# Customer's acceptance, usage and M-Satisfaction of Mobile Hotel Reservation Apps (MHRA)

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## Abstract

This conceptual paper aims to explore the relationship between customer acceptance and the usage of Mobile Hotel Reservation Apps (MHRA) on Mobile satisfaction (M-satisfaction). The MHRA booking is the latest booking channel offered by the hoteliers in favor of mobility and service failures exposed by the traditional method of room booking. Nonetheless, the actual usage and the success of this app have not been explored yet. The Unified Theory of Acceptance and Use of Technology (UTAUT2) was adopted as the underpinning theory of this study. The UTAUT2 framework was modified by incorporating M-satisfaction as the dependent variable. Seven propositions were suggested based on the literature review.

## **Keywords:**

Mobile-satisfaction, hotel reservation, mobile applications, Unified Theory of Acceptance and Use of Technology

## 1 Introduction

With the fast-growing mobile device market, users have unprecedented access to an overwhelming amount of product information that can aid them in making purchase decisions. Travelers are increasingly establishing a dependence on using mobile devices to explore, compare, research, purchase, and review hospitality products and services (Buhalis, 2013). In particular, the mobile apps market has rapidly expanded and is becoming increasingly competitive; there are over one million apps available in Apple's App Store alone, not to mention the other major platform, such as GooglePlay (Khalid, Shihab, Nagappan, & Hassan, 2015). In fact, the impact of this accelerated adoption of mobile apps has been wide-ranging and has altered the conventional landscape of marketing and distribution services in the hospitality industry (Law, Leung, Lo, Leung, & Fong 2015).

## 2 Issues in the context setting

While travelers are increasingly using smartphones to search, compare and even purchase hotel accommodations and other tourism related products, the readiness and engagement of travelers towards mobile-based consumerism has not been comprehensively studied (Wang, Xiang, Law, & Ki, 2016; Law et al., 2015; Wang & Wang, 2010). Undeniably, several studies in the marketing literature focused on company reputation (Chen & Xie, 2008), messaging strategy (Drolet, Williams, & Lau-Gesk, 2007) and product characteristics (Feiereisen, Wong, & Broderick, 2013), yet research on how these issues are impacted by the mobile app context and how this affects consumer attitudes is scarce. In addition, despite an ample number of studies examining the role of mobile apps at different stages of travelers' travel planning process (Dickinson, Ghali, Cherrett, Speed, Davies, & Norgate, 2014; Gretzel & Yoo, 2008; Wang & Fesenmaier, 2013; Xiang, Wang, O'Leary, & Fesenmaier, 2014; Yus, 2013), empirical studies examining consumer preferences towards mobile hotel bookings is still limited (Fotis, Buhalis, & Rossides, 2012; Ozturk, Bilgihan, Nusair, & Okumus., 2016). In particular, very little attention has been paid to what exactly constitutes a customer's acceptance and usage of mobile booking apps (Wang & Wang, 2010).

Currently, much of the relevant research tends to focus on technology innovation and user characteristics rather than customers' actual usage of mobile hotel booking apps (Kim & Kim, 2004; Morosan & Jeong, 2008). The existing studies have tried to explain mobile technology adoption based on user perceptions of technology, such as the perceived usefulness and perceived ease of use (Aldas-Manzano, Ruiz-Mafe, & Sanz-Blas, 2009; Jung, Perez-Mira, & Wiley-Patton, 2009; Ha, Yoon, & Choi, 2007), relative advantage, compatibility (Chen, Yen, & Chen, 2009; Hsu, Lu, & Hsu, 2007; Wu & Wang, 2005) and interactivity (Kim, Lee & Taylor, 2015). However, simply focusing on user perceptions of technology may be not enough to understand the actual behavior in using the mobile booking apps. For example, it is entirely plausible that while users may perceive technology as being advanced, they do not necessarily adopt it, especially if they believe it does not align with their task(s) and cannot improve their performance (Junglas, Abraham, & Watson, 2008; Lee, Cheng, & Cheng, 2007). Moreover, while the literature shows that customers are willing to make online transactions (Au & Kauffman, 2008; Chung & Shin, 2010), most of these transactions seem to be made via web-based booking websites (Kim, Mirusmonov, & Lee, 2010; Schierz, Schilke, & Wirtz, 2010). Thus, while the literature explaining the adoption of online booking systems is increasing in size and scope (Law et al., 2015), to date, it does not provide any insight into customers' actual usage of mobile hotel booking apps.

Mobile hotel booking apps tend to fall into two categories. First, there are the apps offered by third-party organisations that aggregate information on different hotels for the convenience of travelers and provide general travel-related information (expanding beyond that of just hotel specifics); examples of these apps include Agoda, TripAdvisor, VisitBritain and etc. (Wang et al. 2016). Second, there are the apps offered by the hotels themselves; these are known as Mobile Hotel Reservation Apps (MHRA) and they allow customers to check hotel locations, room rates, promotions, as well as provide access to membership information, such as a customer's loyalty points (Anuar, Musa, & Khalid, 2014).

However, in spite of many hotel businesses offering MHRA, their customers were not always aware of and/or did not utilise them (Mo Kwon, Bae, & Blum, 2013). According to Buhalis (2000), the connection between a hotel and its customer is weakening, as there is an increase in competition among hotel communication channels, aggregators, and alternative channels (e.g., online travel agents)). In particular, alternative channels tend to be much preferred by consumers, due to benefits of social connectivity, perceived value, and personalisation (Liu & Zhang, 2014; Qi, Law, & Buhalis, 2013). The widespread availability of these various applications has resulted in the hotels themselves being left out of these transactions almost entirely. Even the major hotel companies that have invested millions of dollars into global mobile strategies, including hospitality mobile apps, the customer engagement levels on these apps continue to be very low, with only 3% of target consumers using them to make hotel bookings (Martensson, 2015). Their low engagement with the apps might be affected by low awareness and low satisfaction level, in which lead to undesirable post purchase behavior.

For long, the hotel industry relies heavily on the conventional booking channel (walk-in, phone booking and travel agents) where human interaction is at the utmost important. The MHRA booking however is said to be the latest approach considering the changes among customers and issues regarding mobility and service failures exposed by the traditional method of room booking. Therefore, it is interesting to investigate the satisfaction level of this MHRA booking experience especially focusing on the mobile satisfaction (m-satisfaction) (Choi, Seol, Lee, Cho, & Park, 2008).

Investment in MHRA should not only create the revenue opportunities but also lead to customer satisfaction (Venkatesh, 2000). It is nice to have this kind of technology adopted by the hoteliers but the MHRA experience on the customers' behalf is yet to be examined. To date, there is still a lack of research that has considered the effect of customers' acceptance and usage on m-satisfaction associated (MHRA) leading to a hotel booking decision(s) (Yieh, Chen & Wei, 2012).

From the above discussion, one can deduce that mobile hotel booking via apps has yet to 'catch on' nor has it been empirically examined to a great extent. Accordingly, in order to gain an in-depth understanding of the problem, it is essential to examine the determinant of customer's acceptance and use of MHRA towards MHRA msatisfaction, particularly as they pertain to hotel booking experiences realised via mobile apps. Understanding the relationship between these aforementioned constructs will not only contribute to the relevant body of knowledge, but may also help hoteliers understand how to implement a mobile system that can benefit their customers, sales, the industry, and even their nation's economy. Addressing the above-mentioned research gap, this study explores the available technology-based model that examines the propensity for customers to use mobile hotel booking apps. Specifically, this study revisits the Unified Theory of Adoption and Use of Technology (UTAUT2) (Venkatesh, Thong, & Xu, 2012) by augmenting it to better capture specific MHRA dynamics in hotel bookings.

## 3 Literature Review

## 3.1 Mobile Satisfaction

Review of literatures on consumer behavior in the mobile apps research has shown that post purchase behavior is an antecedent from customer satisfaction. Customer satisfaction in this research context however only concentrates on the satisfaction on the experience of using the mobile apps (MHRA). Worth mentioning again that the booking process via MHRA triggers other functions in the hotel operation hence the contribution from the process should be prioritized. First of all, it is pivotal to look at the concept of customer satisfaction as a whole before going further discussing on the m-satisfaction construct. Generally, customer satisfaction refers to 'an affective state based on the overall judgment or emotional reaction to a service experience (Spreng, MacKenzie, & Olshavsky, 1996). Consumer satisfaction is also recognized as an adequate measure of service quality and which leads to the continuation of relationships with service providers (Rust & Chung, 2006) as well as dominating technology adoption success (Chen, Chen, & Chen 2009). Similar to any other studies, Wang, Tang and Tang (2001) has contended that the conceptual definition of customer satisfaction is very much ambiguous, and the standard definition of customer satisfaction is yet to be developed.

The above discussion on customer satisfaction however talked about the encounter with service personnel rather than technology-mediated service, which is obviously dissimilar in nature. A 'high touch, low tech' traditional service is now being replaced by a 'high tech, low touch' sort of technologies gradually. Therefore, the effectiveness measure of technology-mediated service and marketing must incorporate the unique aspects of customer satisfaction to become an analytical instrument for practical and theoretical use (Wang et al., 2001). The mobile satisfaction (m-satisfaction) is the most appropriate construct in this regard replacing the traditional 'user information satisfactions' (UIS) and 'end user computing satisfaction' (EUCS) on technology (Doll & Torkzadeh, 1988; Ives, Olson, & Baroudi, 1983; Wang et al., 2001) rather than focusing on generic customer satisfaction measurements.

Though m-commerce has penetrated everyday life, customer satisfaction in using mobile apps (m-satisfaction) has rarely been studied (Choi et. al, 2008). As an initiating stage of m-commerce, most of the researches paid attention to the customer's intention to accept m-Internet, rather than customer satisfaction in m-commerce. Though customer satisfaction is different from customer acceptance, in some researches on success of e-commerce, measuring intent to adopt e-commerce was also proposed as a method to evaluate the success of e-commerce indirectly as well as customer satisfaction (Lee et al., 2007). In addition, customer satisfaction is built. Thus, it is meaningful to review those studies, and this study reorganized effect of customers' acceptance and use of MHRA on m-satisfaction. Furthermore, the effect from the experience of using MHRA in making booking towards the overall customer satisfaction on the mobile booking experience should be tested.

It is important to reiterate that m-satisfaction construct is used in this study to differentiate the nature of information system and processing for digital products and services with traditional marketing. This study only examines the satisfaction of the MHRA booking experience instead of looking at the overall customer satisfaction with the hotel.

#### 3.2 Customer Acceptance and Usage of MHRA

Two models, particularly the TAM and UTAUT, have been widely applied to examine the adoption of technology in the tourism and hospitality field (e.g. Kim, Park, & Morrison, 2008; Morosan, 2011; Panagopoulos, Kanellopoulos, Karachanidis, & Konstantinidis, 2011). As this study is interested in booking decisions, the UTAUT framework was adopted, as it is believed to explain high variance when it comes to purchase decisions. Moreover, the UTAUT has compared empirical and conceptual differences of eight prominent models (Venkatesh, Morris, Davis, & Davis, 2003), while

the TAM has only tested two (perceived usefulness and ease of use) dimensions. Moreover, TAM has been criticized by Chuttur (2009), who asserts that it has "a limited explanatory" and weak "predictive power, triviality, and lack of any practical value" (p. 16-17). In an effort to reduce any inaccuracies in the predictions associated with behavioral intention, the UTAUT constitutes a suitable substitute model for the TAM, which seems to overcome some of its noted downsides.

In 2012, Venkatesh and colleagues extended the UTAUT model to pay specific attention to the consumer-use context rather than its original purpose, i.e., technology acceptance and use among employees. This resulted is the UTAUT2, which incorporated three new dimensions: Hedonic Motivation, Price Value and Habit in addition to the original three dimensions (i.e. Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions). Following these new additions, Ventakesh et. al. (2012) proposed that the UTAUT2 improved the variance of behavioral intention by 18% and the use of technology by 12% among mobile internet consumer. According to Lewis, Fretwell, Ryan and Parham, (2013), the UTAUT model acts as a baseline, this has been applied to research on many organizational technologies. Ventakesh (2012) identified seven dimensions of customer acceptance and use of technology: Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Hedonic Motivation, Price Value and Habit. Following section will further discuss the research proposition develop from the issue of this study.

## 4 Proposition Development

#### 4.1 Performance expectancy

Performance expectancy has been deemed one of the strongest predictor of customer behaviour when it comes to technology usage (Ariaeinejad & Archer, 2014; Escobar-Rodriguez & Carvajal-Trujillo, 2014; Raman & Don, 2013; Venkatesh et al., 2012). Performance expectancy, in this context, refers to "the degree to which using a technology will provide benefits to consumers in performing certain activities" (Venkatesh et al. 2012, p.159). Therefore, when it comes to technology, consumers are (at least in part) extrinsically motivated to use it, given its utilitarian value (i.e. perceived usefulness and outcome expectations) (Venkatesh et al., 2003).

As it relates to hospitality, performance expectancy denotes the hotel-related activities that consumers can utilize by using the MHRAs. Several researchers have used these theories to predict consumer behavior when it comes to hospitality decisions (Filieri, Alguezaui & McLeay, 2015; Buhalis, 2013). Based on this concept, it can be assumed that the satisfaction and continuous usage intention of MHRAs rises if a customer recognizes benefits in MHRAs. Therefore, the first proposition is formulated as follows:

Proposition 1: Performance expectancy from using MHRAs positively affects msatisfaction.

#### 4.2 Effort expectancy

Effort expectancy denotes the ease of using a technology (Venkatesh et al., 2012). With the advancement of smartphones, comes the inclusion of increasingly highertech features. Graphic interfaces, touchscreen displays, and size offerings of touch pads are amongst the many elements that shapes the 'ease-of-use' as experienced by a consumer (Mroz, 2013). In the context of this study, effort expectancy signifies the ease associated with using a MHRAs and is therefore, important for the initial as well as continuous usage intention.

Various studies have shown that effort expectancy is an important determinant of user adoption and behavior (Ariaeinejad & Archer, 2014; Escobar-Rodriguez & Carvajal-Trujillo, 2014; Raman & Don, 2013; Venkatesh et al., 2012). Thus, it can be argued that the easier MHRAs are to use, the more likely consumers are to use them (i.e. increased usage intention). In fact, hotel experts agree that such services to be consumer-friendly and consequently meet certain international standards (e.g. language, layout, connectivity and etc.) (Bai, Law, & Wen, 2008). This means, MHRAs need to be aligned with the technical understanding of their users and also meet the hotel system's literacy. If this cannot be achieved, MHRAs will be perceived as too complex, which could negatively impact the purchase decision. Hence, the second proposition is suggested as follows:

Proposition 2: Effort expectancy while using MHRA positively affects m-satisfaction.

#### 4.3 Social influence

Social influence has been proven to be a significant predictor of the acceptance and use of technologies across different contexts (Venkatesh et al., 2012), including health care (Ariainejad & Archer, 2014; El-Wajeeh, Galal-Edeen, & Mokhtar, 2014), mobile banking (Zhou, Lu, & Wang, 2010), education (Raman & Don, 2013) and hospitality (Wang & Wang, 2010). Social influence has primarily been defined as "important others" who influence others around them to engage/disengage with certain items, beliefs, ideas etc. (Venkatesh et al., 2012, p.159). As it pertains to the present research context, those "important others" signify different sources that influence ideas, thoughts and/or behaviour that relate to hotel mobile apps (Wang et al., 2016). These include friends and relatives, who are believed to have a positive impact on the initial and continuous usage of MHRAs (El-Wajeeh et al., 2014; Muzaffar, Chapman- Novakofski, Castelli, & Scherer, 2014). According to the Theory of Reasoned Action (TRA) and Planned Behaviour (TPB), the notion of social influence stems from subjective norms, more specifically, "the perceived social pressure to perform or not to perform [a] behavior" (Ajzen, 1991, p.188). Accordingly, friends, parents and other family members often serve as important influencers (Gass & Seiter, 2015).

In addition to family and friends, a hotel brand itself can also have a significant influence on consumers' initial and continuous usage intention. This is particularly true when considering how intertwined MHRAs are with their hotel systems, service

agendas and other hotel-related departments. In fact, a recent study conducted by So, King, Sparks, and Wang (2013) revealed how hotel brands serve a credible source when re-booking and making recommendations. Social influence, as defined in this study, refers to the extent to which consumers perceive their (1) friends and relatives, as well as a (2) hotel brand(s) as persuasive or influential in their decision to use (or not use) MHRAs to make their hotel bookings. Hence, the third proposition is suggested as follows:

Proposition 3: Social influence in using MHRA positively affects m-satisfaction.

#### 4.4 Facilitating conditions

Facilitating conditions "refer to consumers' perceptions of the resources and support available to perform a behavior" (Venkatesh et al., 2012, p.159). This construct is known to be a significant predictor of user adoption and behaviour across a wide spectrum of research, particularly in healthcare (Ariaeinejad & Archer, 2014; Zhou et al., 2010) mobile tour guide (Lai, 2013) and internet banking (Foon & Fah, 2011). In the context of this study, facilitating conditions represent the resources and support available to consumers using MHRAs. These can vary "significantly across application vendors, technology generation, [and] mobile devices [...]" (Venkatesh et al., 2012, p.162).

For instance, a smartphone operating on Wi-Fi, 3G or 4G will influence the speed of data transfer (Mroz, 2013) and, therefore, will determine how well the app functions. Facilitating conditions thus include everything from phone specifications (e.g. type of phone, its operating system, size of display, graphical features), to the MHRA (e.g. how compatible it is with the other technologies used by the customer, how much help and/or support is offered in cases of troubleshooting), to the customer him- or herself and the knowledge they possess.

In the context of MHRAs specifically, hotels can also contribute to the long list of facilitating conditions. For example, hotels may increase awareness towards their own MHRA by highlighting certain discounts, keyless systems, rewards and active promotions consumers can take advantage of by using the app. Furthermore, unique feature of m-payment which embedded in the MHRA will also encourage direct booking transaction between customer and the hotels. As a consequence, these measures are likely to positively affect the attitudes, and in turn, on customer satisfaction and behavior (Venkatesh et al., 2012). Hence, the fourth proposition is suggested as follows:

Proposition 4: Facilitating conditions in using the MHRA positively affect msatisfaction.

#### 4.5 Hedonic motivation

As one of the first three new factors added to the original UTAUT, hedonic motivation is "defined as the fun or pleasure derived from using a technology"

(Venkatesh et al., 2012, p.161). Stemming from motivation theory, it complements the current model's emphasis on extrinsic motivation (i.e. associated with performance expectancy) by endowing it with intrinsic motivation (Venkatesh et al., 2012). Hedonic motivation has been deemed a key predictor in a variety of studies related to consumer technology acceptance and use (Lewis et al., 2013; Venkatesh et al., 2012; Magni, Taylor, & Venkatesh, 2010; To, Liao & Lin, 2007), signifying its importance in technology acceptance models. Therefore, it is assumed that this construct will similarly play a significant role in predicting consumers' initial and continuous usage intention in the case MHRAs.

In the context of this study, hedonic motivation entails aspects of MHRAs that consumers perceive as fun, enjoyable and/or entertaining. These include, integrated app features that encourage users to achieve their rewards points, as well those features that allow them to share these on either social networking sites, like Facebook, or within the app communities themselves (Ahtinen, Isomursu, Mukhtar, Mäntyjärvi, Häkkilä, & Blom,, 2009). Even the 360-degree views of the rooms and facilities can be classified as hedonic, as they provide information about a hotel in a creative, vivid and interactive manner (Ahtinen et al., 2009). Hence, the fifth proposition is suggested as follows:

Proposition 5: Hedonic motivation in using the MHRA positively affects m-satisfaction.

#### 4.6 Price value

The price for using technological devices and services has been proven to affect consumers' usage adoption (Escobar-Rodriguez & Carvajal- Trujillo, 2014; Chong, 2013; Prata, Moraes, & Quaresma, 2012; Toh et al., 2009; Munnuka, 2004). Price value can be understood as a cognitive tradeoff between the perceived benefits of a product and/or service and the monetary costs for using them (Venkatesh et al., 2012, p.161) Venkatesh et al. (2012) stated that price value is positive "when the benefits of using a technology are perceived to be greater than the monetary cost" (p.161). Within the context of this study, the benefits of using a MHRAs should be perceived as additional perks by the customers, given that the apps are available for free. Indeed, the free-to-download aspect of the MHRAs is believed to play a significant role in influencing usage intention.

Looking at this concept from a marketing perspective, price has often has been defined together with the quality of a product or service as a way to measure its perceived value (Zhou et al., 2008). The free-to-download MHRAs will play a significant role in influencing usage intention. Considering the infinite options of MHRAs and their available features (Mroz, 2013), these complementary apps could function as a validity pointer and help prospective users to assess their value. Hence, the sixth proposition is suggested as follows:

Proposition 6: Price Value from using MHRA positively affects m-satisfaction.

## 4.7 Habit

The third construct added to the original UTAUT by Venkatesh et al. (2012) is habit. Habit plays an important role in predicting technology usage behaviour (Escobar-Rodriguez & Carvajal-Trujillo, 2014; Lewis et. al., 2013; Pahnila, Siponen & Zheng, 2011; Liao, Palvia & Lin, 2006). There are two distinct theoretical viewpoints that explain how habit influences technology usage (Kim, Kim, Gautam, & Lee, 2005; Limayem, Hirt, & Cheung, 2007; Venkatesh et al., 2012). The first is the "habit/automaticity perspective" (HAP), which asserts that the use of technology is an automatic response to routinized behaviour rather than a conscious process (Kim et al., 2005; Limayem et al., 2007; Venkatesh et al., 2012). The second is the "instant activation perspective" (IAP), which explains habit as a result of cognitive processing (Kim et al., 2005); this implies that with continuous technology usage, the desire to use technology is fixed (at least temporarily) in the minds of consumers and is strengthened by continuous usage (Kim et al., 2005; Venkatesh et al., 2012).

The difference between these two perspectives "is whether conscious cognitive processing for the makeup of intention is involved between the stimulus and the action" (Venkatesh et al., 2012, p.164). Thus, these two underlying theories of habit (i.e. HAP and IAP) can conceivably function together. Within the scope of this study, habit can be viewed as an acquired behavioral pattern that suggests the need to regularly use the MHRA. As this factor becomes redundant for initial usage intention, it will act as a distinguishing determinant between the two models of investigation.

It is assumed that once a consumer is 'routinized' in using the MHRA (e.g. to make reservation), automaticity will take over to predict the customer's continuous usage intention. Furthermore, it is plausible to assume that when consumers engage with MHRAs (i.e. checking room availability), initial usage intentions will be re-activated, so that continuous usage intentions are positively affected. Hence, the seventh proposition is suggested as follows:

Proposition 7: Habit in using MHRA positively affects m-satisfaction.

## 5 Proposed Conceptual Framework

Based on the above arguments and propositions, a conceptual framework has been developed. The framework comprises of seven dimensions of Venkatesh (2012) UTAUT2, in which had been suggested by previous literatures (past studies). The hypotheses relationship between the seven dimensions of customer acceptance and use of MHRA and M-satisfaction were developed based on the propositions by the preceding researchers. Thus, the conceptual framework is presented below.



Figure 1: Proposed theoretical framework

Grounded by the selected paradigm and the context of the study, a quantitative approach is considered the most appropriate method. This study proposes to use the cross-sectional research design to explore the relationships between the predictor variables: the determinants affecting MHRA acceptance and usage, and M-satisfaction. Survey for this research should be derived from the survey questionnaires taken by individual customers who have experience booking a hotel room(s) and making a reservation(s) using MHRA.

## 6 Conclusion

This study plan to empirically develop and validate a model that conceptualizes the influence of determinants of customer's acceptance and use of MHRA on customer mobile satisfaction. This study offers several notable theoretical and managerial contributions by addressing critical gaps in the current literature.

## 6.1 Academic Contribution

From an academic perspective, this study will contribute additions to the existing body of knowledge on technology acceptance through extending the UTAUT2 model by adding the factor of Mobile Satisfaction (M-satisfaction) and further relating the findings to extant empirical evidence. This study will contribute to the literature of mobile technology and application adoption in the particular context of hotel booking transactions as well as tourism in general. The findings of this study will open the floodgate for other researchers or scholars to embark on this field of interest probably with extended framework and much wider population in the future.

## 6.2 Practical Contribution

By examining consumer behavior as it pertains to mobile app usage, this research will benefit industry practitioners, such as hotel marketers, hotel investment decision makers and not to forget the hotel apps developer, by providing them with a glimpse into the workings of a mobile apps return on investment (ROI). In general, this study will foster a better understanding of customer adoption and preferences with regard to hospitality mobile apps that can be integrated into companies' current marketing and product distribution models; such is particularly important given the advantages of mobile app initiatives, whereby hospitality companies can reduce costs and provide real time information about their offerings by communicating with customers via mobile technology. This study will also provide hotel managers with deeper insight into the features of mobile apps that their customers are most likely to use, thus ensuring relevant content that will ultimately maximize the number of users progressing to make final bookings.

## 7 About the author

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# 8 References

- Ahtinen, A., Isomursu, M., Mukhtar, M., Mäntyjärvi, J., Häkkilä, J., & Blom, J. (2009). Designing social features for mobile and ubiquitous wellness applications. In Proceedings of the 8th international Conference on Mobile and Ubiquitous Multimedia (p. 12). ACM.
- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*, *50*(2), 179-211.
- Akter, S., D'Ambra, J., & Ray, P. (2011). Trustworthiness in M-Health information services: an assessment of a hierarchical model with mediating and moderating effects using partial least squares (PLS). *Journal of the American Society for Information Science and Technology*, 62(1), 100-116.
- Aldas-Manzano, J., Lassala-Navarre, C., Ruiz-Mafe, C., & Sanz-Blas, S. (2009). The role of consumer innovativeness and perceived risk in online banking usage. *International Journal of Bank Marketing*, *27*(1), 53-75.
- Amadeus (2013). Amadeus Global Report 2013 A business, financial and sustainability overview, available at: www.amadeus.com/msite/global-report/2013/en/index.html (accessed 20 November 2015).
- Anderson, R. E., & Srinivasan, S. S. (2003). E-satisfaction and e-loyalty: A contingency framework. *Psychology & marketing, 20*(2), 123-138.
- Anuar, J., Musa, M., & Khalid, K. (2014). Smartphone's application adoption benefits using mobile hotel reservation system (MHRS) among 3 to 5-star city hotels in Malaysia. *Procedia-Social and Behavioural Sciences*, 130, 552-557.
- Ariaeinejad, R., & Archer, N. (2014). Importance of Mobile Technology in Successful Adoption and Sustainability of a Chronic Disease Support System. *International Journal of Social, Behavioral, Education, Economic, Business and Industrial Engineering*, 8, 870-875.
- Au, Y. A., & Kauffman, R. J. (2008). The economics of mobile payments: Understanding stakeholder issues for an emerging financial technology application. *Electronic Commerce Research and Applications, 7*(2), 141-164.
- Bai, B., Law, R., & Wen, I. (2008). The impact of website quality on customer satisfaction and purchase intentions: Evidence from Chinese online visitors. *International Journal of Hospitality Management*, 27(3), 391-402.

- Baker, D. A., & Crompton, J. L. (2000). Quality, satisfaction and behavioural intentions. *Annals of tourism research*, *27*(3), 785-804.
- Bitner, M. J., Brown, S. W., & Meuter, M. L. (2000). Technology infusion in service encounters. *Journal of the Academy of marketing Science, 28*(1), 138-149.
- Buhalis, D. (2000). Relationships in the distribution channel of tourism: Conflicts between hoteliers and tour operators in the Mediterranean region. *International Journal of Hospitality & Tourism Administration*, 1(1), 113-139.
- Buhalis, D. (2003). eTourism: Information technology for strategic tourism management. Pearson Education: London.
- Buhalis, D. (2013). In ENTER2013: eTourism Present and Future Services and Applications.
- Chen, J. V., Yen, D. C., & Chen, K. (2009). The acceptance and diffusion of the innovative smart phone use: A case study of a delivery service company in logistics. *Information & Management*, *46*(4), 241-248.
- Chen, S. C., Chen, H. H., & Chen, M. F. (2009). Determinants of satisfaction and continuance intention towards self-service technologies. *Industrial Management & Data Systems*, *109*(9), 1248-1263.
- Chen, Y., & Xie, J. (2008). Online consumer review: Word-of-mouth as a new element of marketing communication mix. *Management science*, *54*(3), 477-491.
- Choi, J., Seol, H., Lee, S., Cho, H., & Park, Y. (2008). Customer satisfaction factors of mobile commerce in Korea. *Internet research*, *18*(3), 313-335.
- Chuttur, M. Y. (2009). "Overview of the Technology Acceptance Model: Origins, Developments and Future Directions," Indiana University, USA. Sprouts: Working Papers on Information Systems, 9(37). http://sprouts.aisnet.org/9-37.
- Chung, K. H., & Shin, J. I. (2010). The antecedents and consequents of relationship quality in internet shopping. *Asia Pacific Journal of Marketing and Logistics*, *22*(4), 473-491.
- Dickinson, J. E., Ghali, K., Cherrett, T., Speed, C., Davies, N., & Norgate, S. (2014). Tourism and the smartphone app: Capabilities, emerging practice and scope in the travel domain. *Current Issues in Tourism, 17*(1), 84-101.
- Doll, W. J., & Torkzadeh, G. (1988). The measurement of end-user computing satisfaction. *MIS quarterly*, 259-274.
- Drolet, A., Williams, P., & Lau-Gesk, L. (2007). Age-related differences in responses to affective vs. rational ads for hedonic vs. utilitarian products. *Marketing Letters*, *18*(4), 211-221.
- El-Wajeeh, M., Galal-Edeen, G. H., & Mokhtar, H. (2014). Technology Acceptance Model for Mobile Health Systems. *Journal of Mobile Computing & Application*, 21-33.
- Escobar-Rodríguez, T., & Carvajal-Trujillo, E. (2013). Online drivers of consumer purchase of website airline tickets. *Journal of Air Transport Management*, *32*, 58-64.
- Feiereisen, S., Wong, V., & Broderick, A. J. (2013). Is a picture always worth a thousand words? The impact of presentation formats in consumers' early evaluations of really new products (RNPs). Journal of Product Innovation Management, 30(S1), 159-173.
- Filieri, R., Alguezaui, S., & McLeay, F. (2015). Why do travellers trust TripAdvisor? Antecedents of trust towards consumer-generated media and its influence on recommendation adoption and word of mouth. *Tourism Management*, *51*, 174-185.
- Foon, Y. S., & Fah, B. C. Y. (2011). Internet banking adoption in Kuala Lumpur: an application of UTAUT model. *International Journal of Business and Management*, 6(4), 161.

- Fotis, J., Buhalis, D., & Rossides, N. (2012). Social media use and impact during the holiday travel planning process: Springer-Verlag. Environment & Medical Sciences (ICTEMS 2012), Kuala Lumpur, Malaysia.
- Gass, R. H., & Seiter, J. S. (2015). Persuasion: Social influence and compliance gaining.

Routledge.Gazley, A., Hunt, A., & McLaren, L. (2015). The effects of location-based-services on consumer purchase intention at point of purchase. *European Journal of Marketing*, 49 (9/10), 1686-1708.

- Gretzel, U., & Yoo, K. H. (2008). Use and impact of online travel reviews. *Information and communication technologies in tourism*, 35-46.
- Ha, I., Yoon, Y., & Choi, M. (2007). Determinants of adoption of mobile games under mobile broadband wireless access environment. *Information & Management*, 44(3), 276-286.
- Horner, S., & Swarbrooke, J. (2016). Consumer behaviour in tourism. Routledge.
- Hsu, C. L., Lu, H. P., & Hsu, H. H. (2007). Adoption of the mobile Internet: An empirical study of multimedia message service (MMS). *Omega*, *35*(6), 715-726.
- Ives, B., Olson, M. H., & Baroudi, J. J. (1983). The measurement of user information satisfaction. *Communications of the ACM, 26*(10), 785-793.
- Jung, Y., Perez-Mira, B., & Wiley-Patton, S. (2009). Consumer adoption of mobile TV: Examining psychological flow and media content. *Computers in Human Behaviour*, *25*(1), 123-129.
- Junglas, I., Abraham, C., & Watson, R. T. (2008). Task-technology fit for mobile locatable information systems. *Decision Support Systems*, *45*(4), 1046-1057.
- Khalid, H., Shihab, E., Nagappan, M., & Hassan, A. E. (2015). What do mobile app users complain about? *IEEE Software*, *32*(3), 70-77.
- Kim, J., Lee, K. H., & Taylor, C. R. (2013). Effects of mobile direct experience on perceived interactivity and attitude toward smartphone applications. *Journal of Global Scholars of Marketing Science*, 23(3), 282-296.
- Kim, C., Mirusmonov, M., & Lee, I. (2010). An empirical examination of factors influencing the intention to use mobile payment. *Computers in Human Behaviour, 26*(3), 310-322.
- Kim, D., Park, J., & Morrison, A. M. (2008). A model of traveller acceptance of mobile technology. *International Journal of Tourism Research*, 10(5), 393-407.
- Kim, J. W., Kim, C. S., Gautam, A., & Lee, Y. (2005). Location-based tour guide system using mobile GIS and web crawling. In Y. J. Kwon, A. Bouju, & C. Claramunt (Eds.), Web and wireless geographical information systems (pp. 51-63). Berlin, Germany:Springer-Verlag.
- Kim, W. G., & Kim, D. J. (2004). Factors affecting online hotel reservation intention between online and non-online customers. *International Journal of Hospitality Management*, 23(4), 381-395.
- Lai, I. K. (2013). Traveller acceptance of an app-based mobile tour guide. *Journal of Hospitality* & *Tourism Research*, 39(3), 401-432.
- Law, R., Leung, R., Lo, A., Leung, D., & Fong, L. H. N. (2015). Distribution channel in hospitality and tourism: Revisiting disintermediation from the perspectives of hotels and travel agencies. *International Journal of Contemporary Hospitality Management, 27*(3), 431-452.
- Lee, C. C., Cheng, H. K., & Cheng, H. H. (2007). An empirical study of mobile commerce in insurance industry: Task–technology fit and individual differences. *Decision Support Systems*, 43(1), 95-110.
- Lewis, C. C., Fretwell, C. E., Ryan, J., & Parham, J. B. (2013). Faculty Use of Established and Emerging Technologies in Higher Education: A Unified Theory of Acceptance and Use of Technology Perspective. *International Journal of Higher Education*, 2(2), 22-34.

- Liao, C., Palvia, P., & Lin, H. N. (2006). The roles of habit and web site quality in e-commerce. International Journal of Information Management, 26(6), 469-483.
- Limayem, M., Hirt, S. G., & Cheung, C. M. (2007). How habit limits the predictive power of intention: The case of information systems continuance. *MIS Quarterly*, 705-737.
- Liu, J. N., & Zhang, E. Y. (2014). An investigation of factors affecting customer selection of online hotel booking channels. *International Journal of Hospitality Management*, 39(May), 71-83.
- Magni, M., Taylor, M. S., & Venkatesh, V. (2010). 'To play or not to play': A cross-temporal investigation using hedonic and instrumental perspectives to explain user intentions to explore a technology. *International Journal of Human-Computer Studies*, 68, 572-588.
- Martensson, T. (2015, December 4). How personal is your hotel's mobile strategy? eHotelier. Retrieved from http://ehotelier.com/insights/2015/12/04/how-personal-is-your-hotelsmobile-strategy/
- Mo Kwon, J., Bae, J. I., & Blum, S. C. (2013). Mobile applications in the hospitality industry. *Journal of Hospitality and Tourism Technology*, 4(1), 81-92.
- Morosan, C. (2011). Customers' adoption of biometric systems in restaurants: An extension of the technology acceptance model. *Journal of Hospitality Marketing & Management*, 20(6), 661-690.
- Morosan, C., & Jeong, M. (2008). Users' perceptions of two types of hotel reservation Web sites. *International Journal of Hospitality Management*, 27(2), 284-292.
- Mroz, R. (2013). App-Marketing für iPhone und Android: Planung, Konzeption, Vermarktung von Apps im Mobile Business (1. Aufl. ed.). Heidelberg [u.a.]: Mitp
- Munnukka, J. T. (2004). Perception-based pricing strategies for mobile services in customer marketing context. (Order No. C820658, Jyvaskylan Yliopisto (Finland). ProQuest Dissertations and Theses, 152-152 p. Retrieved from
  - http://search.proquest.com/docview/305057193?accountid=50207.(3050571)
- Muzaffar, H., Chapman-Novakofski, K., Castelli, D. M., & Scherer, J. A. (2014). The HOT (Healthy Outcome for Teens) project. Using a web-based medium to influence attitude, subjective norm, perceived behavioral control and intention for obesity and type 2 diabetes prevention. *Appetite*, *72*, 82-89
- Ozturk, A. B., Bilgihan, A., Nusair, K., & Okumus, F. (2016). What keeps the mobile hotel booking users loyal? Investigating the roles of self-efficacy, compatibility, perceived ease of use, and perceived convenience. *International Journal of Information Management*. *36*(6), 1350-1359.
- Pahnila, S., Siponen, M., & Zheng, X. (2011). Integrating habit into UTAUT: The Chinese eBay case. *Pacific Asia Journal of the Association for Information Systems*, 3(2), 1-30.
- Panagopoulos, A., Kanellopoulos, D., Karachanidis, I., & Konstantinidis, S. (2011). A comprehensive evaluation framework for hotel websites: The case of chain hotel websites operating in Greece. *Journal of Hospitality Marketing & Management*, 20(7), 695-717.
- Prata, W., Moraes, A. D., & Quaresma, M. (2012). User's demography and expectation regarding search, purchase and evaluation in mobile application store. *Work: A Journal of Prevention, Assessment and Rehabilitation, 41*(1), 1124-1311.
- Qi, S., Law, R., & Buhalis, D. (2013). Who booked five-star hotels in Macau? A study of hotel guests' online booking intention. *Journal of Hospitality and Tourism Management*, 20, 76-83.

- Raman, A., & Don, Y. (2013). Preservice teachers' acceptance of learning management software: An Application of the UTAUT2 Model. *International Education Studies*, 6(7), 157-164.
- Rust, R. T., & Chung, T. S. (2006). Marketing models of service and relationships. *Marketing Science*, 25(6), 560-580.
- Schierz, P. G., Schilke, O., & Wirtz, B. W. (2010). Understanding consumer acceptance of mobile payment services: An empirical analysis. *Electronic commerce research and applications*, 9(3), 209-216.
- Spreng, R. A., MacKenzie, S. B., & Olshavsky, R. W. (1996). A re-examination of the determinants of consumer satisfaction. *The Journal of Marketing*, 15-32.
- So, K. K. F., King, C., Sparks, B. A., & Wang, Y. (2013). The influence of customer brand identification on hotel brand evaluation and loyalty development. *International journal of hospitality management*, 34, 31-41.
- To, P. L., Liao, C., & Lin, T. H. (2007). Shopping motivation on Internet: A study based on utilitarian and hedonic value. *Technovation*, 27(12), 774-787.
- Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information systems research*, 11(4), 342-365.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.
- Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS quarterly*, 36(1), 157-178.
- Wang Y.S, Tang T.I, JE Tang, J.E (2001). An instrument for measuring customer satisfaction toward web sites that market digital products and services. *Journal of Electronic Commerce Research 2*,(3), 89-102.
- Wang, D., & Fesenmaier, D. R. (2013). Transforming the travel experience: The use of smartphones for travel Information and communication technologies in tourism, 58-69: Springer.
- Wang, D., Xiang, Z., Law, R., & Ki, T. P. (2016). Assessing hotel-related smartphone apps using online reviews. *Journal of Hospitality Marketing & Management*, 25(3), 291-313.
- Wang, H. Y., & Wang, S. H. (2010). Predicting mobile hotel reservation adoption: Insight from a perceived value standpoint. *International Journal of Hospitality Management*, 29(4), 598-608.
- Wang, L., Law, R., Guillet, B. D., Hung, K., & Fong, D. K. C. (2015). Impact of hotel website quality on online booking intentions: eTrust as a mediator. *International Journal of Hospitality Management*, 47(May), 108-115.
- Wang, Y. S., Li, H. T., Li, C. R., & Zhang, D. Z. (2016). Factors affecting hotels' adoption of mobile reservation systems: A technology-organization-environment framework. *Tourism Management*, 53(April), 163-172.
- Wang, Y., & Fesenmaier, D. R. (2004). Towards understanding members' general participation in and active contribution to an online travel community. *Tourism management*, *25*(6), 709-722.
- Wu, J. H., & Wang, S. C. (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance model. *Information & management*, 42(5), 719-729.

- Xiang, Z., Wang, D., O'Leary, J. T., & Fesenmaier, D. R. (2014). Adapting to the internet: trends in travelers' use of the web for trip planning. *Journal of Travel Research*, *54*(4), 511-527.
- Yieh, K., Chen, J. S., & Wei, M. B. (2012). The Effects of Technology Readiness on Customer Perceived Value: An Empirical Analysis. *Journal of family and economic issues*, 33(2), 177-183.
- Yoon, S. J. (2002). The antecedents and consequences of trust in online-purchase decisions. *Journal of interactive marketing*, 16(2), 47-63.
- Yus, F. (2013). Mobile tourism: Discourse, interactivity and usability in mobile apps for tourism Cognition, Paper delivered at Discurso y Géneros del Turismo 2.0. Valencia: University of Valencia and IULMA, April 2014.
- Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in human behavior, 26*(4), 760-767.
- Zhu, K., & Kraemer, K. L. (2005). Post-adoption variations in usage and value of e-business by organizations: cross-country evidence from the retail industry. *Information systems research*, *16*(1), 61-84.
- Zulkifly, M. I., Zahari, M. S. M., Hafiz, M., & Jamaluddin, M. R. (2014). The integration of Technology Readiness (TR) and Customer Perceived Value (CPV) in tablet-based menu ordering experience. In *Theory and Practice in Hospitality and Tourism Research -Proceedings of the 2nd International Hospitality and Tourism Conference 2014* (pp. 337-341). CRC Press/Balkema.