TECHNOLOGY ACCEPTANCE OF A TRAVEL WEBSITE: AN EXPLORATORY STUDY

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ABSTRACT

This study aims at examining the reasons that motivate travelers to use online travel websites for travel information search and reservations by adapting the technology acceptance model (TAM) (Davis, 1989). In particular it examines the site of an online travel guide. The results suggest that perceived usefulness determines behavioral intention to use the travel website. Perceived ease of use does not have a direct impact on behavioral intention; however, it influences perceived usefulness and behavioral intention indirectly. This study benefits practitioners in the pre-implementation stage to overcome complaints that system characteristics are arbitrary or in the post-implementation stage to determine the kinds of changes that provide the most meaningful impacts.

Keywords: Travel Website, Travel Intermediary, TAM, Internet Use

INTRODUCTION

The proportion of people using the Internet to research and book travel has increased in recent years. In fact the Internet has become “a crucial medium for information delivery and acquisition” [27]. Although the Internet is not replacing traditional media and methods of travel information seeking, researchers have found that the Internet is affecting the media consumption patterns of travelers [5]. While more and more travelers are using the Internet for travel information seeking, it has become extremely important for travel intermediaries, suppliers and destinations to understand this new user population. The factors which influence the use of a travel website are important concerns for practitioners who intend to improve the effectiveness and efficiency of the travel websites. Despite the fact that the travel industry is generally optimistic about the growing importance of the Internet in tourism, there are ways in which its use could be made more effective.

Travel-related websites are not as user-friendly as they could be [33]. Some sites are used for booking, some for information only and some for both. Users often get frustrated when trying to book online, even CEOs of online travel portal companies [42]. Studies of travel websites in different countries suggest that the low level of usability has constrained the use of the Internet to advertising rather than marketing [50] [32] [4] [41]. Secondly, some tourism Websites showed low content delivery performance (e.g., sensory appeal, trust building, dynamic sites, and permission marketing). An analysis of Chinese travel websites showed low content delivery performance that made it difficult for tour operators to remain viable [8]. These problems (i.e., usability and content delivery performance) have hindered the use of travel websites, and suggest that improving user acceptance would increase their usage even more. The goal of this study is to have a better understanding of the reasons why travelers choose to use certain travel websites.

In the travel and tourism domain, the diffusion of innovation theory by [37] has been applied in studying the attributes that influence travelers’ adoption decisions. The innovation attributes, relative advantage, compatibility, trialability, observability, complexity, and perceived risk, were found to be significant determinants of travelers’ adoption decisions and practices toward Web-based ticketing [9]. In addition, relative advantage, compatibility, and complexity were found to be important factors for Chinese users using a travel booking website [26]. However, only a few studies have focused on the motivations for using travel websites by applying theories from the Information Systems (IS) literature. For example, the technology acceptance model (TAM) [10] is an IS theory which contributes greatly to our knowledge of the
use of technology innovations [24] [25]. It has been applied in exploring the motivations of using web-based systems [30] [47] and it has potential in examining the reasons that travelers use travel websites given its applicability in related domains.

The primary purpose of this study is to explore the reasons that motivate travelers use a travel website. There are many types of travel websites: travel suppliers’ sites (e.g., hotels, airlines), online travel intermediaries, travel portals, travel search engines, online travel guides and destination sites. This study will focus on travel intermediary sites. The second purpose of the study is to identify the most important factors impacting travelers’ intention to use a travel website. The technology acceptance model is applied to investigate the above issues. We expect to find that the constructs in TAM explain the use of the travel websites.

LITERATURE REVIEW

The Increasing Use of Travel Websites

The Internet is a major information source for travelers to acquire information, plan their trips, make reservations, and exchange experiences, thoughts, and emotions. In contrast, the use of traditional travel intermediaries and information sources (travel agents, tour operators, broadcast and print media, tourism information centers, and travel shows) are declining [29] [52]. Next to family and friends, however, the Internet has been found to be the travelers’ most important source of information [36]. The increased use of the Internet as an information source has significant impacts on the travel industry.

First, the more travelers use the websites for information, the more likely they will visit the destinations. A study on the tourism website of Arkansas Department of Parks and Tourism found that the use of their website had been steadily increasing and the conversion rate of web users to Arkansas visitors was very high [29]. Likewise, people who visit destination management organization (DMO) websites have higher actual rates of visits to the destinations [40]. Secondly, new opportunities and challenges emerge along with the development of information marketplaces and e-commerce. In tourism, intermediaries (e.g., travel agencies, tour operators, handling agencies, and conference organizers) are often involved in the process of promoting, selling, and distributing goods to final buyers [7]. The Internet has created disintermediation in which travel agents and other intermediaries are replaced by suppliers selling directly to the consumer. On-line travel agents or portals have fuelled this trend toward dis-intermediation. For example, many sites such as Travelocity.com and Expedia.com sell travel products directly to the consumer and have cut into the traditional travel agents’ market share [55].

On the other hand, the Internet brings new opportunities to the tourism industry by creating a new generation of online intermediaries, a process called re-intermediation [55]. It offers opportunities for traditional retailers and intermediaries to increase their global market share. Some travel agencies have created an on-line presence in addition to a physical presence (often referred to as “bricks and clicks”), some new “cyber agencies” have been created, and in other cases, travelers are returning to the traditional travel agent to get professional advice on their travels after being overwhelmed and lost in the plethora of information on the Internet. In other words, the Internet has the potential to fuel both the dis-intermediation and the re-intermediation trends [55].

While both types of travel intermediary, travel agent (face-to-face) and Internet (cyberspace), are available to purchasers, researchers found that previous Internet purchasing experience was a crucial factor of actual travel purchases. Empirical evidence drawn from the Israeli travel market suggested that actual travel purchases are closely related to previous Internet purchasing experience rather than to the socio-economic attributes of the purchaser [13].

A New Information Source

The Internet is different than traditional media in its capacities of information representation, collaboration, communication, interactivity, and transactions [15]. It offers the ability to create a virtual community in which users can share their travel experiences, emotions, and thoughts [39]. The information provision can be not only from travel agencies to travelers but also from travelers to travelers. In fact, user-generated content on web-sites is becoming increasingly important. The Internet also allows travelers to easily compare prices of a broad array of travel products. Travelers often search online travel sites to compare travel prices instead of browsing the supplier’s websites [31]. Travel search engines such as Sidestep.com and Kayak.com have become especially important in this arena. Travel websites used for travel information search are numerous and diversified. Internet users may link to travel information on a destination’s website and have access to general search engines (e.g., google.com, yahoo.com), general travel portals (e.g., expedia.com, orbitz.com, hotwire.com), local official tourism offices, websites of local attractions, information portals provided by different commercial parties, and general recreational and educational websites [34]. Internet users may also deal with online travel agencies and online tour operators who were traditional travel companies but now embrace the Internet to increase their business [8].

In the current study, a multi-faceted travel website (LonelyPlanet.com) was used. This website allows users to search for information on specific destinations worldwide, to purchase travel products, to exchange information with other travelers.
in chat rooms and to purchase travel insurance, and to read or purchase guides and books. The strength of the site is more oriented toward travel information (since it originated as a travel guide) than toward travel reservations. In the earlier discussion, we suggested that the reasons why travelers use a travel website can be explored by applying the technology acceptance model (TAM) [10]. In the following subsection, we turn the discussion to TAM and subsequently present the methodology of this study.

**The Technology Acceptance Model**

The Technology Acceptance Model (TAM) was developed to explain the adoption of information technology (IT). It is built upon the theory of reasoned actions (TRA) [12] which holds that a user’s behavior is predicted by his/her behavioral intention. TRA postulates that behavioral intention is governed by subjective norms and attitudes toward the behavior. It is widely used for explaining cognitive and affective aspects of human behavior. The belief-attitude-intention-behavior relationship is supported by a wide variety of literature [38] [16] [6] [54].

Derived from TRA, TAM posits two belief constructs to explain system use: perceived usefulness and perceived ease of use. Perceived usefulness refers to “the degree to which a person believes that using a particular system would enhance his or her job performance.” In contrast, perceived ease of use refers to “the degree to which a person believes that using a particular system would be free of effort” [10, p. 320]. As can be seen in Figure 1, these two beliefs, perceived usefulness and perceived ease of use, are determinants of behavioral intention. Additionally, perceived ease of use has influence on behavioral intention through two causal pathways, a direct effect as well as an indirect effect through perceived usefulness. In general, perceived usefulness was found to be more influential than perceived ease of use in driving behavioral intention.

TAM has been supported by studies across contexts and user groups. For instance, the use of microcomputers by professionals and managers in small firms was determined by perceived usefulness [17]. MBA students in surveys and lab experiments report that both perceived usefulness and perceived ease of use predict computer software use. Also, perceived usefulness and perceived ease of use were found to be predictors of the Internet use [3] [46] [30] [47] [22].

Davis, Bagozzi, and Warshaw [11] noted that perceived usefulness was considered a motivation to engage with the use of an information system, whereas perceived ease of use was regarded as an antecedent of perceived usefulness. They further explained that perceived usefulness was extrinsic motivation “that is concerned with performance as a consequence of use; as a result, it is regarded as an extrinsic motivation of system use.” In other words, users may find a system useful to increase their job performance or their work and then they will intend to adopt the system; therefore, users’ extrinsic motivation plays a crucial role, according to TAM, in system adoption decision.

**Travelers’ Perception toward Internet**

Previous studies suggest that travelers perceived the Internet an easy and convenient way of reviewing information. Complexity, an innovation attribute that is opposite to easy of use, was found to be negatively related to the adoption of innovation [37] and this attribute was also found to be negatively related to the ticketing transaction on a travel website [9]. Research on travel bookings in China also suggested that complexity reduced the intention to e-shop. It was found that a less complicated on-line booking procedure will increase Internet users’ intention to e-shop [26], echoing previous studies which suggest that a simple innovation will be adopted faster than a complicated one [37]. Some travelers consider the Internet to enable them to gather information at their own convenience and to offer just as extensive background information as a travel agent [5]. On the other hand, research has found that perceived usefulness influences travelers’ adoption behavior. Relative advantage, a construct representing perceived usefulness [49], was found to be an indicator of travelers’ intention to adopt e-shop [9] [26].

Jeong and Lambert [18] found that the information quality of simulated lodging websites could be determined by perceived ease of use and perceived of usefulness. In comparison with perceived ease of use ($\beta = 0.13$), perceived
usefulness ($\beta = 0.57$) had great impact on the intention to use information. In addition, perceived ease of use, perceived usefulness, and intention to use information affected actual information use directly and positively. Also, perceived ease of use, perceived usefulness, and intention to use information were found to be significant indicators to predict customers’ purchase behavior using lodging websites. A follow-up study on website quality in the lodging industry yielded consistent results on the effects of perceived ease of use and perceived usefulness. Of four lodging segments (luxury, upscale, mid-scale, and economy), analyses on luxury and economy and in part on the mid-scale segments suggested that perceived ease of use effected the behavioral intention to use information, mediated by information satisfaction [19].

Intention to use online reservation systems was found to be determined by perceived ease of use and perceived usefulness [21]. A study that surveyed customers of eight hotels with online hotel reservations found that perceived ease of use predicted the intention to use. Respondents reported that ease of information search had impact on their intention to use the online reservation systems. More specifically, ease of information search included finding hotel contact information with two clicks on the hotel website, displaying frequently requested information on the first page with hyperlinks, and offering sufficient information (e.g., variety of choices and comparing hotels) for customer’s reservation decision-making [21]. Researchers investigated the employees of travel agencies where Computerized Reservation Systems (CRS) were adopted and they found that both perceived ease of use and perceived usefulness, moderated by organizational support and supplier incentive, were significantly associated with intention to use. Again, perceived usefulness was found to be a stronger predictor than perceived ease of use [23].

Travel managers’ adoption of marketing decision support systems (MDSS) was found to be determined by perceived ease of use and perceived usefulness. Drawing on a survey of 77 tourism managers located 30 different countries; researchers found the two belief constructs were dominant factors affecting actual use of systems. Significant relationships were found among perceived ease of use, perceived usefulness, and actual usage by performing structural equation modeling analysis [53].

In general, predictive models of system adoption involve social, personal, and system factors. System factors (e.g., usability) are essential because they can be directly influenced by the management of the system. For example, perceived ease of use and perceived usefulness are system usability factors that can be managed in order to evoke user acceptance [56]. In summary, the technology acceptance model (TAM) [10] is a predictive model which was applied in various travel technology innovations. The model is useful in investigating user’s intention to use a travel website.

**METHODOLOGY**

The context of this experiment is the Lonely Planet website (LonelyPlanet.com), a guidebook-style site with detailed information to assist the consumer in selecting a destination [44]. The Lonely Planet was originally a travel guide handbook. Its online counterpart is a diverse travel information site which also provides links to travel product booking engines and offers the ability to create a virtual community in which travelers can share their experiences, emotions, and thoughts in the online forum [33]. The online community functionalities enable users to have diverse travel searching experiences. Other notable functions include travel review and discussion forums where travelers can obtain the insightful reviews of travel products such as hotels and cruises through the lively discussion forums [51]. The Lonely Planet website is very effective and is an excellent reference site providing detailed destination information and direct links to travel search engines and booking sites [5]. It was also considered as one of the important new players in the online travel market in year 2003, listed concurrently with websites such as expedia.com, orbitz.com, and priceline.com [55].

The context was chosen because the Lonely Planet is an exemplary new business model which provides travelers with an innovative searching experience. From the travelers’ perspective, an online travel community has revolutionized the way in which participants behave and interact with each other, the way they access resources, and the rules for conducting business [51]. From a business perspective, the online community has been depicted as an innovative commercial model of Internet development and an effective tool for customer relationship management. It is believed that the online community as a basic business model will increase in importance in the coming years as the Internet becomes more pervasive in the new global economy [51].

A total of 54 subjects at a major U.S. university participated in performing the tasks below in order to earn extra credit in an introductory statistics course. On arrival at the laboratory, subjects were randomly assigned to a networked computer with the Lonely Planet website appearing on the computer screen. They participated in a 10-minute demonstration session that familiarized them with the website and then they were asked to finish three tasks: finding information on interactive world map, finding a topic in an online forum attracting his/her attention, and finding a hotel in a city that he/she wants to visit. The tasks aimed to give subjects hands-on experience in using the Lonely Planet website. Our focus was to understand subjects’ perception toward the Website, so the subjects were asked to complete an online questionnaire after completing the three tasks. Since our focus of attention was to understand subjects’ perception toward the Lonely Planet website, they were not instructed to actually book a hotel room online or to make a reservation. The questionnaire included seventeen items representing three TAM constructs as identified in Figure 1, as well as a series of demographic items. Each question was measured on a seven-point Likert-type scale ranging from 1 to 7. Items of perceived ease of use and perceived usefulness were adapted from Davis [10] whereas items of behavioral intention
were adapted from TAM studies \[10\] \[2\] \[45\] \[48\]. The wording of the items was modified to fit the context of the study. The experiment was voluntary, so the subjects were free to decline to participate in the experiment and could elect to leave the experiment incomplete. The time of data collection was mid-November, 2004. Of the 54 students involved in the experiment, 62.96\% were male and they ranged in age from 18 to 55. Most of the subjects (68.51\%) were juniors in college.

**RESULTS**

The results of multiple regression analysis showed that the effect of perceived usefulness (PU) (\( \beta = 0.43, p < .01 \)) on behavioral intention was significant. However, perceived ease of use (PEU) (\( \beta = 0.24, \text{n.s.} \)) did not have significant impact to behavioral intention (BI). Since TAM postulates that perceived ease of use affects perceived usefulness, which in turn affects behavioral intention, it is likely that perceived ease of use has an indirect effect on behavioral intention. From the significance tests and regression coefficients we can infer the indirect effect of perceived ease of use in behavioral intention (see below). The two belief constructs together accounted for 56.31\% of variance in behavioral intention (F = 32.87, \( df = 2/51, p < .001 \)). Although perceived ease of use did not have a direct impact on behavioral intention, perceived ease of use influenced perceived usefulness, accounting for 69.75\% of variance in perceived usefulness (F = 119.92, \( df = 1/52, p < .001 \)). Figure 2 shows the results of multiple regression analysis.

![Figure 2. The Proposed Research Model](image)

Note: PE= Perceived Usefulness; PEU= Perceived Ease of Use; BI = Behavioral Intention

\( N = 54 \)  *p<.05, **p<.01, ***p<.001

As stated earlier, perceived ease of use has an indirect effect on behavioral intention. The indirect effect can be estimated by the following formula [35, p. 787] [28, p. 10]:

\[
F_{\text{PEU BI}} = F_{\text{PU BI}} * F_{\text{PEU PU}}
\]

The correlation (\( r \)) between of PEU and BI can be estimated by multiplying the standardized regression coefficient of PU to BI times the standardized regression coefficient of PEU to PU. As the result, \( r_{\text{PEU BI}} = 0.43 * 0.87 = 0.374 \). If we square that \( r \), the resulting \( r^2 \) is interpreted as the variance of the dependant variable that is accounted for by the independent variable [35, p. 24], so we concluded that there was 13.98\% (0.374*0.374 = 0.1398) of the variance of behavioral intention due to perceived ease of use. This result was different than previous studies which suggested that both perceived ease of use and perceived usefulness were independent direct predictors of behavioral intention [10] [1]. Perceived usefulness explains substantial variance in behavioral intention. More than 56\% of variance in behavioral intention is explained by perceived usefulness indicating that the users of the Lonely Planet website intended to use the Website because it was a useful information source. All in all, perceived usefulness was the dominant motivation that predicted behavioral intention. A possible explanation for the non-significance of perceived ease of use is that the system under investigation was relatively ease to use, so perceived ease of use may not have been an important direct indicator of intention [43].

**DISCUSSION**

This study applied the technology acceptance model to investigate the intention to use a travel website. The experiment was conducted with 54 subjects who were juniors in a major U.S. university. The subjects were randomly assigned to networked computers with the Lonely Planet website appeared on the computer screens. Students were asked to complete the three tasks by using the Lonely Planet website and then completed a post-questionnaire with validated measures from Davis’ study [10]. Perceived usefulness was found to be a significant predictor of behavioral intention. Perceived ease of use had only an indirect effect on intention via its impact on perceived usefulness. The results are consistent with previous studies [20] [14] in that perceived usefulness predicts behavioral intention and the direct effect of perceive ease of use is often not significant. This indicates that travelers’ evaluation of the usefulness of the travel website strongly determines their future intention to use the Website while there is a weaker relationship
between ease of use and intention to use. These results can benefit practitioners in pre-implementation stage in overcoming complaints that system characteristics are arbitrary or in the post-implementation stage in determining what kinds of changes can provide the most meaningful impacts. Improving the usefulness of the travel website would be promising for the users’ adoption decision. In contrast, ease of use of the website may not be as prominent as usefulness; however, its indirect impact to intention to use was evident. Therefore, enhancing the travel service website’s ease of use is also important and worthy of pursuit. The implications of this study are two-fold. First, a meaningful relationship between perceived usefulness and behavioral intention when using the travel website was supported by empirical data. Secondly, this study illustrates how bringing the TAM theoretical perspective into the travel domain advances the knowledge and understanding of technology acceptance in the travel industry. This study provides insight into research, suggesting that a key motivation factor (i.e. perceived usefulness) impacts Internet users’ adoption decision in a travel service context. This theoretical effort not only gives the technology acceptance of travel websites a new direction to be explored and refined but also provides practitioners information in improving the usability of these websites.

Our findings provide meaningful implications; however, this study has several limitations. First, the results may not be generalizable to different user groups. The subjects were all college students who were not actually planning a real trip; therefore, the results cannot be generalized to the real travel planning experience or other settings and technology without further research. It is likely that Internet users’ behavior patterns and their adoption decisions on a travel website vary with their levels of Internet literacy, their reasons of travel (business or pleasure), whether they have visited a destination before, their lifestyles, and their socio-economic status. It is also not clear how generalizable these results are to other types of travel websites such as travel search engines or online travel agencies. Secondly, using questionnaires as the only data collection method may involve the measurement bias that typically occurs in research design. For example, the adoption decision of the travel website was measured by intention to use. Although past studies have commonly employed behavioral intention as a substitute for actual usage, this practice has been criticized. We gave full attention to the research design so we felt confident in the reliability and validity of the results; however, the results should be interpreted with caution, given that actual usage was not measured.

The boom of online travel has proven to be as much a challenge as it is an opportunity to tour operators, travel agencies, and travel information providers. With increasingly convenient access to travel service providers and information on the Internet, how a travel website performs in terms of usability and providing useful information to Internet users becomes more important in the competitive online travel marketplace. While the online travel marketplace is still in its development and is going through some rapid changes, understanding Internet users’ motivation of their intention to use a system contributes greatly to the success of the travel website. This study, indeed, provides empirical evidence to support the claim. Based on our findings, a travel website which is designed and implemented with users in mind is more likely to attract users’ attention and ultimately would be more competitive.

**BIOGRAPHICAL NOTES**

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Margaret Meiling Luo is assistant professor of Business Administration at Yuan-Ze University. She received her Ph.D. in Communication and Information Sciences at the University of Hawai‘i at Mānoa. Her research interests include the adoption and diffusion of information technologies, online information seeking behavior, and computer-mediated communication. Her work has been presented in conference and workshop, including Americas Conference on Information Systems and Organizations and Society in Information Systems Workshop. She has also published her work in Journal of Information Science and Technology. She had years of experience as a television anchorperson.

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**REFERENCE**


