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Bing Pan

Department of Hospitality, and Tourism Management, College of Charleston and Hong Kong Polytechnic University

Dan Wang

School of Hotel & Tourism Management, The Hong Kong Polytechnic University

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Mobile Internet Access Patterns for Travel: Comparison of Desktops, Tablets, and Phones

Bing Pan

Department of Hospitality and Tourism Management
College of Charleston and Hong Kong Polytechnic University

and

Dan Wang

School of Hotel & Tourism Management
The Hong Kong Polytechnic University

ABSTRACT

This study investigated information access patterns on desktops, tablets, and phones of a few different travel related websites through web log analysis. The results show that the three types of devices have different ratios of search traffic, referral traffic, and direct traffic. With a smaller screen on mobile devices, users visit fewer pages per visit, stay less time on the website per session, and have higher bounce rates. Content analysis revealed that travelers requested more specific information on mobile devices and general information on desktop computers, indicating information needs in late decision making stages on mobile devices.

Keywords: *mobile devices, information search, web analytics.*

INTRODUCTION

In the past decade, the development and innovations of mobile technology has encouraged more uses of Internet on mobile platforms. The consumption of travel-related information on the Internet satisfies a variety of travel information needs (Vogt and Fesenmaier 1998), shapes travel planning process (Pan and Fesenmaier 2006), and further changes travel experience (Buhalis and Law 2008). Studies have identified that people's information needs on the Internet in a mobile context are different from the ones in a relatively stable environment, such as home and office (Church and Oliver 2011). Also, due to the unique features of mobile devices in comparison with personal computers (PCs), for example, smaller screen and different input methods, people's Internet behavior such as information search on different platforms are distinct (Chua, Balkunje, and Goh 2011). Therefore, for further understanding the impact of mobile devices on tourism (Wang, Park, and Fesenmaier 2012), it is important to investigate how tourists access and use information on mobile devices. The purpose of this paper is to explore the information access patterns on mobile platforms for travel related tasks. Specifically, the access patterns of a destination marketing organization (DMO)'s website in the past three years is reported and analyzed to investigate the differences of traveler's behavior on mobile devices and PCs. Further analysis involves the access patterns of the websites of accommodations and tour guiding companies.

METHODOLOGY

This first part of the study focuses on the mobile information access pattern of a DMO website, which is one of the major information sources for travel planning (Pan et al. 2010). The access was acquired for the traffic data of the local Convention and Visitors Bureau (CVB) website of a tourist city in the southeast United States. The web traffic data was collected from the Google Analytics account of the CVB website. Google Analytics is a free tool provided by Google Inc. to help website owners understand how their web visitors interact with websites (Hasan, Morris, and Proberts 2009; Plaza 2011). The dataset provides information about the web traffic based on different platforms (i.e. PCs, tablets, and mobile phones). Three categories of information on web traffic were investigated, including traffic source (i.e. the sources of clicks from different platforms), information access patterns (i.e. page/visits, visit duration, bounce rate, and percentage of new visits), and content (i.e. different content accessed from different

platforms). Descriptive statistics, chi-square analysis, and content analysis were applied to examine and compare the information access patterns on different platforms.

RESULTS

This abstract presents the first part of the final results. Table 1 lists the breakup of three types traffic sources on three platforms: search traffic refers to those clicks derived from search engines; referral traffic is the access from referral websites, such as hotels.com; direct traffic happens when the users directly type in the web address of the site or access from bookmarks. The table shows tablets have more search traffic ratio than the other two, indicating more likelihood for searching; desktop has the highest ratio of referral traffic, indicating extensive browsing; phone platform sends highest ratio of direct traffic through URL access, indicating more goal-oriented search.

Table 2 shows that the three platforms have different patterns of access: with a smaller device screen, users visit fewer pages per visit, stay less time on the website per session, and have higher bounce rates. Tablets always have the values in the middle, due to its middle-sized screen between a phone and a desktop computer. Interestingly, the percentage of new visits is lowest among tablets, possibly due to the fact that tablets are easier to carry throughout the trip so they visit the CVB sites multiple times.

Table 1
The Breakup of the CVB Traffic by Information Source and Platform

Platform	Total Visits	Percentage of Traffic**	Search Traffic**	Referral Traffic**	Direct Traffic**	Campaign Traffic**
PC	5,753,732	92.4%	78.0%	7.9%	7.9%	6.3%
Tablet	257,100	4.1%	88.9%	4.2%	5.4%	1.6%
Phone	215,160	3.5%	77.5%	5.6%	11.8%	5.1%

*Campaign traffic refers to those traffic to the CVB website through Google [AdWords](#).

** Chi-square tests show significant difference at 0.01 level.

Table 2
Information Access Patterns of Three Platforms

Platform	Pages/Visits**	Visit Duration**	Bounce Rate*	% of New Visits*
PC	5.24	319	29.6%	72.5%
Tablet	3.97	260	33.1%	64.2%
Phone	3.33	218	42.5%	76.5%

*Chi-square tests show significant differences among three platforms at 0.01 level.

** Significance tests are not performed due to the aggregated data. However, due to the large sample size, the authors suspect that they should be significantly different too.

In addition, the content analysis on the webpages accessed from different platforms revealed that (1) users are less likely to request visitor guide on phones; (2) PC users are more likely to view those general pages on dining, attraction, events, or beaches, than mobile device users, indicating an early stage of trip planning; (3) visitors are more likely to view more detailed information, such as bed and breakfast or nightlife activities on mobile devices. In general, these results point out that mobile devices are being used in later stages of trip planning and also for searching more specific and detailed information.

CONCLUSIONS

In general, this case study indicates that information access patterns for travel related websites on mobile devices are different from those on PCs due to different information needs and constraints in mobile environment. This study provides important implications for marketing strategies of destination marketing organizations on mobile platforms. For example, information delivered through mobile devices should be more specific and anticipate travelers' needs; mobile devices are more suitable for deals and special packages; search recommendations are more important for tablets users. Furthermore, this study suggests the importance of investigating the contexts in which the mobile devices are used to access and consume information, because the contexts are the origins of travelers' information needs and specific mobile Internet behavior.

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