers online purchase intention, service providers should provide service with empathy and enhance customers’ trust. The results of study provide a valuable insight on the direct impact of website quality factors towards online purchase intention of air tickets.

Index Term— Online purchase, low-cost airline, website

1. INTRODUCTION

With the increasing popularity of online shopping, business around the world now try to enhance their competitive advantages by focusing their resources on the virtual business environment. In airline industry, e-ticketing has changed the airline industry and behavior of consumers with reducing cost and providing new channel for communication and support. Airline service providers try to offer services through electronic infrastructures, especially through the web, to decrease their cost, expand revenue, creating reliable database of customers for future customer relationship management plans (Debhashi & Nahavandi, 2007) [9], [32], [35]. In the academic literature, website quality has generally been recognized as a critical factor to drive business online. As such, numerous studies have been devoted to website quality and evaluations (Bai et al., 2008) [2], [18], [20], [35]. Moreover, most of the studies focus on relationship between website quality and customer satisfaction. Specific research examines the direct impact of website quality on consumer online purchase intention with regard to low-cost carrier airline service is lacking [24], [30]. Since low-cost carrier operators aim at cost reduction, it is critical for them to identify key factors that directly effect customer purchase intention [1], [4], [9]. In addition they are using online air ticketing, which means their website quality is of key element that contribute towards company performance [27], [33]. Therefore, this study aims at examining direct relationship between website quality dimensions as antecedents of consumer purchase intention of air ticket with regard to low-cost carrier airline service [8], [12], [34].

2. PRECEDEMENTS OF PURCHASE INTENTION

Purchase intention is defined as the probability that the consumer will purchase the product. According to Theory of Planned Behavior (TPB), an individual’s performance of a certain behavior is determined by his or her intent to perform that behavior [3], [8], [9]. Intent is itself informed by attitudes toward the behavior, subjective norms about engaging in the behavior, and perceptions about whether the individual will be able to successfully engage in the target behavior (George, 2004) [11], [28]. Moreover, previous studies have indicated that some of the most used key dimensions of online service quality research were navigability, playfulness, information quality, trust, personalization and responsiveness (Nusair & Kandampully, 2008) [15], [20], [35], outcome quality, consumer service, process controllability, ease of use, information quality, website design (Su et al., 2008) [22], [31], technical adequacy, content quality, specific content and appearance (Chang & Chen, 2008) [3], [31], perceived ease of use, perceived usefulness, perceived social presence, trust, enjoyment (Hassanein & Head, 2007) [17], [20], [29], site design, convenience, financial security, product information, product offering (Moharrer et al., 2006) [27], website design, reliability, responsiveness, trust, personalization (Lee & Lin, 2005) [24], reliability/prompt responses, access, ease of use, attentiveness, security, credibility (Jun et al., 2004) [20], usefulness, ease of use, enjoyment (Monsuwe et al., 2004) [26], ease of use, information quality, website design, customer service, process controllability and outcome quality (Su et al., 2008) [34], ease of use, security, responsiveness, empathy, customization (Madu & Madu, 2002) [16], [21] and content website and design website (Huizingh, 2000) [17]. Therefore, this study adapted the Barnes and Vidgen’s (2006) [2] model that focusing on usability of use, information quality, website design, trust and empathy. Another dimension, perceived risk, is added to the model due to its role in influencing online consumer behavior (Grabner-Kraeuter & Faullant, 2008; So & Sculli, 2002) [14].

2.1 Usability

According to Koufaris, 2002 [23], perceived usefulness for online purchase can be defined as the prospective consumer’s subjective probability that using the internet will efficiently facilitate his or her purchasing (cited in Chiu et al., 2005) [6]. At the same time, perceived ease of use for online purchasing refers to the degree to which the prospective consumer expects the online purchases to be free of effort. In their study, Barnes & Vidgen (2006) [2] operationalized the construct ‘usability’
as consumers perceive the website as easy to learn and to operate, easy to navigate, easy to use and the interactive with the website is clear and understandable. The Technology Acceptance Model (TAM) assumes that a user’s attitude toward a technology is determined by their perception of usefulness and ease of use of that technology and that this attitude influences their intention to use the technology (Smith, 2004) [32]. Moreover, Childers et al., (2001) [5] in their empirical study also found that usefulness is the primary determinant of behavioral intention to use a technology, with ease of use and enjoyment acting as secondary determinants. Thus, it is proposed that usability of online website is positively associated with consumers online purchase intention.

H1: Usability of online website is positively associated with consumers’ online purchase intention.

2.2 Website Design
The Websites should also focus on its content as it has been identified as one of the main factors contributing to repeat visits. Content on the web includes text, pictures, graphics, layout, sound, motion and, someday, even smell, making the right web content decisions are critical to effective web design. While studies start to explore marketing strategies that attract visitors to websites, how to convert web surfers to repeat visitors is a not well-understood (Rosen & Purinton, 2004) [31]. In their study they identified underlying dimensions of effective website design and provide insight into site design characteristics that lead to a higher likelihood of revisit. Website features such as hyperlinks, navigation bars and sitemaps provide flexible feature by allowing user to browse in a non-linear fashion and the ability to jump to different parts of the website without backtracking. This is a double-edged sword, because it also makes the web site more sophisticated and difficult for the user to learn and remember his/her movements in the Website. Furthermore, frequent change of web pages means a repeat visitor will have to re-learn his/her way about the website. Moreover, as websites expand in size and complexity, they have to be designed to reduce the user’s browsing efforts in completing his or her task.

Generally, research in website design suggests that providing richer media with more real environment has more positive influence with user’s involvement (Hausman & Siekpe, 2009) [18]. Hence, it is hypothesized that:

H2: Website Design is positively associated with consumers online purchase intention.

2.3 Information Quality
Information quality refers to the amount, accuracy and the form of information about the products and services offered on a web site (Nusair et al., 2008) [10]. The initial purpose of the website is to attract the attention of the potential customer through a myriad of product and services that offer value (Smith, 2004) [32]. Website presentation will ensure potential customer to be initially drawn in, but the website content is still the critical issue in online purchase. Fancy design and presentation will only draw at the initial stage but without good valuable content, consumers might likely to venture elsewhere. Hence, it is hypothesized that:

H3: Information quality of website is positively associated with consumers online purchase intention.

2.4 Trust
Trust is defined as dimension of a business relationship that determines the level to which each party feels they can rely on the integrity of the promise offered by the other (Kolsaker & Payne, 2002) [22]. On the other hand, trust is characterized by uncertainty, vulnerability and dependence. These characteristics are reflected in an online transaction, where customers cannot see the seller face to face, physically examine the merchandise or collect the merchandise upon payment. The expectation of getting the right delivery is based on belief in the merchant’s technical competence, goodwill and past experience with the online retailer. The social exchange theory believes that people form exchange relationship on the basis of trust. In addition, customers typically perceive higher risk compared to a conventional shopping environment which is caused by distance, virtual identity and lack of regulation. Therefore, trust is the preliminary condition to consumers’ e-commerce participation (Corbitta et al., 2003) [9]. Hence, it is hypothesized that:

H4: Trust of website is positively associated with consumers online purchase intention.

2.5 Perceived Risk
Perceived risk is defined as uncertainties of possible negative consequences of using a product or service and in this study; perceived risk refers to the uncertainties associated with possible negative consequences of using e-ticketing (Dehbashi & Nahavandi, 2007) [10] particularly in regards to low-cost carrier air services. The exchange of information via the Internet can bring about several risks that either are caused by functional defects or security problems in information and communication technical systems (system-dependent uncertainty) or can be explained by the conduct of actors who are involved in the online transaction (transaction specific uncertainty) (Grabner-Kräutler, 2002) [14]. Moreover, consumers are reluctant to give personal information particularly data on financial status and credit facilities to the internet due to the fact that there is no direct eye-contact and thus, consumers are concern about unauthorized use of their private information that could cost them considerable financial loss (Grabner-Kräuter & Faullant, 2008) [14]. Thus, to reduce this negative perception and attitude, airline service providers need to understand aspects of perceived risk from the perspective of its consumers in regards to e-ticketing purchase intention. Thus, it is hypothesized that:
H5: Risk perception on website is negatively associated with consumers online purchase intention.

2.6 Empathy
Empathy is a non direct human element interaction that deals with the provision of caring and individualized attention to customers such as e-mail communication. This includes providing individualized attention to customer concerns and request rather than a generic auto reply (Madu & Madu, 2002) [16, [21]. Other researchers associated empathy as ‘personalization’ which includes understanding the specific needs of customers and providing service related convenience (Nusair & Kandampully, 2008) [29]. Generally, the personalization is a unique dimension that does not exist in many travel sites and as a result by providing personalized services to customers would help to enhance value (Nusair and Kandampully, 2008) [29]. Hence, it is hypothesized that:

H6: Empathy feature of online service is positively associated with consumers online purchase intention.

3. RESEARCH FRAMEWORK AND HYPOTHESES
This study adapted the Barnes & Vidgen’s (2006) [2] model which focusing on usability, website design, information quality, trust and empathy as website quality factors. Perceived risk is added to the model due its role in influencing online consumer behavior (Grabner-Kraeuter & Faulnant, 2008; So & Sculli, 2002) [16], [33]. A review of the literature on website evaluation revealed no comprehensive instruments aimed at airlines web services. Therefore, we adapted the quality statements items which consist of usability or ease of use and empathy which were adapted from Barnes & Vidgen (2006) [2], information quality and website design were adapted from Su et al., (2008) [19], [34], trust, perceived risk and purchase intentions are adapted from Chang & Chen (2008) [3]. These constructs were selected due to their frequently appeared in website quality research and their acceptable constructs reliabilities. The proposed research framework is presented in Fig. 1.

3.1 RESEARCH METHOD
3.1.1 Sample
The sample consists of online users, both students and working adults in Klang Valley, Malaysia. Students were chosen because they had experience browsing and/or purchasing products online. In general, college students are more likely than older adults to use the internet. However, type of usage varies by age, with internet users younger than 29 more likely to engage in communication and creative activities, but less likely to purchase online than users aged 29–69 (Rainie & Horrigan, 2005 cited in Ha, 2008) [7], [13], [6]. Thus, working adults not only students were invited to participate in this study. One of Malaysia-based the low-cost carrier service providers’ website and e-ticketing service was used to test the model.

Due to lack of proper sampling frame with regard to online users in Malaysia, a snowballing sampling method was used. In social science research, snowball sampling is a technique for developing a research sample where existing study subjects recruit future subject from among their acquaintances and the sample group appears will grow like a rolling snowball. This study adopted this technique due to its practicality and also better way to filter samples that already experience browsing airline service website. Participations were on voluntary basis; students and working adults were ensured of their anonymous contributions.

A sum of 208 usable questionnaires was collected. The questionnaires were first check for any missing items (data) and to ensure that all respondents have experienced browsing the airline service websites. Of the 208 respondents, 51.4 percent were females and 48.6 percent were males; 52.3 percent were single and 47.7 percent were marries. As for the age group, 28.4 percent of the respondents were in the range of 24-29; 22.6 percent, 23 and below; 21.2 percent, 30-35; 16.9 percent, 36-41; 9.7 percent, 42-47 and 1 percent were in the range of 48-53.

3.1.2 Measurement
The structure questionnaire consists of eight sections: usability, website design, information quality, trust, perceived risk, empathy, online purchase intention and demographic information. It includes 54 questions, covering the constructs proposed in Fig. 1. A 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) is used as a measurement scale. Measurement items of website quality dimensions were adapted from few studies. Usability and empathy are adopted from Barnes and Vidgen’s (2006) [2] measurement instruments. Information quality and website design are adopted from Su et al.’s, (2008) [9], [34] model. Trust, perceived risk and purchase intention measurement items are adapted from Chang and Chen’s (2008) [3] study. In the study, some of the measurement statements were modified in term of wordings to reflect the aviation industry and to ease respondents in answering the questions.

3.1.3 Data Analysis
The collected data was input into Statistical Package for the
Social Sciences (SPSS) software for analysis. In order to test the reliability and internal consistency of each factor, Cronbach’s alpha scores were calculated. As shown in Table I, the constructs’ reliability scores are ranging from 0.871 to 0.947. These are above the minimum acceptable level of 0.8 (Lance et al., 2006). Table I refers to the measurement of reliability to the hypothesis that has been used in this research.

| TABLE I  
<table>
<thead>
<tr>
<th>Reliability Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructs</td>
</tr>
<tr>
<td>Usability</td>
</tr>
<tr>
<td>Website Design</td>
</tr>
<tr>
<td>Information Quality</td>
</tr>
<tr>
<td>Trust</td>
</tr>
<tr>
<td>Perceived Risk</td>
</tr>
<tr>
<td>Empathy</td>
</tr>
<tr>
<td>Purchase Intention</td>
</tr>
</tbody>
</table>

Pearson’s product moment coefficients of correlations were calculated as initial statistical analysis to examine the relationship between website quality dimensions and online purchase intention. Correlation coefficient is generally used by measure two random variables of a sample which are linearly associated and has properties closely related to those of straight-line regression (Kleinbaum et al., 2008) [21]. Table II shows the correlation between the website quality factors and online purchase intention. The results indicated that these constructs are related and supported for further analysis. Table II refers to the hypothesis that was being used in this research that’s correlates between the website quality factors and online purchase intention towards the airline users.

| TABLE II  
| Correlation between website quality factors and online purchase intention |
|------------------|------------------|------------------|------------------|------------------|
| Construct        | Usability | Web design quality | Trust | Perceived risk | Empathy | Purchase intention |
| Web design       | 0.650**   | 0.448**            | 0.484** | -0.210**       | 0.266** | 0.402**            |
| Info quality     | 0.659**   | 0.582**            | 0.580** | -0.057         | 0.426** | 0.437**            |
| Trust            | 0.582**   | 0.580**            | 0.445** | 0.146*         | 0.437** | 0.450**            |
| Perceived risk   | -0.210**  | -0.057            | -0.097  | 0.210**        | 0.450** | 0.491**            |
| Empathy          | 0.266**   | 0.426**            | 0.437** | 0.445**        | 0.450** | 0.491**            |
| Purchase         | 0.402**   | 0.437**            | 0.450** | -0.077        | 0.459** | 0.491**            |

*p<0.01, **p<0.05, ***p<0.01

3.1.4 Results and Discussions

Multiple regressions were then conducted to test the hypotheses. The overall model for the multiple regressions was assessed by F statistics. From Table III, it is obvious that 33.3 percent of the variance in online purchase intention is explained by the overall model (F = 17.9, p < 0.05). Two independent variables; trust and empathy had statistically significant relationship with online purchase intention at 0.05 level. The empathy dimension possesses stronger impact on purchase intention. Usability was significantly related to purchase intention at alpha level of 0.10. Thus, Hypotheses 4 and 6 were supported and Hypothesis 1 was partially supported (straight lines in Fig. 1). Hypotheses 2, 3 and 5 were supported (doted lines in Fig. 1).

| TABLE III  
| Multiple regression result of website quality factors predicting the level of online purchase intention |
|------------------|------------------|------------------|------------------|------------------|
| Independent Factor | B                | Std. Error       | Beta             | t                |
| (Constant)        | 15.234            | .371             | 41.099           | .000             |
| Usability         | .117              | .059             | .152*            | 1.975            | .050           |
| Design            | -.012             | .087             | -.013            | -1.41            | .888           |
| Quality           | .125              | .074             | .137             | 1.683            | .094           |
| Trust             | .192              | .068             | .217***          | 2.815            | .005           |
| Risk              | -.033             | .034             | -.060            | -2.974           | .331           |
| Empathy           | .222              | .055             | .146*            | 4.024            | .000           |

*p<0.10; **P<0.05; ***P<0.01; two-tailed test

Dependent Variable = Intention

From the results, there are possibility that both trust and empathy play a mediating role in the relationship between the other independent constructs (usability, website design, information quality and perceived risk) and dependent construct (online purchase intention). This assumption is made on the basis that trust and empathy which is affective components of attitudes might mediates the cognitive or perception of consumers towards its website quality factors which would later influenced the consumers online purchase intention.

In the study, there is a significant and positive relationship between empathy and online purchase intention. This finding contradict the findings of Loonam & O’Loughlin (2008) [25], where it is found that empathy is a redundant factor in consumers perception of overall website quality. This may be true due to different context of study, whereby the study by Loonam & O’Loughlin [25] explore consumers’ e-banking interaction and experiences looking from the process and outcome perspectives. In the current study, empathy is look upon as a standalone construct to service quality.

The oppose result may also due to the different industry involved (e-banking vs. airline). Empathy refers to the extent to which a website provides caring, individualized information and intention to customers and is of great important to hospitality services such as airline industry. Moreover each
services provider has different nature of communication that exists between them and their customer.

4. CONCLUSION
E-commerce force changes in the shopping habit of customers. Customer no longer relies solely on physical cue for their purchase decision. Online environment cue such as website quality, trust and empathy are found to be the critical cue that effect customer purchase intention. This study reveals that usability, website design, information quality, trust and empathy are positively related online purchase intention. The findings reinforce the need to develop website quality, trust and empathy to increase online purchase intention. In order to strengthen competitiveness, service provider should pay more attention on website quality in the form of improving the website usability, design and information quality. This is because these factors might influence online purchase intention. On top of that, they also need to increase consumers’ trust towards their services. Another crucial factor that the services-provider needs to focus on is customer relationship because this will increased sense of empathy to the customers. Service provider needs to search for ways to enhance their customer relationship management (CRM) that earn customer trust and perceived empathy. Providing product and services that is competent, excellent and reliable may increase customer trust. Therefore service providers need to restructure their e-CRM strategy to create and maintain a two-way relationship to improve customer online purchase intention. Since empathy plays a major role in influencing the customer online purchase intention, it is suggested that airline service providers incorporate interactive website activities within the contact of Business to Consumers interface. Like any other study, this study is not without its limitation. Care should be taken when generalizing the result of this study. The study only provides some initial findings in investigating the factors that contribute directly to the online purchase intention with regard to low-cost carrier service industry. As mentioned earlier in the literature review, website quality is a multi-faceted concept. However, this study only explore six factors namely usability, website design, information quality, trust, perceived risk and empathy. Other component of website quality may yield different result. Thus, future study should explore other dimension that is not cover in the study.

While this study focused on users’ perception of web sites based on browsing experience, as the browsing took place prior to the data collection, the effect of timing on the changes in their perception of the importance of various web quality factors was not discovered. There might be other factors such as internet experience and knowledge, incentive programmed, awareness and brand image that influence customer perception of website quality. However these factors are outwith the scope of this study. Therefore we suggest future research to explore their impact on online purchase intention. The results of this study suggest that there are possibility that both trust and empathy play a mediating role in the relationship between the four constructs (usability, website design, information quality and perceived risk) and online purchase intention. Therefore future research should examine the mediating effect of affective features (trust and empathy) on purchase intention.

REFERENCES
Commonly Reported Cutoff Criteria. What Did They Really Say?
Organizational Research Methods, 9(2), 202-220.


Mohd Fazli Mohd Sam was born in a city call Malacca, Malaysia on the July 26, 1975. First degree is in Electrical Engineering major in Power System from University of Technology Malaysia (UTM), Skudai, Johor, Malaysia in the year 2000. Masters degree is in Business Administration from University Technology MARA, Malacca, Malaysia in the year 2006. Currently, major field of study is in IT facility management.

He had been a lecturer for eight years and most of the previous job was on the technical site (electrical-industrial and domestic). Before being a lecturer, he had gain knowledge and skill from the industries. Currently, he is been attach with University of Technical Malaysia Melaka under the Faculty of Technology Management and Technopreneurship. He is being assigned as the Head of Department Technology Management. He is one of the main co-coordinators for the University/MDeC Business Plan /Business Idea Competition and made the university proud by achieving First Prize winner in the competition for the year 2009/2010. His research interests are on IT facility management and technology management and currently he is doing research in IT facility relating towards technology adoption in SME.