

## PROFILING TOURISTS AND THEIR ICTs PERCEPTION AND USE ACROSS SPANISH DESTINATIONS<sup>2</sup>

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### Abstract

Information and Communication Technologies (ICTs) have been massively adopted by tourists in the three stages of the trip life cycle. However, how ICTs are perceived and used by tourists in tourist destinations with different characteristics still constitutes a research gap. It is necessary to better understand how different types of destinations attract determined market segments among which technology adoption and use might vary and have consequences over local tourism management. In this context, this paper aims to explore ICTs perception and use among visitors of three Spanish destinations making efforts through different strategies to become a smart city and/or destination: Calpe, Ávila and Gijón. This work also analyses whether there is a relationship between travellers' ICTs use and their own general profile, but also between ICTs use and destinations profile. Through a common questionnaire with punctual adaptations to local characteristics, a total sample of 1.513 answers from tourists visiting the destinations was obtained. The results, here presented in descriptive statistics, address matters like used technological devices and functions, but also attitudes towards technological mediation of tourist experiences and trust towards other stakeholders of the digital ecosystem.

**Keywords:** ICTs; Tourists; Tourist destination; Technology; Smart tourism destination

### Resumen

Las Tecnologías de la Información y la Comunicación (TIC) han sido masivamente adoptadas por parte de los viajeros en las tres fases del ciclo del viaje. No obstante, cómo dichas TIC son percibidas y usadas por los turistas en destinos con distintos perfiles constituye todavía un campo por abordar. Resulta necesario conocer en mayor

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profundidad cómo destinos con características diferentes atraen determinados segmentos de mercado en los que la penetración de las tecnologías puede variar y tener consecuencias en la gestión local del turismo. En este contexto, el presente trabajo tiene como objetivo conocer la percepción y utilización de las TIC que hacen los turistas de tres destinos españoles pertenecientes a un proyecto de investigación en el que se abordan como potenciales destinos inteligentes: Calpe, Ávila y Gijón. A través de un cuestionario de base común pero parcialmente adaptado a cada destino, se obtuvo una muestra total de 1.513 participantes. Los resultados, aquí plasmados en forma de estadísticas descriptivas, abordan aspectos como dispositivos tecnológicos usados o funciones llevadas a cabo, pero también actitudes hacia la mediación tecnológica de la experiencia turística y confianza hacia distintos *stakeholders* del entorno digital.

**Palabras clave:** TIC; Turistas; Destino Turístico; Tecnología; Destino Turístico Inteligente

## 1. INTRODUCTION

ICTs have meant a structural change for each of tourism components, influencing companies, destinations management, and also consumers' behaviour (Benckendorff, Sheldon, & Fesenmaier, 2014). Nevertheless, it is the combined effect of all the sectorial changes what has made a difference and opened the door to consider tourism as an ICT-based interconnected system in which digital interaction between stakeholders constitutes an opportunity, but also a challenge. This way, the irruption and massive adoption of ICTs has supposed a turning point for tourist destinations in their functioning and operations (Buhalis, Leung, & Law, 2011), and also for tourists in their attitudes and behaviour (Gretzel, Fesenmaier, & O'Leary, 2006). This means it is more important than ever to better comprehend how tourists' perceive and use ICTs to create and shape their trips as well as for destinations to deeply understand their tourists for a better public management (Pearce & Schänzel, 2013). In this context of technological mediation of all the processes, the concept of smart destination (SD) has emerged as a framework to work towards a better ICT-based destination management aimed at enhancing tourist experiences by providing more personalised services by relying on technological advancements such as ubiquitous connectedness and mobile technology, cloud services or sensors (Boes, Buhalis, & Inversini, 2015; Buhalis & Amaranggana, 2014; Wang, Li, & Li, 2013). The principal task of smart destinations is to enrich tourists' experiences and gain competitiveness by employing cutting-edge technologies (Buhalis & Amaranggana, 2014). Therefore, it is crucial to know in the first place how tourists actually use and perceive those ICTs that are expected to play such a prominent role for their experiences

and visited destinations. Still, although affected by technological disruption, distinct destinations entangle particular idiosyncrasies that make them unique. It is also likely that tourists visiting destinations with different characteristics will be themselves tourists with different motivations, profiles, and maybe, different levels of ICTs use. In this framework, this paper sets the following objectives: (i) to better understand the demand profile of three Spanish destinations in transition towards smartness by obtaining a closer perspective of their ICT and smart solutions perception and use, (ii) to discover any significant differences and guidance for smart destinations construction according to the first objective.

## **2. LITERATURE REVIEW**

### *2.1. Tourists, ICTs and smart solutions in destinations*

During the last couple of decades, tourists have widely adopted technologies at an increasingly fast pace. This has given rise to informed tourists, who are demanding, experienced and empowered thanks to the availability and use of ICTs (Gretzel et al., 2006). ICTs have this way shifted tourist behaviour in all the three trip stages and mediated how travellers construct and reconstruct their experiences in many of their dimensions (Tussyadiah & Fesenmaier, 2009). On one side, the internet has changed the pre-trip experience in the information search process and purchase of services. Different types of technological devices are now employed, the web has become the main information source, and search engines are combined with online travel agencies (OTAs) and suppliers' sites (direct booking) by travellers when deciding about their future trips (Xiang, Wang, O'Leary, & Fesenmaier, 2015). These online options co-exist with traditional travel agencies, and lately also with P2P 'sharing economy' platforms such as Airbnb, which are now part of the 'smart tourism ecosystem' (Gretzel, Werthner, Koo, & Lamsfus, 2015). At the same time, the uses or tasks performed by tourists while on the pre-trip phase are increasingly diverse and the barriers for using them are decreasing (Xiang, Wang, et al., 2015). Among all these technologies, some seem to be particularly relevant because of their implications. Social media for instance, has had great effects for information search process (Xiang & Gretzel, 2010), but have furthermore changed the way tourists perceive and socially construct their experience, implying a higher sharing of the experiences due to manifold factors, including helping other users, contributing to

the creation of content and also social recognition and relationship strengthening (Munar & Jacobsen, 2014). Another critical shift is the disruption provoked by mobile technologies. Mobile technologies are able to enhance tourist experiences in many ways by delivering higher levels of personalisation, interaction and co-creation of the experience (Neuhofer, Buhalis, & Ladkin, 2015). Smartphones have become commonplace for tourists and have changed the way experiences are lived (Wang, Xiang, & Fesenmaier, 2014). They make travellers feel better informed, socially connected and more entertained and safe, among other benefits (Wang, Xiang, & Fesenmaier, 2016). Thanks to these, but also other technologies and DMO-provided smart solutions and the exploitation of the available big data, smart destinations can create improved experiences and value for tourists (Gretzel, Reino, Kopera, & Koo, 2015; Koo, Yoo, Lee, & Zanker, 2016). Likewise, Boes et al. (2015) consider that SDs should focus on using ICTs for improving tourists' experiences and performance of organisations through a greater, jointly provided, co-creation of value. This way, smart destinations become spaces of intensive ICT-based interconnection in which data is constantly created and interchanged, and where several types of technological advancements are combined to provide better experiences to tourists (Gretzel, Sigala, Xiang, & Koo, 2015).

Thus, the smart destination concept has been able to capture this highly technological panorama and has progressively become a comprehensive destination management paradigm based on ICT-driven interconnection between stakeholders and use of big data (Femenia-Serra, 2018), and concreted in the use of smart solutions by their DMOs (Ivars-Baidal, Celdrán-Bernabeu, Mazón, & Perles-Ivars, 2017). The transformation of destinations into 'smart' is, at least in the Spanish case, driven by public institutions, and therefore, DMOs are expected to develop a set of technological solutions to advance in this direction. Smart solutions include public Wi-Fi, mobile apps, beacons, advanced websites or social media interaction, among other. Their potential to enhance tourists' experiences has been emphasised (Koo, Yoo, Lee, & Zanker, 2016), but again conducting a critical assessment of the level of acceptance and use of these smart solutions among tourists is crucial to actually obtain their success level. While it seems that the level of acceptance of these smart solutions is elevated among younger generations of tourists like millennials (Femenia-Serra, Perles-Ribes, & Ivars-Baidal, 2018), there is a critical need

to better understand how different types of tourists perceive and use them. This is particularly true in the case of real destinations which are making efforts to become smart.

## *2.2. Spanish destinations towards smartness*

The public push for developing smart destinations has been particularly strong in Spain, with many institutions fostering policies and plans in this direction (Femenia-Serra, 2018). In this context, three destinations were selected for this study according to the objectives of a publicly-funded R&D project and because of their particular characteristics. Striving for diversity of destinations types, three locations were selected: Ávila (Castilla y León), Calpe (Comunitat Valenciana) and Gijón (Asturias).

### *2.2.1. Ávila: A smart heritage destination*

Ávila is a medium-range city located in the Spanish region of Castilla y León, with an approximate population of 60.000 inhabitants, that is within the Spanish context a relevant tourist destination with a clear cultural and heritage-based profile. It is part of the heritage destinations that belong to the tourist region of Madrid, and therefore one-day visits have a notable relevance. The city's old town was declared as protected historic area in 1982 and has been included in the UNESCO World Heritage Site list since 1985. This heritage is the city's main tourist attraction and is composed by the monumental buildings within the walls as well as the Romanesque churches out of the walls: a total of 51 monuments, from which 40 are declared *Bienes de Interés Cultural* (heritage of cultural interest). From these, 12 have regulated access and are prepared for tourist visits. This heritage richness can be grouped into the thematic categories 'medieval wall', 'Saint Teresa and related foundations', 'Romanesque art' and 'XVI century palaces'. Ávila's image is constructed over these themes.

In tourist offer terms, Ávila has 47 accommodation facilities (hotels, hostels and apartments) and 2.691 tourist beds. It is also interesting to point out that tourist apartments offered in P2P platforms are rare, as only around 40 tourist apartments are currently present in Airbnb (01/06/2018). In terms of tourist flows, it is estimated that the city receives around 750.000 annual visitors, even though statistics are uncertain in some degree. Although always known, Ávila emerged as a notable tourist destination in the

1990s. Since then, tourist offer and demand have been grown exponentially. This growth is founded on a great internal demand, while foreign demand counts for around 25% of visitors. In 2016 a total of 264.450 tourists spent at least one night in Ávila, 120.801 visited the tourist information office and the tourist reception centre, while 234.957 visited the walls (Ayuntamiento de Ávila, 2016). Taking into account these numbers, it can be easily deducted that tourist is determinant for the city, representing 23% of local GDP and around 3.000 direct and indirect jobs (Tribuna Ávila, 2016), which represents 15% of total existing jobs in the city.

The destination has started to work on initiatives related to smart tourism. It became a member of the Spanish smart cities network (RECI) in 2013 and is designing its own smart strategy within which tourism-related actions are considered. These include: monuments efficient lightening, creation of mobile apps, unified and digitalised registers for visitors and implementation of public free Wi-Fi. One of the most remarkable action has been the inclusion of the city wall and cathedral in a smart heritage project led by the foundation *Fundación de Santa María la Real del Patrimonio de Castilla y León*, based on the application of technological solutions to heritage preservation. Moreover, the city has its own smart heritage city project (Interregional programme Sudoe) and is one the country's pilot destinations. This project is based on the design and implementation of tools based on ICTs and expert knowledge from different disciplines to enhance urban and heritage management.

### *2.2.2. Calpe: A sun and sand mass destination*

Calpe is located in the northern coast of the province of Alicante (Spain) and is a representative case of Mediterranean town which has experienced a rapid growth since the 1960s, becoming a well-known 'sun and sand' mass destination in which tourism was combined with a strong real state sector (Perles-Ribes, Ramón-Rodríguez, Vera-Rebollo, & Ivars-Baidal, 2017). The destination has entered a 'maturity' phase and construction activity has decayed notably since the irruption of the economic crisis ten years ago. This has forced the destination to try to attract new investments in hotels rather than new residences with a second-home function. Within this context and with the aim of transitioning towards a more sustainable and innovative model to reposition the

destination's image, the local city hall has embraced the concept of smart destination (Perles-Ribes & Ramón-Rodríguez, 2018). In line with this, the smart destination project of Calpe began with a characterisation of the destination and surveys to demand and tourist offer. Afterwards, a preliminary strategic plan to become a SD has been approved and the first actions have started to crystallise with European funds. The combination of the objectives of sustainability and smartness are perfectly aligned, and therefore the new funding lines will be used to develop: a smart tourist office (with cutting-edge technologies for information and guidance), mobile app, digital post signs, new data analysis tools and public Wi-Fi, among other (Perles-Ribes & Ramón-Rodríguez, 2018). Other actions are aimed at improving the destination's accessibility, innovation level and public-private partnerships. This way, a traditional sun and sand and residential destination is making efforts to evolve towards a more sustainable and smart destination profile.

### *2.2.3. Gijón: An emergent urban destination*

The city of Gijón is located in the coast of Asturias and has been traditionally known for its industrial character. Tourism started to develop in the 1980s together with a deep urban and social regeneration process (Valdés et. al., 2011). In 1991 tourism becomes one of the main priorities within the first strategic plan of the city and crystallised in the creation of the destination management organisation (currently known as DIVERTIA) as well as in the reconstruction of many urban spaces into new leisure facilities. In these processes it is assumed that tourism will be one of the main economic pillars of the city.

Gijón integrates a diverse offer and tourism products: nature (beach, coastline, landscape, proximity to rural areas), business and meetings facilities, culture (museums, historic heritage, etc.) as well as gastronomy and sport events. The numerous actions regarding sustainability and ICTs application were articulated in the strategic plans, particularly in the strategic plan for 2002-2012 ('Gijón-In: a connected city that connects'), in which a diagnosis was made, and a model to transform Gijón into a smart city proposed. The new smart project started in 2013 and is being implemented in the period 2015-2019, structured in five main improvement areas: Urban mobility; Environment; Social innovation; Governance; Economy, business and energy. Several actions are being made

in each area (Gijón Smart City, 2018): Regarding urban mobility, a public transport card has been created and a public biking service launched, together with the Labcitycar and TIDE projects. The city has also joined several networks of cities to advance in the protection of environment and has created a technological system to control and manage the public float of vehicles as well as emergency services efficiently. With respect to social innovation, the destination has implemented public free Wi-Fi in the main streets, has created an open data website, and has joined the INNPULSO network to support science and innovation. Regarding governance, economy and businesses, Gijón has improved inter-administration collaboration, has joined the projects TETRA and Ecomilla and is part of the municipal transparency index, as well as RECI network. The city has also optical fibre available, uses renewable energy for municipal buildings and vehicles and has implemented led bulbs for street lightning. Currently Gijón is developing the new strategic plan for 2016-2026 to strengthen its compromise with sustainability, energy efficiency and a low carbon economy in combination with further use of ICTs.

### **3. METHODS**

To pursue the established objectives, a common questionnaire was designed for tourists of the three destinations under study. The questions were originally organised into several blocks, here reorganised for higher clarity into three sections: (1) Respondents' profile; (2) Motivations, online channels and ICTs perception; and (3) Technological devices and smart solutions. While the base of the questionnaire was the same for the three destinations, due to different technical capacity and resources, Calpe decided to adopt only part of it and combine it with different questions which deepened into the general profile of the tourists visiting the destination. In this context, with the help of several students and technicians, the survey was carried out at the three selected destinations between July and November 2016, obtaining a total of 1.513 valid answers, from which 800 were obtained in Calpe, 336 in Ávila and 377 in Gijón. Tourists were recruited in public spaces, and also in their accommodations in the case of Calpe (hotels, camping sites and apartments). The questionnaires were completed face-to-face. Following the data collection process, the results from the surveys were analysed individually by each destination and then collated and compared in detail. Basic descriptive statistics allowed

to better understand how tourists perceive and employ ICTs in each destination as well as to find similarities and dissimilarities across destinations.

## 4. RESULTS

### 4.1. Respondents' profile

Based on the results, a fair characterisation of the tourism demand can be done for the destinations. The first and most notable difference is origin of visitors. In the case of Calpe, almost half of tourists come from foreign countries, with a great diversity within this group dominated by European travellers. However, the opposite happens in Gijón, and most of all in Ávila, where foreign visitors represent a minority in which both European and Latin-American markets are present.

Table 1. Tourists basic demographic data (in %)

	Calpe	Ávila	Gijón
<b>Nationality</b>	Spanish: 55,00	Spanish: 92,00	Spanish: 86,21
	Foreign: 45,00	Foreign: 8,00 <sup>3</sup>	Foreign: 13,79
	<input type="checkbox"/> French: 13,78 <input type="checkbox"/> British: 8,04 <input type="checkbox"/> Belgian: 7,18 <input type="checkbox"/> Swiss: 2,70 <input type="checkbox"/> Hollander: 2,15 <input type="checkbox"/> Rest: 11,15	<input type="checkbox"/> Argentinian: 2,40 <input type="checkbox"/> Mexican: 1,60 <input type="checkbox"/> British: 1,20 <input type="checkbox"/> Portuguese: 1,20 <input type="checkbox"/> Rest: 1,60	<input type="checkbox"/> British: 5,83 <input type="checkbox"/> Argentinian: 2,12 <input type="checkbox"/> French: 1,59 <input type="checkbox"/> Rest: 4,24
<b>Age</b>	18-34: 27 35-64: 61,53 65 or more: 11,47	18-34: 35,71 25-64: 61,31 65 or more: 2,98	Mean: 43,76

<sup>3</sup> Foreign visitors represent a higher percentage in official statistics (between 25% and 30%). This might be due to the time of the year in which the present study was carried out.

<b>Gender</b>	Male: 51,80 Female: 48,20	Male: 48,51 Female: 51,49	Male: 49,87 Female: 50,13
<b>Level of studies</b>	<input type="checkbox"/> No studies: 0,18 <input type="checkbox"/> Primary and secondary: 55,77 <input type="checkbox"/> University: 43,35	<input type="checkbox"/> No studies: 0 <input type="checkbox"/> Primary and secondary: 48,00 <input type="checkbox"/> University: 52,00	<input type="checkbox"/> No studies: 0,27 <input type="checkbox"/> Primary and secondary: 55,04 <input type="checkbox"/> University: 44,96

Second, there doesn't seem to be remarkable differences regarding gender distribution or age across destinations, or gaps within these groups. However, Calpe tourists seem to be slightly older than those of Ávila, while the data of Gijón impedes a comparative analysis in this matter. Educational level is also similar across destinations, with the only exception of Ávila, in which university graduates account for more than 50%. Nevertheless, great differences emerge when accommodation data are observed (table 2). In this case, the characteristics of destinations appear clearly, and two main types of destinations seem to crystallise. On one hand, Calpe is dominated by holiday rentals and own/lent residences, accounting for more than 75% of the cases, while less than 20% of tourists stay in hotels. This has a clear influence over stay length, which is much higher in rentals and own/lent properties than in hotels. Calpe has a clear long-term vacation profile. In the cases of Ávila and Gijón, most tourists choose to stay in hotels, but also hostels play an important role. These two destinations have a very different profile compared to Calpe, with much shorter stays and also a lower degree of repeat visitors. These destinations fit into the category of urban and cultural 'city breaks'.

Table 2. Accommodation and visitation data (in %)

	<b>Calpe</b>	<b>Ávila</b>	<b>Gijón</b>
	<input type="checkbox"/> Hotel: 19,15 <input type="checkbox"/> Own or relatives property: 39,92	<input type="checkbox"/> Hotel: 70,87 <input type="checkbox"/> Own or relatives property: 8,66 <input type="checkbox"/> Rental: 3,93	<input type="checkbox"/> Hotel: 65,16 <input type="checkbox"/> Own or relatives property: 10,91 <input type="checkbox"/> Rental: 3,46

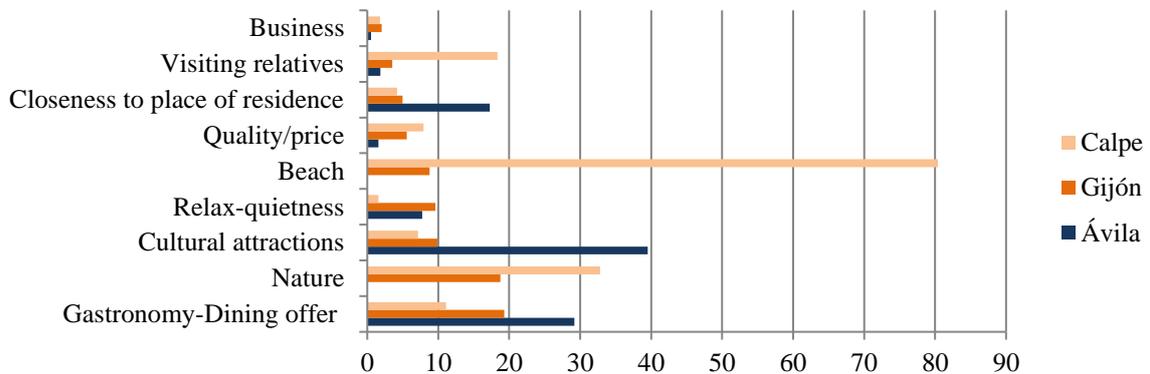
<b>Accommodation (%)</b>	<input type="checkbox"/> Rental: 37,62 <input type="checkbox"/> Other (camping, hostel): 3,87	<input type="checkbox"/> Other (camping, hostel): 14,96	<input type="checkbox"/> Other (camping, hostel): 20,68
<b>Mean stay</b> (no. of nights)	Nights: 17,02 <input type="checkbox"/> Hotels: 7,86 <input type="checkbox"/> Rental/property: 18,85	Nights: 1,58	Nights: 3,09
<b>Repeat visitation (%)</b>	<input type="checkbox"/> First: 33,40 <input type="checkbox"/> Repeat: 66,60	<input type="checkbox"/> First: 58,33 <input type="checkbox"/> Repeat: 41,67	<input type="checkbox"/> First: 59,95 <input type="checkbox"/> Repeat: 41,05

Regardless of tourists' profile and the type of destination, the general satisfaction of visitors with the destination is elevated: 8,38/10 for Calpe, 8,40/10 for Ávila and 8,26/10 for Gijón.

#### 4.2. Motivations, online channels and ICTs perception

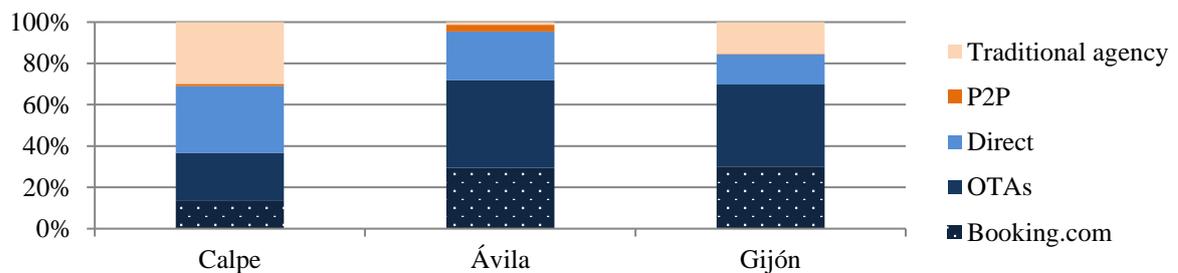
One of the main aspects needed to profile tourists is the motivations behind their decision to visit a destination. Although slightly adapted to each destination because of their intrinsic characteristics, some relevant findings arise for this matter. According to the depicted profile of Calpe as a recreational, sun and sand destination, 'going to the beach' is a main motivation for around 80% of visitors. The natural parks make 'nature' one of its main attractions as well. In the case of Gijón there isn't a clear predominance of any factor, but 'nature' and 'gastronomy' stand as the two most important. In the case of Ávila, its 'cultural attractions' are by far the main motivation together with its famous 'gastronomy' and its closeness to the visitors' place of residence. The latter can be clearly related to Ávila's closeness to Madrid, which is the main market for the city.

Figure 1. Main motivations to choose destinations (in %)



Another relevant aspect, which also speaks for ICTs perception and use in the pre-trip stage is the preferred booking channel for accommodation. Again, in this case dissimilarities flourish among destinations (figure 2). Tourists of Gijón and Ávila share a similar use of booking channels, with a clear predominance of OTAs (around 70%). Direct booking tourists-to-business is a significant share of the bookings, although they seem to be more relevant in Ávila, together with a small amount of people booking their accommodation through P2P platforms, such as Airbnb. In the case of Gijón, traditional travel agencies also seem to play a limited role. A different situation is found in Calpe. Here OTAs account for less than 40% of reservations, direct booking (no intermediaries) is superior to 30% and traditional agencies play an important role. There is in this case a high diversity of preferred booking channels among visitors. In all the three cases, the company Booking.com© is the most used OTA by far, with around 30% of total bookings for the cases of Ávila and Gijón.

Figure 2. Used booking channels by destination



Once the general profile of tourists for the three destinations was clear enough, their perception and use of ICTs was queried through several specific questions. For testing their general attitude towards new technologies, several statements had to be ranked by participants in a Likert scale (from 1: *totally disagree* to 5: *totally agree*). The results (Table 3) show how tourists generally agree with the usefulness of technologies for their trips and value that destinations try to use them to enhance their experiences. However, results also show a certain preoccupation for privacy and personal data use by tourist companies. This preoccupation seems to be higher in the case of Ávila’s visitors (third and seventh items).

Table 3. Tourists’ attitudes towards technological mediation of trips

	Gijón	Ávila	$\bar{x}$
‘Technologies are useful tool for my trips’	4,06	4,42	4,24
‘I value that my destination tries to innovate by using technologies to enhance my experiences as a tourist’	4,08	4,13	4,10
‘I am worried about a business knowing and registering my activity at my destination’	3,33	4,02	3,67
‘I trust what other tourist post on websites like Tripadvisor or Booking.com’	3,40	3,68	3,54
‘Technologies help me to have a more satisfactory experience as a tourist’	3,37	3,85	3,61
‘Technologies are a fundamental part of my trips’	3,64	3,26	3,45
‘What I see on social media influences in my opinion about a tourist destination ‘	3,39	3,43	3,41
‘I would let tourist businesses to obtain my online personal data in exchange of more personalised services or discounts’	2,75	1,98	2,36

While technologies seem to be allies for tourists visiting these destinations, online information is not completely embraced, as social media for instance seem to influence tourists’ perception in a limited scope. Furthermore, regarding tourists’ predisposition to share their experience on social media, there are slight differences. While people visiting Ávila is highly prone to do so (74%), in the case of Gijón (62%) and Calpe (58%), this attitude does not seem so strong. When asked for preferred online channels to share their experience, WhatsApp (61,22%), Facebook (58,47%) and Instagram (24,24%) were at the forefront at the three destinations.

### 4.3. Technological devices and smart solutions

Regarding the possible different types of technological devices used for their trips (table 4), findings show smartphone is widely used across different types of destinations irrespective of the main motivation and attraction factors. However, some nuances can be observed with respect to the use of tablets and laptops. Tablets appear to be used more in Gijón, an urban and more business-oriented destination. It also seems that laptops are rarely used by Ávila's tourists, while they are employed by a minority in Gijón and Calpe. This might be due to the short stay length in Ávila.

Table 4. Use of technological devices

	Calpe	Ávila	Gijón	$\bar{x}$
Smartphone	94,46%	95,00%	91,76%	93,74%
Tablet	19,87%	18,00%	27,39%	21,75%
Laptop	12,98%	1,00%	16,22%	10,07%
None	4,71	3,00%	0,00	2,57%

Regarding the different uses these devices might be given, differences emerge between destinations (table 5). Some tasks are carried out by a majority of tourists across the three locations, including interpersonal communication and taking pictures or videos, while other like sharing their experience through social media and orientating themselves present are present in a lesser degree.

Table 5. Performed tasks (In %)

<i>What do you use these devices for?</i>	Calpe	Ávila	Gijón	$\bar{x}$
To talk-chat with relatives	96,75	80,48	86,67	87,97
To take pictures/videos	73,96	85,59	75,73	78,43
To share my experience on social media	45,87	45,25	41,07	44,06
To consult maps or use GPS	44,81	85,29	59,47%	43,56
To search for restaurants	31,84	41,10	38,13	37,02
To search for attractions and activities	29,83	38,51	59,73	42,69
To book activities	15,21	23,88	23,73	20,94
To pay (via smartphone)	4,84	5,11	6,13	5,36

It is notable how in the case of Ávila, the use of technological devices to consult maps or use GPS (orientation) is higher than in Calpe and Gijón, which reflects how in a cultural destination tourists' movement responds to more complex patterns. In line with this, the active search for attractions and activities is also superior in the case of urban destinations than in Calpe. The level of repeat visitors could partly explain this phenomenon as well as the lower percentage of travellers searching for restaurants. Thus, it seems that the tasks performed by tourists through ICTs are more diverse and complex in cultural and urban destinations than in sun and sand destinations. Following the use of their own devices, tourists were required to detail their actual use or interaction with the destinations' smart solutions. In table 6 it can be observed how many of the proposed smart solutions are not widely used by tourists.

Table 3. Smart solutions: use/interaction (in %)

	Calpe	Ávila	Gijón	$\bar{x}$
Companies Wi-Fi	72,40	10,12	43,20	41,91
DMO website	35,32	31,54	21,98	29,61
Public Wi-Fi	36,66	4,76	11,80	17,74
DMO's social media profiles	21,76	11,90	12,13	15,26
Audio guides	6,72	20,23	2,41	9,79
Tourist Card	-	4,76	4,01	6,77
Destination App	6,84	2,08	2,69	3,87
Video guides	2,77	-	0,27	2,91
QR codes	6,00	0,89	1,07	2,65

Wi-Fi provided by companies, DMO's official website or social media interaction with DMO are the most widely used solutions. Nevertheless, there are notable differences across destinations. In the case of Ávila, tourists rarely use companies Wi-Fi or public access options, while the use of audio guides is higher due to their popularity while visiting the city's monuments. In general, tourist cards and video guides seem to have little impact. The same happens with mobile applications and QR codes, which are only slightly used in Calpe. Subsequently, those respondents using the specified technological solutions were asked to assess (From 0 -min.- to 10 -max.-), to what degree these solutions

enhanced their experiences as tourists. The results (table 4) are rather positive, as many of the solutions are highly valued. Apparently, there is not a clear and homogeneous rating of smart solutions across destinations, as there is a low consistency except for audio guides, tourist card, and social media, very valued in all cases.

Table 4. Tourists' assessment of smart solutions for experience enhancement

	Calpe	Ávila	Gijón	$\bar{x}$
Tourist Card	-	8,87	8,40	8,63
Video guides	8,09	-	8,00	8,04
Destination social media profiles	7,8	8,25	7,49	7,84
DMO website	7,74	8,21	7,48	7,81
Audio guides	7,44	7,18	7,77	7,46
QR codes	7,28	8,67	5,50	7,15
Companies Wi-Fi	7,08	4,93	8,52	6,84
Public Wi-Fi	5,74	6,87	7,55	6,72
Destination App	8,03	4,28	7,81	6,70

## 5. CONCLUSIONS

The three destinations present different characteristics that attract distinct profiles of tourists. On one side, Calpe has a more internationalised demand market, with a clear long-term recreational profile in which tourist rentals and beach and nature-related motivations are dominant. In this location, traditional intermediaries play still a remarkable role. On the other side, Ávila and Gijón represent urban, cultural and gastronomic destinations which are much more popular among Spaniards. Hotels and hostels encompass the biggest part of overnights, and OTAs are particularly relevant because of their dominance of the market. Shorter stays and diverse motivations are characteristic of these destinations. No big differences arouse regarding formation level or gender distribution and independently of the destinations characteristics. Some findings can be deemed as 'cross-cutting': First, it is confirmed that tourists of any type of destination employ mobile technologies, particularly smartphone, and that manifold tasks are performed through these devices. This is in line with previous findings for younger tourists (Femenia-Serra et al., 2018), and responds to the clear benefits mobile technologies render tourists (Neuhofer et al., 2015; Wang et al., 2016). However, it seems that in urban destinations tourists do an even more diverse use of these technologies

compared to the case of Calpe, in which the use is lower for consulting maps or using GPS, searching for restaurants, attractions and activities and booking activities. Higher rates of repeat visitation (previous knowledge of context) and a lower relevance of cultural attractions might explain this difference. Regarding the increasing technological mediation of their trips, tourists do recognise the usefulness of technological tools and how they influence their decisions, but at the same time show preoccupation for their privacy and seem sceptical about the role of some digital players. Finally, regarding smart solutions, there are notable differences between the different destinations' visitors. Calpe tourists employ in a higher degree smart solutions for their trips, although the use rate is still low for many of the implemented technologies (app, QR codes, audio guides and video guides...). In Ávila and Gijón, results demonstrate how even the most popular solutions are not widely adopted by tourists. However, the assessment of those using actually these solutions is positive in the three cases, with some punctual exceptions. In a nutshell, even though smart solutions are powerful for destinations management and for tourist experience enhancement (Ivars-Baidal et al., 2017) and tourists have adopted technologies rapidly, DMOs still need to work on their strategies to connect and improve tourists' experiences through the right tools. There is a need for a long-term strategic planning in this regard, based on a deeper knowledge of tourists' needs and preferences. The findings presented support the need for destinations to develop more detailed studies of tourists' preferences before any technology implementation and call for a design of smart destinations far from a technocentric approach. DMOs need to reinforce actions through most widely adopted devices and channels and put less effort in rather unpopular solutions. Nevertheless, this study provides limited insights and more detailed results might emerge through statistical analyses that bring to surface underlying relationships among variables. Besides, the partial adaptations of the questionnaire, although enriching for each destination management (key aspect when designing), limits the possibilities for its exploitation.

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