A Literature Framework Analysis of Online Hotel Accommodation Process Factors

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Abstract

The Internet is rapidly becoming the dominant user decision making tool for the hotel accommodation purchase process. This paper critically reviews online hotel accommodation purchase processes literature and proposes a literature framework analysis of online hotel accommodation process factors. The objective of this research is to propose a statistically based framework based on clickstream/log file analytics of both the internal and external influencers of the process. The internal process influencers (the individual themselves, search engines, third parties/social media sites and hotel websites) and the external process influencers (online access devices and user visual interaction) are reviewed before being formulated into proposed framework of the online hotel accommodation process.

Keywords: hotel accommodation booking process; online search; social media; online purchase process; analytics; devices.

1 Introduction

Global hotel accommodation sales are estimated at US$789bn (Ward, 2013) and the Internet is rapidly becoming the dominant user decision making tool for the hotel accommodation purchase process. The aim of this paper is to critically review users' online hotel accommodation processes literature and subsequently map standardised behavioural patterns noted during the process. The objective of this research is to propose a statistically based framework based on clickstream/log file analytics of both the internal and external influencers of the process. The internal process influencers (the individual themselves, search engines, third parties/social media sites and hotel websites) and the external process influencers (online access devices and user visual interaction) are reviewed before being formulated into proposed online hotel accommodation process framework.

2 Theoretical Background

2.1 Clickstream/Log File Analytics of the Process

Bucklin and Sismeiro (2009) describe clickstream data as the electronic record of a user's activity on the Internet. It provides information about the sequence of pages or the path viewed by users as they navigate a web site (Montgomery et al, 2004). Click stream data however is essentially useless to us in its raw coded format. This raw data is converted by log file analysis tools, which compile raw data into human understandable reports (Ramey, 2000). Click stream data has major advantages to identify user behaviour in analysing the online hotel accommodation process. They are a valuable cornerstone for continuous website design (Burton & Walther, 2001;

Giudici, 2003; Murphy et al., 2001; Xue, 2004). The clinical statistical nature of the data removes the bias of self-reported data. One of the most promising applications is in identifying homogenous user subgroups (Liu, 2008); this allows marketers to target specific demographics more likely to purchase hotel accommodation.

Clickstream data presents us with vast amounts of incredibly useful information. However, it is not without its difficulties or limitations. Bucklin et al. (2002) found that marketers lack a methodology for analysing path information. Limitations exist when analysing specific devices. Take for example a user in an Internet café who accesses a particular site, later another person sits at the same computer and accesses the same site differently (Hofacker & Murphy, 2005). In examining the limitations of interpreting log files Schegg et al. (2005) asked if a user requesting many resources on a hotel website indicates an interesting website or the user fails to find information. Standard analytics tools (e.g., Google Analytics or 123loganalyzer) provide solely descriptive information about page access frequencies, view times, common entry and exit points, referral sites, etc. and thus provide a blurred and incomplete picture of online behaviour. Schegg et al. (2005) recommended combining the path analysis with user observations (i.e., by video and screen cameras and user surveys) to shed more light on how to convert these visitors from lookers to bookers. Clickstream/log file analytics provide a statistical foundation for further research into the human thought process and the emotional influences on the Process Influencing Factors.

2.2 Process Influences (Internal)

The Individual. Consumers have in recent years increasingly relied on the online medium for the travel research process. Starkov and Safer (2010) found that 94% of travellers were accessing hotel information online and 55% of all leisure and business travel bookings will be completed online. This is significant in that it infers that 39% will search online then will choose to leave the online medium to purchase travel offline. This online/offline behaviour is extremely difficult to map given that it is almost impossible to track which other method was used by the online searcher to subsequently book the hotel room. Seabra et al. (2007) found that tourists mix the Internet and other non-internet information sources, including commercial brochures and travel agents for planning trips. iProspect (2009) found that 67% of online users are driven to search following exposure to an offline channel and that 39% ultimately convert back, purchasing from the company that caused them to launch their search.

Pitman et al. (2010) found in examining the range of search terms being used to book tourism products, that only 12% related to accommodation finding that the distribution of search terms could be summarised as follows: accommodation (12%), activities (16%), skiing (7%), dining (7%), shopping (3%), attractions (7%) and services (17%), together with nonspecific terms (32%). This is significant in that it indicates that 88% of travel search terms are non accommodation-based and that the hotel accommodation selection process is heavily reliant on non hotel search terms.

Gretzel et al. (2007) found that it is a staged process with most respondents planning major aspects of their trip in advance (67%). Fesenmaier and Jeng (2000) supports this finding that travel is a staged process and that different decisions are made at different stages of the process. They propose three basic decision phases in the tourism travel decision making process: (1) core decisions, which are planned in

detail well in advance of the trip; (2) secondary decisions, considered prior to the trip but "flexible" to accommodate the possibility of change; and (3) en route decisions, not considered until the traveller is actually en route and actively seeking alternatives. Decisions made at a later stage appear to be conditional on decisions made earlier.

Sumi and Kabir (2010) found that the buying process starts long before the actual purchase and has consequences long afterward. Gretzel et al. (2007) supports this, finding that 44.2% of their survey respondents began their trip planning four or more months in advance, 29.5% plan 2-4 months in advance, 20.3% plan 3-8 weeks in advance and 1.3% plan 1-6 days in advance. Only 0.4% made travel decisions during their trip. ComScore and Google (2008) support this for the online stage of the process finding that on average, customers in the UK make 12 travel related searches, visiting 22 websites and taking 29 days from the first time they search until they make a purchase. Ho et al. (2012) found on average that the total search time for an individual online session was only around 30 min. Jansen et al. (2008) found in an examination of web queries that consumers were seeking information 80.6% of the time, navigating between pages 10.2% of the time and carrying out transactions 9.2% of the time. This somewhat explains extremely low purchase completion rates.

Early research was very concerned about these rates. New York Times (2000) found that online retailers such as Amazon.com, Macys.com, JCPenney.com, and MarthaStewart.com had purchase conversion rates that ranged between 1-2% averaging 1.8%. Moe (2003) supported this in her 2003 research finding a 1.25% purchase conversion rate and Sismeiro and Bucklin (2004) only a year later found that the clickstream data showed that only about 2% of site visitors completed an order transaction. Purchase click out rates of this nature clearly need further analysis as a generalisation of the process would imply a no purchase click out. Expedia.com (2013) found that a typical online advertisement has a 0.14% click through rate, that is for every 714 times an advertisement is displayed, a user will click on one.

These very low statistical rates have severe limitations in that they do not explain the behaviour of users, but more in-depth analysis shows interesting behavioural traits behind these statistics. Moe (2003) found that very few purchases occurred in the beginning of the data period as compared to the latter half of the data. Moe (2003) and Putsis and Srinivasan (1994) have shown that in many cases, consumers build up to a purchase, in other words, consumers will make a series of non purchase visits before making a purchase visit with late stage visits having the highest purchase conversion rate of 20%. There is limited research on the decision making process link between the online medium and the offline purchase process. Starkov (2012b) found that after examining web and call analytics, that 60 – 70% of mobile hotel bookings are made via voice reservations clicked directly from the phone number on the mobile site.

Search Engines. The Travel Industry Association of America and others have shown that the majority of U.S. travellers use search engines for vacation planning (Fesenmaier & Cook, 2009). In fact in 2012, Pollard (2012) stated that all travellers use search engines to get information. It has been noted that even with newer offerings such as news, image, video, and scholarly document searches, which come from specialised web crawls, the core of search engines remains the search index (Höchstötter & Lewandowski, 2009). Most frequently, participants would visit one

site, that is to say the first hit (81%), or at most two sites (13%) listed among the results. Lee (2013) also noted the vast majority of searchers only check the first page of search engine results. Schegg et al. (2005) noted in an analysis of search engine referrals that Google was the most popular search engine (61%).

Starkov (2013) noted that over 55.6% of website booking revenue came as a direct referral from search engines in 2012, including organic (32.7%) and paid search (22.9%). The amount of bookings through organic search may change into the future as Machill et al. (2004) found that online searchers are very averse to paying for online search. Xiang et al. (2008) noted that the top tourism related keywords inputted into search engines for Chicago were in the following areas: accommodation, activities, areas, attractions, events, information, places, restaurants and shopping. Studies by Pan et al. (2007) and Hwang et al. (2009) indicate that searchers usually focus on cities as the geographical boundary instead of states or countries.

Chitika Insights (2012) noted that the average number of keywords had increased over time from 1.2 words in 1998 to 4.39 in 2012 over the five largest search engines. Searches as extensive as a hotel accommodation search are rarely completed in a single search. Yang et al. (2007) noted that because search accuracy largely depends on the quality of search keywords, users seldom use the right search keywords on their first search. ComScore and Google (2008) not only noted that travel consumers are using search engines in more sophisticated ways to research and purchase travel in the UK, but that on average consumers take nearly a month to go from their first search to a purchase, making 12 travel related searches, 22 website visits and take 29 days from the first time they search until they make a purchase. They also found that 45% of transactions occur four weeks or more after the first search. Online hotel accommodation purchase is not a single visit purchase and we must alter the way we attempt to map consumer behaviour. McCarthy et al. (2010) noted that while the hotel brand website had the largest amount of final stage respondent visits, search engines had over three times as many early stage visits as the hotel in the final stage.

Third Parties/Social Media. Third party media on the Internet are referred to using various names. Litvin et al. (2008) define electronic word of mouth (eWOM) as all informal communications directed at consumers through Internet based technology related to the usage or characteristics of particular goods and services, or their sellers. Daugherty et al. (2008) define user-generated content (UGC) as media content created or produced by the general public rather than by paid professionals and primarily distributed on the Internet. Online consumer reviews about travel destinations, hotels, and tourism services have become extremely important sources of information for travellers (Pan et al., 2007). This is because the influence of online consumer reviews is particularly strong for experience products such as the hospitality and tourism industries (Zhang et al., 2010). Ye et al. (2011) found this is because the intangible nature of tourism products makes it difficult to evaluate before consumption, and it has long been recognised that interpersonal communications are an important information source among tourists (Litvin et al., 2008).

Social Media, however, has significant limitations, which limit our ability to map their effect onto the online hotel accommodation process. Bucklin and Sismeiro (2009) noted that the challenges in using clickstream data to study eWOM can be

significant. It is very difficult to track eWOM and can be even harder to connect it to consumer transactions or other behaviour. Sex is another limitation; McCarthy et al. (2010) noted that females are more likely than men to post negative reviews after negative experiences positive reviews following positive experiences. Indeed, women behave differently to men when using social media to review the same hotel products.

The purchase of hotel accommodation is now inexorably linked to online third parties and has been for some time. Tedeschi (2006) noted that in general, more and more consumers use infomediaries. Gretzel et al. (2007) noted that 92.3% use virtual communities (TripAdvisor, VirtualTourist, LonelyPlanet, etc.) to find other travellers' online reviews. Lee and Tussyadiah (2010) noted that a reasonably significant number of travellers are starting to leave comments on social media. 27.1% of participants indicated that they have engaged in eWOM about their travel experiences. Their reviews are critically important for hotel accommodation providers as 77.9% of online travel review readers think that other travellers' reviews are extremely or very important for determining where to stay with all other travel decisions being seen as much less important; where to eat (33.6%), what to do (32.5%), where to go (27.0%).

Gretzel et al. (2007) noted that of those who read other travellers' online reviews, a majority (63.7%) read them in the beginning of the trip planning process to get ideas and 64.7% in the middle of planning to narrow down choices. 40.8% of respondents also use online reviews later in their planning, in order to confirm their decisions. Ye et al. (2009) noted that a 10% improvement in reviewers' rating can increase sales by 4.4% and a 10% increase in review variance can decrease sales by 2.8%. Reviews related to, the GDP of the city had a positive impact on booking numbers. ComScore and The Kelsey Group (2007) noted that 40% of hotel reviewers subsequently purchased a hotel room and 87% said it had a significant influence on their purchase.

Hotel Websites. Mapping the hotel website search is not just important from a provision of the online patterns of hotel accommodation searchers. Talon and Gonzalez (2011) noted that 99% of hotels allow online reservations, yet Walker (2012) noted in 2011 that 76% of online bookings for non-branded hotels came from online travel agencies (OTAs) and just 24% of online bookings came from the hotels' own website. This is a huge issue because travel intermediaries' commission rates are between 18% and 30% (Starkov & Price, 2005). Morosan & Jeong (2008) found that users overall have a more favourable attitude and higher intentions to revisit third-party web sites than hotel owned web sites yet there is a large increase in the number of users who book directly on hotel websites (Jeong & Gregoire, 2003). However, all the research viewed in this area had some limitations.

Schegg et al. (2005) while noting the keywords entered into search engines to find hotels, noted stark differences between individual hotels. Examples included where the name of one hotel was inputted into a search engine in 4% of their searches yet in another hotel it was in 86% of their searches. Schegg et al. (2005) found in researching hotel website visits that the median visit length ranged from 60 seconds to 172 seconds, and the average visitor across all hotels stayed almost two minutes. During their visits web surfers requested between 1.6 and 11.7 web pages, depending on the hotel, with an overall average of 4.7 pages. These results are supported by Jones and Chen (2011) who found that a user spends 92 seconds investigating a hotel.

Jones and Chen (2011) noted that prior to landing on a hotel's website, subjects entered the destination, travel date and the numbers of travellers. The subjects were then provided with on average 194.8 hotels. From this consideration set, the subjects only considered in detail an average of 4.1 hotels before choosing their hotel. Every tenth visitors opens a page and exits without viewing another page. In 56% of one page visits the visitors land and leave from the site's home page. Without researching the human thought process we cannot optimise the process for individual consumers.

2.3 Process Influences (External)

Online Access Devices. The interface mechanism for hotel accommodation booking has changed dramatically in recent years. Google (2012) found that consumers on average spend 4.4 hours of their leisure time daily in front of screens. PCs/laptops have been and still are the main online interaction device. Sterling (2011) noted that in the second quarter of 2011, 90% of mainly US and UK Internet users stated they owned a laptop. This dramatically dropped in just one quarter to 79% with 62% stated they owned a smartphone with a large increase in tablet ownership from 32% to 37%. Google (2012) found that the average per interaction on each device was TV 43 minutes, PC/Laptop 39 minutes, Tablet 30 minutes and Smartphone 17 minutes.

Devises are central to the when and where usage patterns of consumers. Google (2012) found that, for example, PCs are used mostly as a work device for productivity and smartphones/tablets are used mostly as a leisure device out of work. Many major hotel brands report that 80% or more of their mobile bookings are for the same or following day. Tracking this usage for the purpose of hotel accommodation sales is far from straightforward. Google (2012) reported that 90% of consumers use multiple screens sequentially to accomplish a task over time; 98% move between devices on the same day. About 43% of people sequentially moving between devices have used them to plan a trip. Van Theil (2013) reported that 39% of UK consumers who researched a product using their smartphone purchased the product on a desktop/tablet and Starkov and Safer (2013) found that 60–70% of mobile bookings actually happen by voice made via the mobile website. The devices people use simultaneously are smartphone and TV 81%, smartphone and laptop/PC 66% and laptop/PC and TV 66%. About 22% of simultaneous usage is complimentary, such as see a hotel on screen and look it up on the smartphone (Google, 2012).

Starkov (2012a) found that 1.11% of hotel revenue is generated on smartphones, 5.84% on tablets but the vast majority 93.06% is generated on desktop/laptops. This cannot simply be dismissed as delayed new technology adoption as tablets have significantly higher hotel accommodation bookings and are a much newer technology. eMarketer (2013) noted that while travel accounted for 1% of internet usage in the USA in 2012, it accounted for 9.3% of mobile internet for Q.1 2013 suggesting mobile internet is to search and PC/laptop is to purchase. Different devices are starting to significantly impact the online hotel booking process. Starkov and Safer (2013) reported that in 2012 overall Google hotel searches increased by 24%, mobile device searches increased by 120% and tablet searches increased by a huge 306%. Starkov (2012b) estimate mobile online travel bookings will be US$8Bn (6.5% of total) in 2013 up from US$2.8Bn (2.4% of total) in 2011 and US$160Bn in 2010. The mobile market is undoubtedly an area to target however it does present significant

issues. Expedia and Comscore (2012) found that PCs have a 77% travel booking conversion rate, this drops to 34% for tablets and 28% for smartphones.

Chan (2012) found that since the adoption of smartphone technology is relatively new, a limited amount of academic literature is available on mobile adoption within the hotel industry. The general requirement to input a credit card number is also impeding mobile reservations as almost half (49%) of online leisure travellers who use mobile phones are either very or somewhat uncomfortable making mobile purchases that require them to enter their credit or debit card number (PhoCusWright, 2012). Screen size is also frequently criticised. Trying to squeeze a "desktop" hotel website onto the tiny screen of a mobile device is a futile exercise that inevitably destroys usability and conversion rates (PhoCusWright, 2012). Without researching the human thought process behind the device usage in this section it is impossible to adapt devices to fully meet hotel accommodation consumers' requirements.

Visual Interaction. The online tourism information search may be viewed as the interaction between information seekers and the online system (Ho et al., 2012). The actual user online tourism information exchange process is in the main conducted visually. Meeker and Wu (2013) found that while initially websites were predominantly textual in nature, the use of images in websites and social media had increased dramatically. Nowadays other media such as movies are important and their percentage of the web index is increasing rapidly (Höchstötter & Lewandowski, 2009). Kanellopoulos (2010) noted that in multimedia applications, text offers clarity and self-pacing, graphics provide visualisation and communicate styles and video captures the moving events of the world around us. Lee and Tussyadiah (2010), however, noted that text and photos and text-only contribute 70.6% and 14.7% respectively of the information contributed to the searcher. Text and video and video-only both combined represented 8.6% of information searched, but respondents considered it offered only 1.8% of the information contributed. Mane et al. (2013) noted that video as a portion of total Internet usage is increasing. In 2010 it was 7%, 2011 it was 10% and in 2012 it was 13% or 24 minutes per person per day.

Eye tracking technology allows knowing what a person looks at as a function of time (Ali-Hasan et al, 2008). A limitation Velásquez (2013) noted with eye tracking, however, is that it only determines what a person looks at and nor if what is observed is liked or disliked. Breeze (2009) and Maughan (2009) in examining eye gaze locations found that consumers automatically focus on the eyes of people in advertisements and fail to view the central message of the ad. Maughan (2009) noted an increase in consumers' views of the product from 6% to 84% by photoshopping the models eye direction to the side of one product. Bunnyfoot.com (2013a) noted however that in goal driven websites, consumers are drawn to the text most closely associated with their goal and do not view the eyes of the model in the picture. An example noted was Linkedin where the job title received the most attention.

Höchstötter and Lewandowski (2009) noted in search engines that 80.3% of consumers spend their time "above the fold" (i.e., they only view the area that they need to scroll down to) 19.7% of the time. Enquiro Search Solutions Inc. (2005) noted that consumers focus the bulk of their attention in a triangular area on the top left of each screen. This research inputted the words "hotels" and "Dublin" together into the

five main search engines. AOL had no organic search results whatsoever above the fold followed by Google and Ask.com who had almost none. Bing and Yahoo had two and one and a half results respectively. All search engines had extensive paid hotel advertisement above the fold. Usercentric (2009) also noted that the major search engines had become so similar that their eye gaze patters had become almost identical. González-Caro and Marcos (2011) found that the first ranking position in search engines always collects the highest fraction of visual attention. Höchstötter and Lewandowski (2009) noted that the number of results shown on the "above the fold" screen for the exact same website depends on the screen and browser window size, respectively. González-Caro and Marcos (2011) also found significant differences in eye gaze duration depending on if a user was performing an informational, navigational or transactional type task at the time and if the viewed location was organic or sponsored/paid. Maughan (2008) also found that between 2005 and 2008 users changed their eye gaze pattern for the same site. Thus, eye tracking data clearly needs vast additional information including the human thought process in order to explain the online behaviour of users.
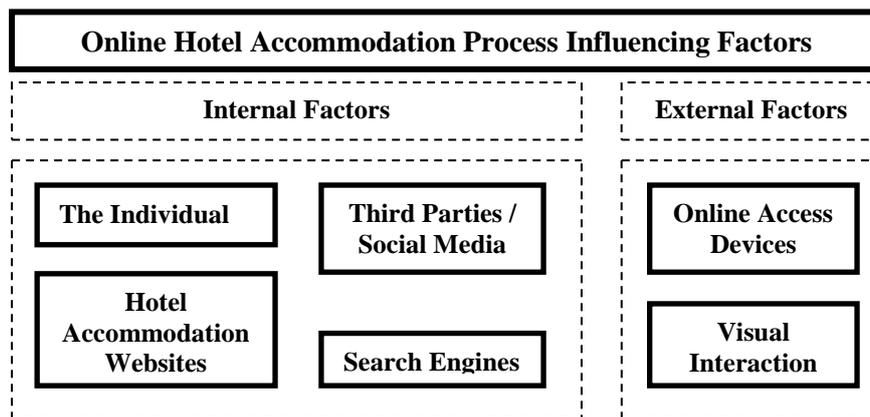
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│     Online Hotel Accommodation Process Influencing Factors │
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Internal Factors		External Factors

| The Individual | Third Parties / Social Media | Online Access Devices |
| Hotel Accommodation Websites | Search Engines | Visual Interaction |

Fig 1. Online Hotel Accommodation Process Influencing Factors

3   Conclusion

The Internet has become the dominant interface between hotel accommodation providers and consumers. Consumers who may not use the Internet for the purchase booking stage of the process will use it for other decision making stages of the process. The theoretical and practical contribution to research offered by this paper is to provide a statistically based framework analysis of the online hotel accommodation process factors upon which future research will examine the human thought process and emotional influences on the process. This will in turn provide a basis for online hotel accommodation strategies for accommodation providers. The literature framework provides a structure of the online hotel accommodation purchase process factors. This framework has limitations as the proposed map is literature based and has not been validated or generalised through primary research. However, once validated and generalised it will provide a valuable basis for future research.

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