Usage of International Tourism Night market Websites: The perspective of Technology Acceptance Model

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Abstract: Shihlin international tourism night market is one of the most popular scenic spots in Taiwan. Night market reflects the Taiwanese history, society, economy; and provides a true experience of modern Taiwan night life. Fueling by the wide spread uses of the internet, the technology-based website interactions are expected to become a key criterion for long-term business success. This study attempts to fit an extended technology acceptance model (TAM) that integrates theory of planned behavior to investigate what determines users' acceptance of night market websites. The proposed model was empirically tested using the structural equation modeling technique. Our findings indicated that all constructs significantly affected users' revisit intention except perceived behavior control. The implications for practitioners and suggestions for future research are also addressed in this study.

Key-Words: Technology Acceptance Model, Theory of Planned Behavior, subjective norm, perceived behavior control, reuse intention, night market tourism website.

1 Introduction
Taiwanese night markets are street markets operating at night, generally tend to have more leisurely strolling, shopping and eating areas than regular day markets. The night market reflects the Taiwanese history, society, and economics; it provides a true experience of modern Taiwan night life [8]. For international tourist, novel-seeking, exercising and experiencing local culture and customs are the major motives to visit tourist night markets [6]. Night markets in Taiwan have become one of the most popular tourism attractions for local people as well as for international tourists. According to the Tourism Bureau's statistical data in 2011, the total number of foreign tourist to Taiwan is about 3.63 million, and half of this number (1.78 million) is from China, contributing 11 billion USD to Taiwan's financial economy. Among all the scenic spots Shihlin night market is definitely the top one with 74.06% of the international tourists having visited, night market is becoming the essential part of the nightlife and a taken-for-granted place for most international and Chinese tourists to visit and consume. To collect the tourism information, 55% of international tourist use internet. As such, many international tourism night market websites were then created, gathering all necessary night market food-and-beverage or clothing information and facilitating the interaction for website users. Though with the potential and importance of night market tourism and related website applications, however, there has been very little if any research concerned
with the website usage of the night market context in Taiwan.

Fueling by the wide spread uses of the Internet and the application concept of “SOLOMO” (social, location and mobile), technology-based website interactions are expected to become a key criterion for long-term business success. On the other hand, loyal and returning customers are vital for online firms that offer content-based services, since these companies obtain a substantial part of their revenues from advertisers and partners [5]. To develop diagnostic tools to explain websites acceptance and to facilitate design change, it is essential to explore more insights into who are the potential websites user and why. Among all the models explaining IT usage, the technology acceptance model (TAM) has been the most commonly employed because of its robust and consistently good predictive record. To name a few: [9] explored instant messaging using TAM and flow theory; [10] applied TAM on e-shopping; [13] integrated innovation diffusion theory to TAM to determine mobil commerce acceptance. According to TAM, behavior intensity is a function of attitude, and perceived usefulness. Attitude is determined jointly by perceived usefulness and perceived ease of use. Finally, ease of use is a direct determinant of perceived usefulness. However, Social and control factors are not included in TAM and these variables are also key determinants of behavior in the Theory of Planned Behavior (TPB) [1], where subjective norm and perceived behavioral control are modelled as determinants of behavioral intention. Because of their predictive utility in IT usage research and because of their wide-spread application in social psychology, subjective norm and perceived behavioral control are added to TAM to provide a more complete set of the important determinants of website usage.

In light of the preceding discussion, through empirical data collection and analyses, the objective of this research is an attempt to: (1) propose and verify a TAM specific to the usage of Night market tourism application website, (2) identify the factors that determine consumers’ adoption of websites, and (3) find the differences in factors influencing the adoption among the four currently existing Taiwanese night market application websites. Based on the results, suggestions may be made to facilitate the design improvements of the night market websites.

The remainder of this paper is organized as follows. The current literature is reviewed and hypotheses are derived in Section 2. Research design is summarized in section 3. In Section 4, the results of data analyses is presented. Finally, conclusions are drawn and suggestions for future research are presented in the last section.

2 Theoretical Framework and Hypotheses

Factors influencing consumers’ adoption of technology can vary, depending on the technology, target consumers, and context [9]. In this section, research model and hypotheses will be developed based on the technology acceptance mode and theory of planned behavior.

2.1 Technology acceptance model (TAM)

Introduced by [4], TAM is based on theory of theory of reasoned action (TRA) [1], and suggests that behavioral intention to use an information system is dependent on perceived usefulness (PU) and ease of use (PEU). Perceived usefulness is defined as the prospective user’s subjective possibility that using a specific application system will increase his or her job performance and ease of use refers to the degree to which the prospective user expects the website to be free of effort. While an objective measurement of the extent to which an individual engages in a behavior would be ideal, it is not always easy or practical to obtain it. Luckily, both theoretical and empirical support exists for the strong correlation between intention to engage in a behavior and the actual behavior [12]. Both PU and PEU are expected to influence an individual’s attitude toward using the system, which in turn, together with perceived usefulness are hypothesized to explain the variance in intention to use the system. Attitude is defined as an individual’s overall evaluation of performing a behavior. TAM also incorporates a causal relationship between ease of use and perceived usefulness, suggesting that an individual’s perception of how easy or difficult it is to use a system will influence his/her perceptions about the usefulness of the system. However following [12], we omitted this path and instead, a path explaining the direct effect of perceived usefulness to websites usage intention was added as shown in fig.1. Based on these arguments, the followings are consequently hypothesized:

H1: Ease of use has a positive effect on the attitude toward websites.

H2: Usefulness has a positive effect on the attitude toward websites.
H3: Usefulness has a positive effect on the user’s intention to use websites.

H4: Attitude toward the website has a positive effect on the user’s intention to use websites.

2.2 Theory of planned behavior (TPB)

The TPB were also developed based on the theory of reasoned action [1], which argues that both behavioral control and subjective norm affect behavioral intention, which in turn affects the actual behavior. Subjective norm (SN) refers to users’ perception of whether other important people perceive they should engage in the behavior. Many internet users choose to use one of the websites only because their friends are the users of this website and are recommending them to use it [9]. Perceived behavioral control (PBC) describes users’ perception if they have the necessary resources, capability, and a sense of control in successfully performing the behavior. Although websites application is a relatively ease-to-use technology, users still need to have the basic internet skills to extract the necessary information. Therefore we put forward the following hypotheses.

H5: subjective norm has a positive effect on user’s intention to use websites.

H6: perceived behavior control has a positive effect on user’s intention to use websites.

The hypothesized model and research hypotheses is shown in Figure 1.

Fig. 1 The Proposed Conceptual Model and Research Hypotheses

3 Methodology and Research Design

3.1 Sample and Design of Survey

Participants in this study are mostly undergraduate and MBA students from Ming-Chuan universities, self-administered questionnaires were distributed in computer classes. The selection of subjects because most electronic service users are university students and Ming-Chuan University is located in the neighborhood of Shih-Lin International Tourism night market. A questionnaire was also posted on internet, colleagues and friends were invited to fill out the questionnaires. Four well-known night market websites: Taipei Gourmet network (http://food.taipei.emmm.tw), Night Market Intelligence (http://www.i-city.com.tw/markets/view/), Taiwan Night Market (http://tw10006.tw.tranews.com/) Happy Street Strolling (http://www.walkgoler.cc/), were identified as our research websites. In the beginning, participants were asked to carry on five missions on one of the above websites according to a randomization scheme to ensure the website was scanned thoroughly. For example, participants were asked to find out the location of “Prince Potato”, “Tokyo Fashion Clothes” and so on from the assigned website. Questionnaire can then be filled out according to his perception of the website. The survey yielded a total of 394 completed questionnaires. Since 34 questionnaires were invalid, and 350 responses were obtained and valid, including 67% females and 33% males. A majority (86%) of the subjects was between the ages of 18 and 30. Moreover, 86.94% of the respondents said they had recommended the Shilin market to their friends two or fewer times.

3.2 Measures

The research derived measures for key construct by using multiple-item perceptual scales that were validated instruments from prior studies and adapted them to the context of the present study. All constructs were measured with multiple items using 7-point Likert scales ranging from 1=strongly disagree to 7=strongly agree. Perceived usefulness and ease of use was adapted from [7]; attitude toward website was from [15]; intention to use night market website was from [14]; subjective norm and perceived behavior control was from [11]. The preliminary instrument was pilot tested and reviewed by faculty and doctoral students for clarity, and the questionnaire items were modified following a pretest of the survey instrument.
4 Data Analysis and Results

4.1 Convergent Validity and Discriminant Validity

We conducted the data analysis in two parts - scale validation and hypothesis testing. Scale validation proceeded in two phases: convergent validity and discriminant validity analyses. Convergent validity of scale items was assessed using three criteria: (1) all item factor loading (alpha) should be significant and exceed 0.5, (2) composite reliabilities (CR) for each construct should exceed 0.80, and (3) averaged variance extracted (AVE) for each construct should exceed 0.50. In addition, internal consistency reliability is generally considered a necessary but not sufficient condition for convergent validity. Hence Cronbach’s alpha was also computed for each construct, and it should be larger than 0.7. As expected in this study, standardized CFA loadings for all scale items in the CFA model are significant at p < 0.01 and exceed the minimum loading criterion of 0.50. Besides, as illustrated in Table 1, we can see that AVE of each construct exceeds 0.5, and composite reliabilities and Cronbach’s alpha of all factors also exceed the required minimum of 0.80 and 0.7. Hence all three conditions for convergent validity are met.

Meanwhile, discriminant validity means the degree to which measures of two constructs are empirically distinct [2]. Discriminant validity is shown when the square root of each construct’s AVE is larger than its correlations with other constructs [3]. As shown in Table 2, we can see that the discriminant validity criterion was also met for our data.

Table 1. Reliability, Correlation Coefficients and AVE Results

<table>
<thead>
<tr>
<th>construct</th>
<th>mean</th>
<th>S.D.</th>
<th>Cronbach’s CR</th>
<th>AVE</th>
<th>PU</th>
<th>PEU</th>
<th>ATD</th>
<th>SN</th>
<th>PBC</th>
<th>RUI</th>
</tr>
</thead>
<tbody>
<tr>
<td>PU</td>
<td>3.56</td>
<td>1.55</td>
<td>0.965</td>
<td>0.96</td>
<td>0.87</td>
<td>0.83</td>
<td>0.98</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEU</td>
<td>4.02</td>
<td>1.49</td>
<td>0.949</td>
<td>0.95</td>
<td>0.82</td>
<td>0.71</td>
<td>0.94</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATD</td>
<td>3.54</td>
<td>1.55</td>
<td>0.961</td>
<td>0.96</td>
<td>0.83</td>
<td>0.90</td>
<td>0.91</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SN</td>
<td>2.97</td>
<td>1.59</td>
<td>0.959</td>
<td>0.96</td>
<td>0.89</td>
<td>0.70</td>
<td>0.85</td>
<td>0.63</td>
<td>0.94</td>
<td></td>
</tr>
<tr>
<td>PBC</td>
<td>4.02</td>
<td>1.47</td>
<td>0.905</td>
<td>0.84</td>
<td>0.65</td>
<td>0.72</td>
<td>0.74</td>
<td>0.71</td>
<td>0.52</td>
<td>0.84</td>
</tr>
<tr>
<td>RUI</td>
<td>3.14</td>
<td>1.75</td>
<td>0.972</td>
<td>0.97</td>
<td>0.91</td>
<td>0.86</td>
<td>0.66</td>
<td>0.87</td>
<td>0.74</td>
<td>0.65</td>
</tr>
</tbody>
</table>

Notes:
- The main diagonal shows the square root of the AVE (averaged variance extracted).
- CR as for composite reliability, PU as perceived usefulness, PEU as for perceived ease of use, ATD as for attitude, SN as for subjective norm, PBC as for perceived behavior control, RUI as for reuse intention.

4.2 Hypothesis testing

To test the structural model, LISREL 8.80 was used. The results are presented in Figure 2. Chi-square value was 712.64 with 197 degrees of freedom. RMSEA was 0.077, GFI was 0.87, and CFI was 0.99. The explained variance of attitude toward using websites and behavioral intention, were 82% and 83% respectively. With regard to the specific hypotheses, we found that five paths in this model were significant, the path from perceived behavior control to reuse intention was the only that are not significant, thereby H6 being not supported.

4.3 Comparison of website acceptance

Analysis of variance was used to compare the mean acceptance of the four currently existing websites. Results were shown in table 2. We can see that “Happy Street Strolling” definitely outstand the rest three websites in terms of perceived usefulness and ease of use, attitude toward websites, and reuse intention.

Fig. 2. Results of Structural Model

Table 2 Construct means for the four existing websites

<table>
<thead>
<tr>
<th>Websites</th>
<th>PU</th>
<th>PEU</th>
<th>ATD</th>
<th>RUI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taipei Gourmet network</td>
<td>2.94</td>
<td>3.54</td>
<td>2.82</td>
<td>2.53</td>
</tr>
<tr>
<td>National Night Market Intelligence</td>
<td>3.45</td>
<td>3.86</td>
<td>3.55</td>
<td>2.96</td>
</tr>
<tr>
<td>Taiwan Night Market</td>
<td>3.35</td>
<td>3.85</td>
<td>3.31</td>
<td>2.93</td>
</tr>
<tr>
<td>Happy Street Strolling</td>
<td>4.36</td>
<td>4.73</td>
<td>4.40</td>
<td>4.00</td>
</tr>
</tbody>
</table>

p value $<$0.01 $<$0.01 $<$0.01 $<$0.01

5 Discussions

5.1 Conclusions and Managerial Implications

Shihlin international tourism night market, as one of the most population scenic spots for international tourists as well as for local people, has its importance in terms of both financial economy and social interaction, therefore deserves more attention. To facilitate tourists’ visit so that the trip to the night market can be more efficient and enjoyable, website is definitely a valuable tool. However, the design of websites can be very challenging, since night market
has its own unique physical structure with stores and food stands scattering around, and the motives of visiting ranging from novel seeking, shopping, to experiencing of local culture. This study attempts to expand our understandings of the online night market websites by examining an extended TAM model that may have crucial implications in the success of the websites. Our findings indicate that, the perceived ease of use and usefulness both had significant effects in inducing the positive attitude toward website, and in term enhances the revisit intension. Besides these, the direct influence of “usefulness” on reuse intension is highly significant too. Among the four currently existing websites, even though “Happy Street Strolling” is by far the most satisfactory one, apparently still has space for improvement. To look into the four websites, “Happy Street Strolling” definitely has a more attractive and much clearer layout, so that extracting the needed information seems to be easy and smooth, which verifies the results of our research findings. As to the psychological factors, the subjective norm’s effect to the revisit intension is significant while the perceived behavior control is not. The possible explanation of such insignificant result is that to surf through the websites and extract the necessary information indeed becomes very basic, especially for young college students. As for managerial implications to the administration of night market websites, providing outcomes that are friendly, consistent with users’ expectations is the most important strategy. Complete night market contents including gourmets, clothes, sightseeing spots is essential in order to drive visitor’s intention of using websites. Besides, entertainments and close interaction could also be created by applying technologies such as social communities, location-based service or augmented reality. We hope through these insights and implications, the intention of using night market websites as well as the willingness of recommending websites to other users could be enhanced. In this sense, this study generalizes the arguments and application of TAM toward a new field of tourism field such as night market visiting.

5.2 Limitations and Suggestions for Future Research

We acknowledge that a number of research limitations exist in our research which should be overcome in the future. First, our sample was mainly composed of college students. Comparing with the average night market visitors, our sample may be too young and more educated. Second, despite our model provides some insights for the explanation of the usage of the night market websites, some important factors that influence or moderate the relationship between our research constructs are not well understood. Future studies may benefit from articulating the possible factors such of user’s previous experience of visiting night market, information quality of websites, or the entertainment prospect.

Acknowledgement

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