

Smart Technologies for the Development of Smart Tourism

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Abstract: *The widespread growth of Internet of Things technology has had a big positive impact on the development of tourism businesses since it allows for accurate analysis of visitor preferences, taking into consideration the areas they visit. The advent of Internet of Things technology in the tourism industry includes the development of geolocation bracelets, mobile guide apps, ticket payment apps, and virtual reality technologies. Modern software programmes can instantly respond to tourist preferences, help with destination selection, and evaluate the organisation's tourism attractions. Based on this information, you can analyse data about a tourist's profile, the places they visit, how long they spend at tourist sites, and other aspects. The Internet may be used to analyse tourist preferences, predict their changes, and guarantee that current tourist offers satisfy the demands of the client with essentially no additional time or material expenditures for conducting tourist surveys and statistical processing. This study looks at how passengers use modern technology to improve their travel experience. Adapting travel planning; pre-trip, during-trip and post-trip processes, this study explores the use of smart tourism technologies that improve the quality of travel experiences. These studies will also provide context for understanding trip planning using smart tourism technology as a critical basis for sustainable travel and tourist services.*

Keywords: Smart Tourism; Smart Tourism Technologies; Travel Planning; Travel Experience

1. Introduction

According to the United Nations World Tourism Organisation (2015), tourism is "a social, cultural, and economic phenomenon involving the movement of people to countries or places outside their usual environment for personal, business, or professional purposes." Given the information intensity of tourism and the resulting high reliance on information and communication technologies (ICTs) (Law et al. 2014; Koo et al. 2015; Werthner and Klein 1999; Benckendorff et al. 2014), it is not surprising to see the term "smart" applied to tourism phenomena. In many aspects, smart tourism may be considered a logical evolution from conventional tourism and, more recently, e-tourism in that the framework for the industry's and customers' innovations and technical orientation was built early with the widespread adoption of ICT in tourism, for example, in the form of global distribution and central reservation systems, as well as the integration of Web-based technologies that led to the birth of e-Tourism (Buhalis 2003; Werthner and Ricci 2004). This trend continued with the broad adoption of social media (Sigala et al. 2012) and a shift towards realising mobile tourism in response to the increased mobility of tourist information and tourism consumers (Buhalis and Law 2008; Wang et al. 2012). Smart tourism, on the other hand, is a distinct stage in the evolution of ICT in tourism in that the physical and governance components of tourism are entering the digital

playing field, new degrees of intelligence are being gained in tourist systems (Gretzel, 2011), and the fabric of tourism is being transformed. The industry is changing yet again, and the ways in which tourism experiences are created, exchanged, consumed, and shared have fundamentally changed. The use of smart tourism technology in travel planning, such as travel-related websites, social media, and cellphones, is widespread and rising. Consumer behaviour has been altered by the Internet and other information technologies (Huang et al., 2016). "Smart" has emerged as a new buzzword to define technological, economic, and social advances fueled by technologies based on sensors, big data, open data, new methods of connectivity and information exchange (e.g., Internet of Things, RFID, and NFC), as well as the ability to infer and reason. Thus, this study will look into the concept of smart tourism in travel planning process. According to Höjer and Wangel (2015), smartness is defined by the interconnection, synchronisation, and concerted usage of several technologies rather than individual technological achievements. Harrison et al. (2010) define smart as using operational, near-real-time real-world data to integrate and sharedata, and making better operational decisions using advanced analytics, modelling, optimisation, and visualisation. The term (smart city) has been introduced to cities to indicate efforts to use innovative technologies to promote resource optimisation, effective and fair governance, sustainability, and quality of life. The emphasis in relation to physical infrastructure (e.g., smart house, smart factory) is on blurring the lines between the physical and the digital and on fostering technology integration. It describes multi-functionality and high degrees of connectivity when applied to technologies (smart phone, smart card, smart TV, etc.). It refers to technology that supports new forms of collaboration and value creation that contribute to innovation, entrepreneurship, and competitiveness in the context of markets and economies (the smart economy).

2. Literature Review

2.1 Smart Tourism

In the context of tourism, "smart" refers to a sophisticated amalgamation of all of the above. There is tremendous institutional support and, in some cases, even pressure to implement smart tourism. There have been significant efforts, particularly in Asia, to advance the smart tourism agenda. Governments in China and South Korea are substantially financing efforts, the majority of which are aimed at developing technology infrastructure to enable smart tourism (Hwang et al. 2015). Many smart tourism efforts in Europe arose from smart city projects, and as a result, smart tourist destinations are rapidly appearing on the European tourism scene. Smart tourism entails numerous smart components and layers that are enabled by ICTs (Figure. 1). On the one hand, it refers to smart Destinations, which are subsets of smart cities in that they apply smart city principles to urban or rural areas and take into account not only residents but also tourists in their efforts to support mobility, resource availability and allocation, sustainability, and quality of life and visits.



Figure 1: Components and layers of smart tourism.

Smart tourism is a social phenomenon that includes a destination component and results from the confluence of ICTs and the tourism experience (Hunter et al. 2015). According to Buhalis and Amaranggana (2015), the smart experience component focuses primarily on technology-mediated tourism experiences and how to improve them through personalization, context awareness, and real-time monitoring. According to Neuhofer et al. (2015), the main forces behind these smart tourism experiences are information aggregation, ubiquitous connectivity, and real-time synchronisation. The experience of smart tourism is effective and full of depth. Visitors actively contribute to its creation. In addition to consuming the data that forms the experience's foundation, they also produce, annotate, or otherwise improve it. Smart travellers use the information infrastructure provided by cellphones to access their digital selves (or data bodies) either physically or online to enhance their experiences. While smart business describes the intricate business ecosystem that fosters the sharing of tourism resources and the collaborative production of the travel experience. The business aspect of smart tourism is characterised by dynamically interconnected stakeholders, the digitalization of essential business operations, and organisational agility, according to Buhalis and Amaranggana (2014). This public-private partnership is a distinctive feature of this smart business component that emerges from governments becoming more transparent and technology-focused as providers of infrastructure and data. Additionally, smart tourism acknowledges that customers can play managerial or governing roles by generating value, offering it, and monitoring it.

2.2 Smart Tourism Technologies

Without a doubt, ICT is critical to the design and development of smart tourism. While the concept of smart tourism has only recently gained popularity among academics and practitioners, ICT capable of supporting tourism in an intelligent manner has been debated, created, and envisioned for quite some time (Gretzel, 2011). Smart ICT is anticipated to understand, benefit from experience, gain and retain information, and adapt promptly and successfully to a new scenario (Rudas and Fodor 2008). This type of technology is a significant component of information systems in a smart tourist setting, promising to provide tourism consumers and service providers with more relevant information, better decision assistance, greater mobility, and, ultimately, a more delightful experience in tourism (Gretzel, 2011; Werthner 2003; Sigala and Chalkiti 2014). These smart systems include a wide range of tourism-related technologies such as decision support systems and more recent recommender systems, context-aware systems, autonomous agents searching and mining Web sources, ambient intelligence, and systems that create augmented realities (Fesenmaier et al. 2006; Lamsfus et al. 2014; Venturini and Ricci 2006). In tourism, technology is viewed as an infrastructure rather than as individual information systems in smart tourism, and it includes a number of smart computing technologies that combine hardware, software, and network technologies to offer real-time information. People can make better decisions regarding alternatives by using advanced analytics and real-world knowledge, as well as by taking actions that will improve corporate operations and performance (Washburn et al. 2010). The extensive usage of mobile devices in today's society, particularly the smartphone and its plethora of apps, denotes an era of unprecedented connection and all-pervasive Internet access (Wang and Xiang 2012). Thus, a variety of technological advancements that enable mobile access, such as cloud computing and end-user internet service systems, are essential to advancing the goals of smart tourism.

2.3 Travel Planning

Smart Tourism Technologies are becoming increasingly crucial in all four stages of trip planning. The Internet was anticipated to be the most essential and effective instrument for searching for travel information during the planning phase of a trip as early as the 1990s

(Buhalis, 1998). Ho et al. (2012) provide a conceptual framework for understanding travellers' engagement in tourist information search and planning in order to comprehend their online and offline behaviour, and they identify prior knowledge and experience as the primary foundation for online travel information search. According to Xiang et al. (2014), from 2007 to 2012, users' perceived usefulness of the Internet for all categories of travel decisions such as where to visit, what to do, and where to stay rose. With the introduction of new media such as social networks and smartphones, the focus of information search for travel decisions has gradually shifted from only primary products (e.g., flights, lodging, etc.) to information to improve travel experience (Chung et al., 2015; Wang et al., 2012; Xiang et al., 2010; Xiang et al., 2010; Xiang et al., 2010). However, it should be emphasised that travellers are concerned about potential security or privacy breaches with the increased usage of Smart Tourism Technologies (Schmidt et al., 2008). It is generally believed that certain underlying characteristics of Smart Tourism Technologies drive their higher adoption and usage in travel planning. According to Xiang et al. (2014), the rising popularity of the Internet for trip decisions is due to the Internet providing higher quality information and a fuller experience than ever before. In the case of social media, users' perceptions of information reliability and enjoyment increase the perceived value of travel information searches. Furthermore, travellers have discovered that cellphones can help them visit more destinations, have a deeper experience, and be more satisfied with their visits overall. Wang et al. (2012).

2.4 Travel Experience

Travel is a process in which people relocate to a different location than where they normally live, interact with people and items in those locations, and document their experiences and perspectives (Tussyadiah & Fesenmaier, 2009). Based on this conceptualization of travel as a "linear" process, some researchers have described the travel experience from a chronological standpoint (Jennings & Nickerson, 2006), which includes three phases: 1) the anticipatory phase; 2) the experienced phase; and 3) the reflecting phase. Travellers are involved in a wide range of activities during this process, including planning, reservations, travelling, recording, and so on (Craig-Smith & French, 1994); thus, from a temporal standpoint, travel is frequently referred to as an "activity-based" process. Some scholars believe that because experiences are reflective and inherently personal, they exist "beyond" time. Volo (2009), for example, described trip experience as "everything between perception and sensation," and it is a type of inner psychological status. Urry (1990) established the notion of "tourist gaze," saying that each individual's travel experience differs because the traveller subjectively objectifies and interprets the places he or she visits. Uriely (2005) expanded this idea more recently by proposing that the different aspects of the travel experience can be explained by the diversity of traveller motivations. As a result, Jennings and Weiler (2006) concluded that travel is a sense-making process in which travellers construct their trip experience by learning, understanding, and feeling the locations they visit and the culture entrenched in them. Based on the foregoing comprehension, Some researchers claim that the trip experience exists "beyond" the temporal of the "activity" and "interpretation and sensation" dimensions of travel experience, positing a third dimension of travel experience based on space and time. Tussyadiah and Zach (2011), for example, described travel experience as a performative action contextualised in a specific geographic setting and manifested in feelings and perception. Jansson (2007) also emphasised the contrasts between travel and everyday life in terms of context construction by geographic area and time.

3. Methodology

This exploratory research employed qualitative approach in its attempt to discuss the use of

Smart Technologies in development of Smart Tourism. Through a library search, a total of 28 journal and magazine articles were reviewed to summarize on Smart Tourism Technologies use and highlight its development. At present, limited literature has been written on Smart Tourism Technologies and its implementation. Therefore, this paper is expected to add on knowledge to the body of Smart Tourism Technologies literature.

4. Conclusion

Smart tourism research is still relatively sparse and largely consists of case studies of existing programmes. It also heavily emphasises the consumer perspective and has taken a highly optimistic and uncritical position. Given the importance of Smart Tourism Technologies in trip planning, it is critical to comprehend how travellers use Smart Tourism Technologies and the repercussions of doing so. This study will investigate the many forms of Smart Tourism Technologies in use and disclose some noteworthy and intriguing discoveries. This research will contribute to theoretic advancement in the field of Smart Tourism Technologies research. This study investigates the influence of technology attributes on the types of Smart Tourism Technologies used in travel planning and compares their effects on overall travel experiences. This research also advances theoretic progress in Smart Tourism Technologies research, which is a subfield of study. It is one of the few empirical studies to examine the travel planning process with the use of information technology and the first to extend this framework to the tourism setting.

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