12 Smart tourism destinations: Europe's smartest and most visited cities

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Introduction

The tourism industry has enormously transformed with the rapid technological developments accelerated by the internet (Buhalis, 2020). Technology is treated as the main driving factor of innovation like many other industries which stem from the globalization process (Alcántara-Pilar et al., 2017). Smart tourist destinations have emerged due to the fast expansion in tourist numbers, shifts in tourist behavioural patterns, and the tourists' wide use of digital technologies (Tavitiyaman et al., 2021).

The term 'smart' stems from the philosophy of marketing, representing the use of technology-led devices and applications. 'Smart tourism destinations' originate from the 'smart cities' that use high levels of technology to offer better facilities, improve travellers' experiences, besides increasing the tourism firms' and destinations' competitiveness (Boes et al. 2015; Buhalis & Amaranggana, 2013; Buhalis & Leung, 2018; Gretzel, Koo, Sigala & Xiang, 2015; Shafiee et al., 2021). The development of the internet and the ICTs, along with the Internet of Things (IoT) support information exchange using big data (Stylos et al., 2021). Big data can help destinations to offer products and services to meet travellers' need at the right time in the right place to improve their tourism experiences (Buhalis & Sinarta, 2019; Bastidas-Manzano et al., 2021; Buhalis & Amaranggana, 2015; Del-Chiappa & Baggio, 2015).

Despite the increased significance of ICTs and the use of technology in several different areas for many cities (Lim et al., 2018), limited research has been conducted by scholars dealing with the issue of smart tourism concept within the context of co-creation of tourism services. Thus, this book chapter aims to examine the competitiveness of four European smart cities that are

classified as smart destinations from a comparative analysis perspective. The research aims to examine to what extent the four selected cities do offer innovative services and smart facilities based on the Smart City initiatives for both residents and visitors. Hence, the research contributes to the literature by offering valuable insights and key implications for destination managers.

Smart tourism destinations

Smartness is considered as the converter factor of the technological advancements that have been developed with the immense use of technologic infrastructure (Boes et al. 2016; Femenia-Serra & Ivars-Baidal, 2021; Navío-Marco et al., 2018; Wang et al., 2016). From the administrators' and managers' perspectives, smartness can ensure managers make better decisions while enabling organizations to operate in a more functional and efficient way by collecting and analysing big data (Ghaderi et al., 2018). Although several authors attempted to provide a definition of the term 'smart tourism', there is no generally accepted description in the current literature (Li et al., 2016). Gretzel et al. (2015: 181) defined the smart tourism phenomenon as:

> *"tourism supported by integrated efforts at a destination to collect and aggregate/harness data derived from physical infrastructure, social connections, government/organizational sources and human bodies/minds in combination with the use of advanced technologies to transform that data into on-site experiences and business value-propositions with a clear focus on efficiency, sustainability and experience enrichment".*

Buhalis (2020) suggests that:

> *"smart tourism emerged to provide the infostructure for value cocreation ... Smartness takes advantage of interconnectivity and interoperability of integrated technologies. It works to reengineer processes and data in order to produce innovative services, products and procedures ensuring stakeholder value maximisation. All suppliers and intermediaries, the public sector as well as consumers, are becoming dynamically networked, which co-produces value for everybody interconnected within the ecosystem. Smartness increases inclusiveness and accessibility for travellers, by supporting tourists with mobility, visual, auditory, and cognitive impairments to deal with physical and service barriers..."*

These definitions of the smart tourism concept, address liveable, accessible and sustainable tourism destinations both for local residents and visitors. They depict that smart tourism possesses the potential to provide personalized, memorable and meaningful experiences through using advanced technology, while it can also ensure the use of the infostructure in the formation of value co-creation (Buhalis, 2020). The concept emerged from multi-disci-

plinary research (Cocchia, 2014) including: wired cities (Dutton et al., 1987); cyber cities (Graham & Marvin, 1999); intelligent cities (Komninos, 2002); knowledge cities (Carrillo, 2004); smart cities (Hollands, 2008), smarter planet (IBM 2008); digital cities (Yovanof & Hazapis, 2009); and sentient cities (Shepard, 2011).

Buhalis and Amaranggana (2013) first coined the term 'Smart tourism destinations' and it is often used interchangeably with the term 'smart city' but in the tourism context. The rapid development of ICTs paved the way in which value creation can be developed and accelerated smart technology for tourism destinations as a whole (Boes et al., 2016). 'Smart cities' precipitate the emergence of 'smart destinations' (da Costa Liberato et al., 2018; Marine-Roig & Clavé, 2015). The main difference between the two concepts is that a smart city concentrates on the citizens while a smart destination focuses on improving tourist experiences through ICTs (Boes et al., 2015).

Table 12.1: The evolutionary process of concept of smart tourism destination

Author	Concept
Dutton et al. (1987)	Wired cities
Graham & Marvin (1999)	Cyber cities
Ishida & Isbister (2000)	Digital cities
Komninos (2002)	Intelligent cities
Carrillo (2004)	Knowledge cities
Hollands (2008)	Smart cities
IBM (2008)	Smarter planet
Yovanof & Hazapis (2009)	Digital cities
Shepard (2011)	Sentiment cities
Buhalis & Amaranggana (2013)	Smart tourism destinations

The success of tourism destinations can be designed with the functions labelled as the 6As: 1) Attractions, 2) Accessibility, 3) Amenities, 4) Available Packages, 5) Activities and 6) Ancillary (Buhalis & Amaranggana, 2013) which enable tourism destinations to become more competitive (Wang et al., 2013). Smart tourism takes advantage of smart cities development (Wang et al., 2021). It is regarded as a phenomenon resulting from the integration of information technology with the tourism experience (Hunter et al., 2015). The concept of the smart city consists of 6 basic concepts, described as:

1. the smart economy (flexibility of the labour market, integration in the international market),
2. smart mobility (availability of ICTs, modern sustainable and safe transport network),