

From smart destinations to smart tourism regions

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ABSTRACT: There is growing interest in developing smart tourism beyond individual smart destinations, but research and practice currently do not supply the necessary conceptualizations that could inform smart tourism development at a regional level. This paper argues that this is the case because of smart tourism's roots in smart city ideas and literature. It discusses the main pillars of smart tourism and smart destinations and then illustrates how pervasive urban biases are in the smart development arena. The paper then highlights the many ways in which these are problematic for reaching regional smart tourism understandings and designing appropriate regional-level strategies. It calls for smart tourism regions to be defined beyond clusters of individual smart destinations and across all domains of smartness.

JEL Classification: R12; O32; L83.

Keywords: smart tourism; smart destination; smart city; smart region; scalability; governance.

De destinos turísticos inteligentes a regiones turísticas inteligentes

RESUMEN: Existe un creciente interés en el desarrollo del turismo inteligente más allá de los destinos inteligentes individuales, pero actualmente la investigación y la práctica no son capaces de ofrecer las conceptualizaciones necesarias que permitan conformar el desarrollo turístico inteligente en un nivel regional. Este artículo plantea si esto se debe a las raíces que el turismo inteligente tiene en las ideas de ciudades inteligentes y en la literatura. Se discuten los pilares principales del turismo inteligente y de los destinos inteligentes y, después, se ilustra cómo los sesgos urbanos generalizados existen en el área de desarrollo inteligente. Este artículo, después, resalta las múltiples formas en las que estos sesgos son problemáticos para la consecución de un entendimiento sobre el turismo inteligente regional y para el diseño de estrategias apropiadas para un nivel regional. Es necesario que las regiones turísticas inteligentes sean definidas como algo más que agrupaciones de destinos inteligentes individuales y en los que sean aplicables todos los dominios de inteligencia.

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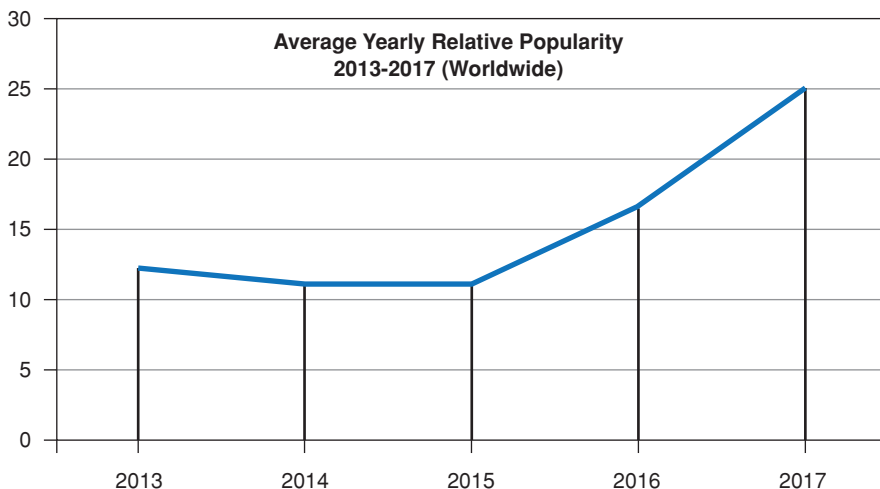
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Palabras clave: turismo inteligente; destinos inteligentes; ciudades inteligentes; regiones inteligentes; escalabilidad; gobernanza.

1. Introduction

Smart tourism is a concept that has become very trendy in the past five years, both in industry as well as in academia. Google Trends indicates worldwide increases in searches for «smart tourism» (Figure 1) since 2013. This increase in popularity and attention also applies to research. Google Scholar currently retrieves 2,470 results for the keyword «smart tourism». Whole countries like China (Wang, Li and Li, 2013), Spain (<http://www.destinosinteligentes.es/>) and South Korea (Koo *et al.*, 2013) have launched smart tourism development programs and the European Union has recently introduced its «European Capital of Smart Tourism» initiative (PR Newswire, 2018). Although there are regional differences in the extent to which smart tourism has been adopted as a vision for tourism and a field of inquiry, with Asia and Europe leading the pack (Pan *et al.*, 2016), smart tourism now occupies the minds of destination managers, tourism providers, IT developers, statisticians, consultants, policy-makers and researchers around the globe.

Figure 1. Trends in Worldwide Google Searches for «Smart Tourism»



Source: Google Trends (<https://trends.google.com>).

Smart tourism is sometimes wrongly understood as anything related to technology adoption and use in relation to tourism offerings or too narrowly conceptualized as developments resulting from IT as the sole driver of innovation goals (Xiang, Tus-

syadiah and Buhalis, 2015). Instead, smart tourism should be regarded as a tourism development and management mindset or philosophy with larger implications for tourism governance and for the strategic orientation of the destination. Gretzel *et al.* (2015a) clearly distinguish smart tourism from e-Tourism by emphasizing its connection to the physical attributes of a destination, its conceptualization as a larger ecosystem and its dependence on public-private partnerships. While e-Tourism focused on the informatization and virtualization of touristic exchanges and the exploitation of digital value chains, smart tourism bridges the virtual and the physical, encompasses broader techno-utopian visions of destinations, and calls for strong governance. Further, whereas e-Tourism spans all phases of the tourism experience (pre-, during and post-travel), smart tourism experiences are currently firmly anchored around experiences during the trip, usually not even accounting for movement to and from a destination.

Adopting such a broader conceptualization of smart tourism as a tourism development and management strategy that goes beyond technology implementation, this paper will first elaborate on the essential elements of smart tourism and their applications to smart destinations. It will then address the scalability of smart destinations to a regional level by examining the assumptions of smart tourism, some of which are deeply rooted in urban understandings of smartness as part of the smart city discourse. In conclusion, it will discuss the implications of such a regional-level conceptualization of smart tourism for research as well as smart tourism development.

2. Pillars of Smart Tourism

While the idea of smart cities emerged from the «smart growth» discussions resulting from the establishment of the Kyoto Protocol and is therefore firmly anchored in sustainability goals (Cocchia, 2014), smart tourism as a concept appeared much later, after IBM introduced the notion of a «Smarter Planet» (<https://www.ibm.com/smarterplanet/us/en/>) that focused on cloud computing, sensors, mobile technology, big data and analytics to transform businesses and institutions. It is therefore not surprising that early conceptualizations of smart tourism stress the role of IT in smart tourism (Wang, Li and Li, 2013). In particular, smart tourism from this perspective is concerned with taking advantage of a range of smart technologies, such as sensors, beacons, mobile phone apps, radio-frequency identification (RFID), near-field communication (NFC), smart meters, the Internet-of-Things (IoT), cloud computing, relational databases, etc., that together form a smart digital ecosystem that fosters data-driven innovations and supports new business models (Gretzel *et al.*, 2015b). According to this big data and technology perspective, smart tourism has been defined as:

«tourism supported by integrated efforts at a destination to collect and aggregate 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» (Gretzel *et al.*, 2015a: 181).

However, the concept of smartness has evolved considerably, and smart development agendas have become much more comprehensive. In the smart city context, smartness is now largely understood from a socio-technical perspective (Nam and Pardo, 2011), although technology remains a dominant feature of smart city frameworks (Yigitcanlar *et al.*, 2018). Nam and Pardo (2011) suggest that smartness has three dimensions, namely a technological, a human and an institutional one. Accordingly, Yigitcanlar *et al.* (2018) define the assets and at the same time drivers of smart city development as relating to technology, policy and community and the domains it applies to as economy, society, environment and governance. Their framework largely maps onto the widely used «Smart City Wheel» developed by Boyd Cohen (Smart Circle, 2013), although the wheel splits the society domain into smart mobility, smart living and smart people. Based on a comprehensive review of the smart city literature, Yigitcanlar *et al.* (2018) further establish the following eight areas, two for each application domain, which smart city development seeks to improve: 1) Governance; 2) Planning; 3) Productivity; 4) Innovation; 5) Liveability; 6) Wellbeing; 7) Sustainability; and, 8) Accessibility. Integrated governance, comprehensive and participatory planning, productivity gains and a skilled workforce, competitive advantages, an innovation culture, greater mobility, better infrastructure, enhanced quality of life, the responsible management and use of natural resources, as well as an inclusive community therefore constitute the major outcomes of smart city development.

Smart tourism is concerned with applying these ideas to tourism contexts. In line with the technology-based perspective, Gretzel *et al.* (2015a) establish data collection, open exchange and processing as the fuel for the innovative smart tourism business ecosystem. Gretzel, Ham and Koo (2018) describe smart tourism as consisting of five layers: 1) a physical layer that includes natural and human-made touristic resources as well as transportation and service infrastructures; 2) a smart technology layer that links to this physical infrastructure and provides back-end business solutions and front-end consumer applications; 3) a data layer that includes data storage, open data clearing houses and data-mining applications; 4) a business layer that innovates based on the available technologies and respective data sources; and, finally, 5) an experience layer in which the resulting technology- and data-enhanced experiences are consumed. They also establish governance as needing to span across all layers to ensure necessary investments, facilitate coordination and oversee the establishment and achievement of goals. Lalicic and Önder (2018) state that governance in the context of smart tourism encompasses a range of tourism stakeholders with diverse interests and requires the involvement of tourists and residents alike. Thus, while smart cities only consider the demands of residents and local businesses, smart tourism deals with a much more dynamic ecosystem in which residents can be producers of experiences (*e. g.* via peer-to-peer platforms such as Airbnb or Eatwith), there are temporary residents (*e. g.* tourists) and therefore seasonal demands on infrastructure and particular privacy concerns (Anuar and Gretzel, 2011), there are multiple levels of governance, and the smart economy is supported by businesses from a multitude of industries and beyond the scope of a particular city

(e. g. foreign airlines) that use the city infrastructure and resources to provide smart experiences (Gretzel *et al.*, 2015b).

The goals of smart tourism are either directly adopted from the smart city literature and initiatives or remain somewhat ill-defined. Buhalis and Amaranggana (2015) define the goals of smart tourism development as competitiveness, sustainability and inclusiveness. Focusing on the innovation and productivity dimensions of smart tourism, Boes, Buhalis and Inversini (2015) describe the strategic orientation of smart tourism as aimed at leadership, entrepreneurship, human capital, innovation and social capital development. Del Chiappa and Baggio (2015) highlight learning and knowledge management as focal drivers and at the same time outcomes of smart tourism. Lamsfus *et al.* (2015) focus on the deep understanding of human mobility as the goal of smart tourism. In contrast, Gretzel *et al.* (2015a) depart from the smart city literature and establish tourist experience enhancement as the ultimate goal of all smart tourism efforts. Similarly, Buonincontri and Micera (2016) stress increased levels of experience co-creation as an important outcome of smart tourism. Goals have also been formulated and communicated by agencies in charge of smart tourism development. SEGGITUR (2018) lists the following as pivotal areas of smart tourism development in Spain: 1) Technology; 2) Sustainability; 3) Innovation; and, 4) Accessibility. The EU Capital of Smart Tourism initiative (European Commission, 2018) provides awards for achievements related to technology, sustainability, accessibility, digitalization and cultural heritage/creativity.

While smart tourism is a flexible concept that is sometimes discussed at the events (e. g. Bustard *et al.*, 2018), industry (Buhalis and Leung, 2018) or the company level (see Neuhofer, Buhalis and Ladkin, 2015), it is mostly applied to the destination level. The smart destination has been described as:

«An innovative tourist destination, built on an infrastructure of state-of-the-art technology guaranteeing the sustainable development of the tourist area, accessible to everyone, which facilitates the visitors' interaction with and integration into their surroundings, increases the quality of the experience at the destination, while also improving the quality of life of its residents» (SEGITTUR, 2018, n.p.).

Smart destinations have been identified as a new paradigm for destination management (Ivars-Baidal *et al.*, 2017). Jovicic (2017) claims that without the use of digital technologies that enable public-private-consumer collaboration, it has become impossible for destinations to achieve successful market valorization of their geographical attributes and that this trend requires reconceptualization of what we mean by a destination and what is involved in its management. Femenia-Serra, Perles-Ribes and Ivars-Baidal (2018) argue that smart destinations use technology to fundamentally change the relationships tourists have with the destination. Koo *et al.* (2016) define the pillars of smart destination competitiveness as involving the implementation of smart technologies and intelligent systems that support resource stewardship, effective marketing, efficient organization and superior service. It is important to note that the literature almost exclusively discusses the application of smart tourism to city destinations. This urban bias will be further explored in the next section.

3. Urban bias in smart tourism conceptualizations

As indicated above, the idea of smart tourism emerged from the broader and much older discourse on smart city development (Cocchia, 2014), with smart destinations often described as special instances of smart cities (Boes *et al.*, 2015) and smart tourism being a specific application area within smart city initiatives (Gretzel *et al.*, 2015a). The focus on city destinations is therefore one that naturally evolved from the smart city frameworks. In general, there is an infiltration of smart development discourses with «urban fantasies» (Kim, 2014, p. 352) colored especially by Northeast Asian visions of cities. This is also true for smart destinations. The recent EU Capital of Smart Tourism initiative is also aimed at cities, with references to urban aspects being ubiquitous in the texts as well as the visuals on its website (<http://smarttourismcapital.eu/>). Gretzel *et al.* (2018) further illustrate for the case of Seoul, Korea that all smart tourism efforts are centered on the city and that no evidence of inter-city or regional initiatives could be found. Thus, conceptualizations of smart development generally reflect the idea of smart urbanism (Kitchin, 2014), and this is also the case for smart tourism.

There are also practical reasons for this urban bias. The higher concentration of technology companies, of a creative workforce, of communication and built infrastructure, of public transportation networks and of energy grids in urban spaces and, in the case of tourism, also the greater concentration of tourists within small spatial areas and with less seasonality all make smart tourism development much more feasible in the context of a city. Further, smart city development specifically addresses urban challenges such as traffic jams, energy consumption and crowding. As a concept it could therefore more easily be applied to urban destinations, which struggle with tourist mobility issues and overtourism. However, it is argued here that this «urban heritage» of smart tourism might conceptually limit its applicability to other types of destinations, such as rural destinations or tourism regions. To illustrate the extent to which urban biases are present, the specific areas of connectivity, mobility, built infrastructure and governance are discussed.

3.1. Connectivity

Connectivity is essential for the functioning of smart tourism. Whether connectivity is embedded in the smart tourism infrastructure (*e. g.* via an Internet of Things), is needed at the interface with smart tourists (*e. g.* to enable interactions with personal smart devices these tourists bring to the destination), or supports data exchanges to facilitate innovation, connectivity requires infrastructure and, thus, investments. Indeed, establishing connectivity has become a major focus of smart destinations such as Seoul, Korea (Gretzel, Ham and Koo, 2018), which invest heavily in the establishment of ubiquitous Wi-Fi coverage. Magasic and Gretzel (2017) point out that connectivity has been conceptualized as either existing or not, but in

reality, there are many different levels of connectivity. As part of their trips, tourists constantly move in and out of different connectivity zones (free Wi-Fi on the airport train versus data roaming while walking to the hotel) and need to negotiate various connectivity states (from high-speed to non-existing). Connectivity can be (willingly or unwillingly) restricted in terms of reach (*e. g.* confined to a particular area such as the hotel lobby) or in terms of bandwidth (*e. g.* free Wi-Fi not permitting video streaming). Connectivity significantly influences tourist experiences and satisfaction (Masri, Anuar and Yulia, 2017).

Because of higher density and smaller physical barriers, connectivity infrastructure is more likely to be developed in urban areas. Salemink, Strijker and Bosworth (2017) discuss the persisting digital divides between rural and urban areas in terms of IT availability, adoption as well as use. This is especially true for connectivity, with mobile phone network antennas being more concentrated in urban areas and free Wi-Fi zones being more common in the context of cities. Nevertheless, connectivity can still be spotty even in cities, and such connectivity issues grow exponentially outside urban areas. Further, connectivity requires energy. While energy grids are dense and charging devices is usually no problem in an urban setting, powering a smart destination's connectivity infrastructure might also require investments in energy infrastructure if smart tourism development is implemented at a regional level. Unfortunately, smart tourism development rarely discusses such basic level technology infrastructure investments and mostly focuses on end-user applications because of this urban bias.

3.2. Mobility

Battarra *et al.* (2016) indicate that smart city development initiatives have focused on efforts to combat urban traffic challenges. Similarly, Benevolo, Dameri and Auria (2016) identify city-focused goals such as the reduction of traffic congestion, the increase of transfer speeds and the decrease of transfer costs, as well as city-focused solutions such as car-sharing, urban traffic control systems, pedestrian zones and parking guidance applications. In their survey of smart mobility literature, Faria *et al.* (2017) confirm that urban viewpoints prevail. Garau, Masala and Pinna (2016) even specifically refer to smart *urban* mobility. Further, embedding smart technologies in public transportation networks is a key focus of much of the smart tourism development literature; simultaneously, taking advantage of urban traffic infrastructure such as traffic cameras is an essential part of heightening the «sensing» ability of a destination. Bike-sharing, a central aspect of smart tourism mobility solutions, also assumes short distances and urban street networks (Gretzel *et al.*, 2018). In a nutshell, smart tourism mobility has been conceptualized for a tourist who has many mobility options, needs to navigate through an environment filled with built infrastructure, traffic control systems and signage, and who moves through relatively small, dense areas for rather short periods of time. Such a notion of highly versatile and readily available mobility solutions is of course not applicable to regional destinations, where tourists

usually arrive in or rent personal vehicles, have to cover substantial distances, and encounter dispersed pockets of infrastructure. Due to the focus on urban settings, smart *regional* mobility, especially in a tourism context, has yet to be defined.

3.3. Built infrastructure

Much of the smart discourse relates to embedding technologies in built infrastructure, whether it is public transportation infrastructure, public buildings, homes or utilities infrastructure. In accordance with this focus on the built environment, smart tourism literature and practice has also focused on equipping museums, hotels, buildings that are touristic points of interest, and transportation infrastructure such as subways, airports and bus stations with smart technologies (e. g. Chianese and Piccialli, 2014; Alletto *et al.*, 2016; Faria *et al.*, 2017; Buhalis and Leung, 2018). Even in the case of Spanish smart tourism destinations, the emphasis is clearly on buildings and transportation, as illustrated by the website homepage (<http://www.destinosinteligentes.es/>). A Google image search on the IoT also delivers a myriad of logos and illustrations that focus on vehicles, various types of buildings and man-made objects. Only in the context of smart farming, of environmental monitoring such as forest fire detection and weather prediction, and in the case of tracking animals (both pets and wildlife) are references made to natural resources and living beings (Hill, 2016). Such application areas outside of urban contexts are, however, rarely discussed. As such, when smart tourism is discussed, its physical layer is typically conceptualized as buildings and objects that can be easily equipped with sensors, beacons or other types of smart technologies. In contrast, smart tourism infrastructure outside of city-scapes has not been fully conceptualized.

3.4. Governance

Fernández-Anez, Fernández-Güell and Giffinger (2018) highlight the key role of governance and stakeholder involvement as well as of a comprehensive vision for smart city development. Meijer and Bolívar (2016) suggest that smart city governance is not just about good administration of smart cities but involves a transformation of governing bodies and governance processes. Transparency, openness, accountability, collaboration, innovation and efficiency are common keywords used when smart city governance is described (Bolívar, 2018a; Chourabi *et al.*, 2012). Fernández-Anez *et al.* (2018) further stress that smart city governance is about tackling urban challenges, thus underlining the urban bias in smart city governance frameworks.

Leaning heavily on the smart city literature that advocates for «smart collaboration», which is defined as «promoting the use of new technologies to adopt a more participative model of governance» (Bolívar, 2018b: 57), smart tourism also discusses the need for participatory governance, including residents as well as tourists (Lali-

cic and Önder, 2016). La Rocca (2014) lists the following elements of smart tourism governance in a smart city destination context:

- engage in open data initiatives;
- coordinate among administrative levels;
- activate public-private partnerships;
- represent and foster integration of tourism in urban governance processes;
- safeguard and promote heritage and culture;
- promote active involvement of residential population;
- provide for network infrastructures;
- plan sensor network for touristic purposes;
- develop platforms that facilitate tourism-related exchanges;
- control energy and resources consumption;
- balance the integration of information for the common good with protecting privacy;
- enable sustainable solutions that reduce costs;
- reduce social conflicts.

Accordingly, Gretzel *et al.* (2018) argue that smart tourism calls for strong destination management and define the roles of smart destination management organizations (smart DMOs) as:

«to lobby and maybe even partly sponsor the development of smart tourism infrastructure, to curate and manage smart tourism data, to facilitate development and uptake of smart tourism-related applications within the digital business ecosystem, to support tourists in learning about and consuming smart tourism experiences, and, finally, to link smart tourism with overall quality of life and sustainability development goals» (p. 201).

Implementing a smart tourism agenda is much easier for local DMOs than for regional ones due to their more intimate knowledge of the destination and more direct relationship with the various stakeholders.

Smart governance in an urban setting involves of course a relatively small number of institutions with clearly assigned responsibilities. Also, policies are typically much more defined and more easily implemented within a well-defined and geographically limited area. Kitchin (2014) argues that neither the smart technologies nor the smart data that fuel smart cities are neutral; rather, political agendas are firmly embedded in them. What these political agendas are and who promotes them should be more easily detectable the fewer players are involved in developing and implementing smart development policies. The smart city literature that deals with governance usually does not spend much time in defining the institutional players at work (Yigitcanlar *et al.*, 2018), suggesting that they are assumed to be established and easily identifiable. This is of course much more so the case in a well-defined, more homogenous urban area. Further, the residents that take part in participatory smart governance processes are assumed to be connected, informed and, most importantly, involved. To what extent these characteristics apply to tourism destinations with a higher proportion of temporary residents (tourists, second home owners, seasonal labor), and especially tourism beyond the city limits or across multiple cities, is of course questionable.

4. Conceptualizing smart tourism regions

In practice, smart tourism has indeed been mostly implemented at the city-level and with a focus on urban dimensions and challenges, with the exception of small island destinations (as evidenced by the yearly held Smart Island World Congress, see <http://www.smartislandcongress.com>), including Tasmania, Australia (<http://www.sense-t.org.au/projects-and-research/tourism>) and Cozumel, Mexico (The Yucatan Times, 2015), as well as some regional areas in Spain (see <http://www.destinosinteligentes.es/>), South-east Queensland, Australia (Sydney Morning Herald, 2015) and the Bay of Plenty region in New Zealand (Tauranga Government, 2006). A Google search for the keyword «smart tourism region» delivers only six results, of which four are actually relevant. The same search in Google Scholar reveals zero results, suggesting that the academic literature has not conceptualized smart tourism regions. In contrast, smart regions in general have received attention in practice (the EU currently funds several smart region projects) and theory, although also not to a great extent and mostly from a technology perspective (Morandi, Rolando and Di Vita, 2016). Existing literature often conceptualizes smart regions as existing around or between smart cities (Rolando, 2011). There is a tendency to especially smartify capital cities because of their greater population densities and larger budgets (Herrera Priano, López Armas and Fajardo Guerra, 2016). Areas around these capital cities are often subsumed into smart regions, as illustrated by the case of Helsinki (Markkula and Kune, 2015).

While the smart tourism pillars and overall goals remain largely the same when applied to tourism regions, there are imminent challenges regarding their scalability for all layers or elements of smart tourism. For instance, the innovative approaches needed to establish connectivity for smart tourism at a regional level have been discussed in the case of the Caribbean region (Hughriley.org, 2016). Herrera Priano *et al.* (2016) argue that even within smart cities, development initiatives are often limited in scope, e.g. focusing on Downtown areas or tourism precincts, because of their limited scalability. Further, it is important to note that Smart Tourism Regions are not just an agglomeration of a number of individual smart destinations; rather, they have unique characteristics and challenges and unique governance, infrastructure and development needs. Herrera Priano *et al.* (2016: 465) warn: «Combining N smart cities within the same territory will not necessarily lead to a smart region». Consequently, a regional perspective on smart tourism adds complexity and therefore requires appropriate conceptualization that takes the properties of regions into account.

Dameri (2013) defines the smart city as a well-defined geographical area. Regions are often ill-defined and sometimes only exist in the imagination of policy-makers. Tourism regions can exist solely in the promotional campaigns of tourism marketers or in the perceptions of tourists (*e. g.* Middle-Earth New Zealand; Chicagoland), with no specific governance structures backing them up. If regional tourism governance structures exist, they are usually not very powerful at the local levels, where smart tourism has to be implemented. Thus, regional smart tourism most definitely requires

multi-level governance approaches that span various local DMOs. Herrera Priano *et al.* (2016) also stress that smart solutions at the regional level require much higher levels of coordination among a large number of actors and across jurisdictions. The problem is that local constituencies might be affected by tourism to different extents and might also not equally be able to benefit from smart infrastructure developments. As a result, their motivation to become involved in participatory planning and governance initiatives may vary substantially.

Herrera Priano *et al.* (2016: 466) define a smart tourism region as one that «correctly identifies its strengths and opportunities, and that, moreover, properly coordinates the available —and usually limited— resources to yield the maximum productivity of the areas that comprise it». It is clear that this definition only encompasses the governance aspects of smart tourism regions. These are important but not sufficient for a regional understanding of smart tourism. What is missing is a regional-level conceptualization of the pillars/layers of a smart tourism region, from its physical infrastructure to appropriate technological solutions, from the kinds of data it needs and is able to collect to the types of innovations and regional business ecosystems it requires. Its goals need to be formulated from a regional point-of-view, e.g. smart regional mobility instead of urban mobility. Importantly, smart tourism regions need to define what a smart regional tourism experience involves. The smart regional tourism experience requires conceptualization based on not only the experiences that tourists might have at a particular destination, but also taking into account experiences on the way to and from particular destinations within the region. There is therefore much definitional work to be done in order to move the idea of a smart tourism region forward.

5. Conclusion

This paper illustrated that directly applying smart city and smart destination principles to smart tourism regions is dangerous due to the many urban biases inherent in their conceptualizations. Thus, from both a practical as well as theoretical point of view, appropriate translations of smart principles to the regional level are urgently needed as smart tourism development spreads beyond cities. There is a substantial literature on regional development in tourism that should be integrated with the smart tourism literature to inform research and practice regarding smart tourism regions. What is also needed are smartness indicators for the regional level so that development efforts can be appropriately evaluated. In addition, there is a great need for case studies at the regional level to illustrate and compare opportunities as well as challenges that emerge in practice when applying smart tourism principles to regions. Smart tourism regions promise synergies that could not be achieved if developing individual smart destinations. They also have the potential to offer qualitatively different smart tourism experiences. Consequently, it is argued here that there is great value in adopting regional perspectives for smart tourism development and research.

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