Integrating Overtourism in the Smart Tourism Cities Agenda

This research note explores how cities that develop a smart city and/or smart destination strategy approach the management of overtourism. A group of cities with uneven tourism pressure in Spain and Portugal have been expressly selected. Using a qualitative methodology, the findings show that overtourism is a complex phenomenon comprising highly diverse processes and constitutes a localised problem in specific areas of each city. The measures for addressing overtourism include regulatory measures and the occasional use of Information and Communication Technologies (ICT). There is a need for an increasing use of technology that could have a wider scope if the smart city/destination strategy were more consolidated from a holistic point of view.

Keywords: overtourism, ICT, smart tourism cities, smart destination, governance, DMO

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Introduction

The congestion and overcrowding of tourist spaces is not a new phenomenon. Since the 1960s when mass tourism began to emerge in certain destinations, this problem started to be addressed from a theoretical and applied point of view. Different techniques and instruments were proposed to manage it, including the establishment of the carrying capacity of tourist areas. The novelty of the relatively recent term of overtourism resides in the scale reached by these overcrowding processes and their undeniable consequences, which could potentially worsen in a context of urban and tourist hypermobility.

Overtourism is the result of a convergence of complex factors related to both the socio-economic environment, that fosters the growth of demand, and the space of the destination itself, generally focused on tourism growth (Dodds and Butler, 2019). There are many examples of overtourism covered by the media in cities such as Amsterdam, Barcelona or Venice, in some cases related to the controversial concept of tourismphobia (Huete and Mantecón, 2018).

In parallel with its media impact, overtourism has become an object of institutional concern, giving rise to studies promoted by different organisations (Dichter and Gloria, 2017; European Cities Marketing, 2018; Peeters et al., 2018; UNWTO, 2018). It has also become a dynamic research topic with many recent contributions (Dodds and Butler, 2019; Eckert et al., 2019; Koens, Postma and Papp, 2018; Milano, 2018; Milano, Novelli and Cheer, 2018 and 2019).

These studies highlight the role of technology as a catalyst of overtourism processes, insofar as it has facilitated, for example, the development of accommodation platforms such as Airbnb or the low cost airline business model. However, the studies that propose the use of technology and information management in destinations as a way to resolving overtourism are more frequent. Smart solutions are an obligatory reference in the measures proposed to
manage overtourism. However, overtourism management based on an integral approach of smart tourism cities (STC) has not been analysed. For this reason, this research note studies overtourism management within the STC strategies of five European cities with different demographic weights, levels of tourist frequentation and development of their smart city and/or smart destination strategy. It is an exploratory and qualitative empirical analysis aimed at identifying the key aspects for integrating overtourism into the STC agenda.

The challenge of managing overtourism: a smart tourism cities approach

Smart cities have emerged to face the challenges of urban management (Gretzel, 2018). These challenges undoubtedly include overtourism in certain cities or urban spaces. The definitions of overtourism refer to its negative impact on the quality of life perceived by the residents and/or the perceived quality of the visitors’ experience (Goodwin, 2017; UNWTO, 2018) and the fact that the physical, ecological, social, economic, psychological and/or political capacity thresholds are exceeded (Peeters et al., 2018). The complex and multidimensional nature of overtourism is giving rise to a reconsideration of the role that tourism plays in cities and questions traditional tourism management. The neoliberal policies of promoting the city to capture demand within a context of public-private collaboration need to be reviewed in order to favour a greater public leadership and to reinforce the importance of the regulatory role of the public authorities (Koens et al., 2018). Consequently, the Destination Management Organizations (DMOs) “can no longer limit themselves exclusively to the marketing function, but rather require a holistic management as well as an intensive support of an interdisciplinary stakeholder dialog” (Eckert et al., 2019, p. 12).

Overtourism constitutes a vector of change in tourism management which is added to the need for transformation derived from the emergence of the smart tourism ecosystem (Gretzel et al. 2015). Tourism companies operate in this ecosystem based on information and
technology and the tourists act as consumers and prosumers. These dynamics reshape the role of the agents of the tourism system to the point where the traditional functions of the DMOs become redundant (Dredge, 2016).

The STC could be the answer to the need for tourism management to evolve. However, this approach should not be confused with the use of technology and tourist information. The concept of the STC or smart destinations implies an emphasis on the strategic governance and planning of destinations (Gretzel, 2018). It places technology and information management at the service of destination governance and of the application of smart solutions (Ivars et al., 2019). The priority is the smart destination strategy, which implies a sustainable, accessible and inclusive development that improves the quality of life of residents and of the tourist experience (Buhalis and Amaranggana, 2013; SEGITTUR, 2015). These elements, affected by overtourism, constitute a point of convergence of this phenomenon with the STC concept.

In light of this convergence, this study analyses how a diverse group of cities with a smart city and/or smart destination strategy approaches overtourism management. There is an essential nuance between the smart city strategy, which comprehensively addresses the management of the city, and the smart destination strategy, focused on the tourism management of the DMO, which poses difficulties for understanding tourism management in the city from a smart perspective. The management of overtourism requires a holistic perspective and an increase in the number of the stakeholders involved in the processes which include, logically, the residents (Eckert et al., 2019; Koens et al., 2018). However, a priori, two difficulties can be identified: first, the smart city strategy with a holistic perspective and an increased number of stakeholders does not adequately incorporate tourism management; and, second, the activity of the DMOs is based on a marketing perspective and lacks the competencies and means necessary to address the problem of overtourism. That is why the
qualitative research applied integrates both the vision of the smart city and the smart destination.

Within this management context, what is the real scope of the STC strategies in overtourism management? The answer to this question is addressed through the analysis of the management processes in the selected cities.

Methodology

The analysis of the relationship between the STC strategy and overtourism management is addressed through the use of two complementary methods applied to the selected cities:

1. The study of tourism planning instruments and the formulation and application of the STC strategy in order to analyse the measures for diagnosing and proposing actions with respect to overtourism.
2. The undertaking of semi-structured interviews with managers of the smart city and/or smart destination strategy in order to learn about the orientation and degree of development of this strategy, its perception with respect to overtourism and the measures that are applied to combat it.

Initially, four cities in Spain were selected: Donostia-San Sebastián, Madrid, Málaga, and Valencia, to which Lisbon was subsequently added. Spain has a national programme for promoting smart cities, managed by Red.es (organisation responsible for executing the Digital Agenda for Spain) and smart destinations, coordinated by SEGITTUR (a public body devoted to tourism technologies and innovation attached to the Ministry of Industry, Energy and Tourism), as well as other regional initiatives such as the one developed in the Region of Valencia by INVATTUR. Furthermore, in Spain two standards for smart destinations have been created as a result of the cooperation between SEGITTUR and the national
Standardisation Agency (AENOR): UNE: 178501:2016, modified in 2018, and UNE: 178502:2018. These initiatives form a framework for comparing the measures applied to overtourism, in the case where, a priori, the selected cities are developing their own STC projects. The inclusion of Lisbon offers a perspective within a different political context, disconnected from explicitly public programmes oriented towards the development of smart destinations.

A total of eight face-to-face interviews were carried out between March and June 2019. In all of the cities, managers of both the smart city strategy and the smart destination strategy were interviewed, except in the case of Málaga and Lisbon for which it was not possible. In the latter two cities, only managers of the DMOs were interviewed.

Findings: The management of overtourism from a STC perspective

The sample of cities analysed includes two capitals, Madrid and Lisbon, and three average-sized Spanish cities that have experienced significant growth in tourist inflows: Donostia-San Sebastián, Málaga and Valencia. In the period 2014-2018, the number of visitors in hotel establishments increased substantially in the five cities, as we can observe in Table 1. However, the demand for hotel accommodation is only a partial indicator of the tourist inflows, as we can see from the high weight of the accommodation on the Airbnb platform, particularly significant in the city of Lisbon, or the growth in the number of cruise visitors to cities such as Málaga and Lisbon.

Table 1. Basic tourist data of the cities under study

<table>
<thead>
<tr>
<th>Inhabitants (2018)</th>
<th>Donostia</th>
<th>Madrid</th>
<th>Málaga</th>
<th>Valencia</th>
<th>Lisbon</th>
</tr>
</thead>
<tbody>
<tr>
<td>186,665</td>
<td>3,223,334</td>
<td>571,026</td>
<td>791,413</td>
<td>506,654</td>
<td></td>
</tr>
<tr>
<td>Travellers in hotel supply (bednights in hotel supply for Lisbon)</td>
<td></td>
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<tr>
<td>2014</td>
<td>543,787</td>
<td>8,384,306</td>
<td>1,034,126</td>
<td>1,614,237</td>
<td>9,061,077 (2015)</td>
</tr>
<tr>
<td>2018</td>
<td>655,706</td>
<td>9,717,864</td>
<td>1,385,796</td>
<td>1,838,997</td>
<td>10,758,765</td>
</tr>
<tr>
<td>Variation 14/18</td>
<td>111,919</td>
<td>1,333,558</td>
<td>351,670</td>
<td>224,760</td>
<td>1,724,688 (2015/2018)</td>
</tr>
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<tr>
<td>Variation 14/18(%)</td>
<td>20.58%</td>
<td>15.91%</td>
<td>34.01%</td>
<td>13.92%</td>
<td>19% (2015/2018)</td>
</tr>
<tr>
<td>Accommodation offered by Airbnb (August 2019)</td>
<td>1,472</td>
<td>17,301</td>
<td>4,787</td>
<td>6,552</td>
<td>22,242</td>
</tr>
</tbody>
</table>

Source: Spanish Institute of Statistics and European Cities Marketing (Lisbon). Insideairbnb for Airbnb data.

In all of the cities analysed, the media report problems related to overcrowding and overtourism, particularly noteworthy in the case of Lisbon. Furthermore, there are different scientific studies that analyse the touristification processes, their contribution to the gentrification of certain neighbourhoods, congestion that affects the daily life of the residents and social movements related to a perception of an excess of tourists in the cities analysed: Donostia (García-Hernández, et alii, 2017); Madrid (Calle Vaquero et alii, 2018; Gil and Sequera, 2018); Málaga (Muñoz Gónzalez, 2016; Marín Cots, 2017 and Jurado et al. 2018); Valencia (Torres Mora, 2018); and Lisbon (Costa et al., 2019; Malet and Joao, 2018).

**Orientation and scope of the smart strategy**

In order to understand the orientation and scope of the smart strategy it is necessary to analyse both the global strategy of the city and the specific strategy of tourism. This is because overtourism management requires a holistic approach that goes beyond the strictly tourism level. Table 2 summarises the plans that guide the smart city and smart destinations strategy and the action priorities, obtained by analysing the plans compared with the interviews with managers. The degree of coordination is estimated through an analysis of the planning instruments and the interviewees´opinions.
Table 2. Action priorities in smart planning instruments

<table>
<thead>
<tr>
<th>City</th>
<th>Smart city strategy</th>
<th>Tourism Strategy/Smart Destination strategy</th>
<th>Degree of coordination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donostia</td>
<td>Plan Smart Donostia-San Sebastián 2016-2020 Priorities: Environment, Energy efficiency, mobility and ICTs.</td>
<td>Plan de Turismo Donostia/San Sebastián 2017-2021 VISIT-BIZI Priorities: Marketing orientation with concerns about the rapid growth of tourism in the city. City involved in the Smart Destination National Program coordinated by SEGITTUR.</td>
<td>Scarce but growing</td>
</tr>
<tr>
<td>Madrid</td>
<td>Instead of a general guiding instrument, the city develops several projects: MINT: Madrid Inteligente (Smart City Platform), Open Data Web, Plan A of Air Quality and Climate Change and CIVIS (Social services).</td>
<td>Plan Estratégico de Turismo Madrid Destino 2015-2019 Priorities: Marketing orientation. Madrid does not form part of the smart tourist destination programme of SEGITTUR, although on a technical level the possibility of beginning the process of certification as an SD is being considered.</td>
<td>Scarce</td>
</tr>
<tr>
<td>Location</td>
<td>Plan/Strategic Tourist Plan</td>
<td>Priorities</td>
<td>Projects/Programs</td>
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<tr>
<td>Valencia</td>
<td>Plan Estratégico Valencia Smart City 2013</td>
<td>Priorities: Sustainability and innovation.</td>
<td>Plataforma Smart City (VLCi) App València; Impulso Vlci; ConectaVlci; Geoportal and an Open Data Web.</td>
</tr>
</tbody>
</table>

Scarce but growing
and Quality of Life. 

*Alfa-Ama project* addressed to create a Smart Sustainable District in the Alfama neighbourhood considers the need to progress towards a more balanced tourism.

<table>
<thead>
<tr>
<th>No specific mention to a smart strategy but great emphasis in marketing intelligence and online communication.</th>
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Own elaboration from planning instruments and interviews

The sample of cities reveals disparate approaches. On the one hand, there are cities with a smart city strategy with no significant connection with tourism (Donostia, Lisbon and Madrid), while Malaga and Valencia connect their smart global strategy with tourism. On the other hand, tourism planning is fundamentally marketing-oriented and only in Donostia and Málaga is there a specific smart destination programme, thanks to their more direct collaboration with the national programme. In the rest of the cities, the tourism strategy is clearly linked to digital marketing, particularly in the case of Lisbon and Valencia where the participation of the private sector in the DMO is higher, reinforcing the priority of the promotion, tourism information and market intelligence policies.

*The perception of overtourism*

The analysis of the perception of overtourism has been carried out on two levels. First, its presence in the strategic tourism and smart destination plans has been studied and second, the valuation of the managers has been obtained in the interviews. The scarce presence in the plans of the impact derived from excess tourism reflects the unexpected nature of the problem and the marketing-orientation of the tourism plans. Only the plans of
Donostia and Málaga, the two cities with a lower population, explicitly refer to the problem of excess tourism.

From a qualitative point of view, the managers identify overtourism as a localised problem in certain parts of the city, generally their historical quarters. They also point out that the origin of the overcrowding is not exclusively due to tourism (they refer to housing, rental, urban renewal policies, etc.) and that it cannot be addressed from a sectoral point of view. They also refer to the subjective nature of overtourism, the difficulty in determining optimum numerical thresholds of tourist inflows and that it is not reflected in the demand satisfaction surveys, which continue to be positive in all of the cities analysed. However, they are aware of the existence of a certain level of social discontent in the neighbourhoods most affected by tourist overcrowding which must be addressed with new management measures.

Policies and measures to manage overtourism

The management of overtourism is not a priority in the smart strategies of the cities considered, either on a global or tourism level. Therefore, the qualitative analysis carried out seeks to determine which current or potential measures could improve the management of overtourism. The specific measures to date can be grouped into the following categories:

1. Regulatory measures: They have a fundamentally normative scope: regulation of tourist rental properties in response to the increase in accommodation on platforms in all of the cities; processing and approval of urban plans for the areas most affected by the growth of tourist rental accommodation (generally the historical quarters of the cities considered); regulation of the use of public spaces (not only the presence of tourists, also the privatisation of public space by restaurant businesses, for example); new regulations applying to tourist
buses or the new forms of urban mobility (mainly electric bicycles and scooters and segways).

2. Research and analysis. Quantification of the number of tourists (with particular emphasis on important events held in the city) and an analysis of the perception of the local population.

3. Improvement in mobility and information for users. Improvement of information for mobility and parking of private vehicles.

4. De-seasonalisation. Development of products and events outside the high season.

5. De-concentration of flows. All of the cities seek to redistribute the tourists in the city. This is the case of Madrid 21 Destinos, which promotes 21 districts of the city, or Lisbon which has opted for a regional view in promoting its tourist attractions.


In the measures described, the smart city strategy does not seem determinant although the use of ICTs is necessary for its efficient development. Therefore, it is worth considering how the development of the STC can improve the management of overtourism. The interviewees refer to the importance of the analysis of large volumes of geolocalised information to regulate activities such as tourist accommodation; the use of information in real time to quantify and manage flows and urban mobility (using sensorisation and/or tracking of mobile phones through different methods), and the impacts of tourist concentration on acoustic pollution or the saturation of urban spaces; the use of market intelligence for de-seasonalisation and de-concentration measures, whose systems are being improved considerably within the framework of smart destination strategies; or the possibility of using mobile applications and social networks to raise awareness among tourists and
residents. All of these solutions are being used in the cities analysed with an unequal level of development. According to the interviewees, there are reasonable expectations that they will become more widespread as the levels of collaboration between the different departments of urban and tourism management increase.

Discussion

The relationship between overtourism and STC seems inevitable. Hence, the unreal myth of smart solutions being used as occasional measures based on technology. However, both concepts are indisputably current and excessively imprecise. Very diverse processes are hidden underneath the high media impact of overtourism (contribution of tourism to gentrification; overcrowding of certain public spaces at certain times of day; negative effect on the quality of life of the residents, etc.). Under the STC concept there are projects being developed with very uneven scopes with generally scarce results and, at least in the cases studied, a management that is still dual, although with an incipient coordination: the comprehensive smart city and smart destination from a tourism point of view. In addition, managers criticise expensive solutions, which make them depend on private companies and do not respond to real problems.

Integrating overtourism in the agenda of managing and researching STCs requires a better definition of the two concepts and they should not be exclusively related to the possibilities of applying new technologies. Best practices in the use of ICTs to manage overtourism have been identified in the cities most affected by this phenomenon: Amsterdam, Barcelona or Florence (Turisme Comunitat Valenciana & CERCLE, 2019). In the cities studied, the good results and high expectations of the application of the emergent ICTs are connected related to the new tourism information systems, big data analysis and the integration of different sources of information in the city management platform.
Beyond the use of ICTs, it is important to affirm the strategic nature of the STCs in order to define the urban tourism model and identify which processes of overtourism affect the city and how to prevent them and manage them. This strategic component currently invites us to complement and, as the case may be, review the marketing orientation of the current DMOs in order to advocate a new management of the tourist city which can find a feasible reference in the smart paradigm. In this respect, the managers who work with the smart destination model of Segittur in Spain value its aptness to address overtourism insofar as it integrates technology but also the sustainability and innovation of the destination.

Consequently, smart solutions should not be designed to favour the growth of demand. In accordance with each local context, smart solutions are useful for managing flows but also to establish limits and, even for applying de-growth measures in those spaces under more stress due to tourism. The cities analysed reveal the capacity of ICTs to diagnose, control and influence the tourism activity of the city provided that there is a clear political will.

To date, an increasing use of technology to tackle the problem of overtourism may be observed. In this sense, it is important to develop a framework to integrate overtourism into the STC agenda based on the following elements:

- The technological applications play an instrumental role in the STC strategy, in many cases developing a complementary function to other measures such as regulatory actions.
- The efficiency in the use of ICT solutions depends on their integration within a holistic perspective of the STC, breaking information and management silos and avoiding the current dual management of the tourist cities.
Overtourism management must be based on the knowledge of the interaction of urban and tourism processes in order to develop place-specific solutions rather than the adoption of mimetic actions.

The capacity to influence the conduct of the different stakeholders (from demand behaviour to resident awareness and tourist firm commitment) is a key factor of success.

Instead of reactive measures a preventive approach is highly recommended.

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