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# Competitiveness, Intelligence and Sustainability in Consolidated Destinations: What We Know and Pending Research Challenges

## Abstract

Competitiveness, sustainability and innovation have been studied by the tourism literature at least since the 1990s. In spite of the advances made in the comprehension of these concepts, the dynamic nature of the industry continually generates new practical challenges for the public and private agents of the sector and scientific challenges for tourism researchers. Currently, globalization and digital progress, the emergence of new marketing platforms, the increased saturation of certain destinations and the COVID-19 pandemic are significantly affecting the competitiveness and sustainability of tourism activity. This calls for a scientific review of what we know about the competitiveness and sustainability of the sector and an analysis of its feasibility in this new competitive environment that is constantly and intensely transforming, even more so in the post-COVID19 era. The objective of this article is to conceptually analyze the state of this question, using Spain as a case study, as it has been the global leader in tourism competitiveness in recent years. The high level of consolidation of the Spanish tourism sector enables us to make a more in-depth analysis of the implications of these phenomena and to extract practical lessons for destinations that are in the more initial phases of their life cycles.

**Keywords:** competitiveness, smartness, sustainability, digital tourism, sharing economy, overtourism, COVID-19

## 1. Introduction

Over the last few decades, the tourism sector has become consolidated as one of the largest economic sectors with the highest growth in the world. In 2018, international tourist arrivals reached a record 1,442 million people with a growth of 5.77% with respect to 2017 (World Tourism Organization [UNWTO], 2020). Before the COVID19 pandemic, tourism accounted for 10% of GDP on a global level, 7% of total international trade and 30% of world service exports, equaling or exceeding the value of oil or car exports, for example. Going beyond the figures, tourism plays a key role for the development of many countries and regions, thanks to its capacity to create employment and reduce poverty (Samini & Sadeghi, 2011; Schubert et al., 2011) or as an instrument for diversifying their economic base (Porto, 1999, Perles-Ribes et al., 2017a).

On a scientific level, two themes which have attracted the interest of tourism researchers for at least thirty years are the competitiveness and the sustainability of the activity and the destinations (Song et al., 2012). Although important progress has been made in these fields, the complexity of these phenomena means that these lines of research are not closed. This circumstance has been recently aggravated by the disruptive changes

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in the sector and the post COVID19 environment. These include the emergence of the digital economy, the new forms of marketing, communication and distribution or the tourist saturation of some cities which causes difficulties for the cohabitation of residents and visitors, together with the emergence of the COVID19 pandemic and the need to exercise social distancing.

All of this represents a true challenge for the managers and agents involved in the development of destinations and also for researchers. Therefore, in addition to the issues of conceptualization, modelling and measurement yet to be resolved within the framework of the natural evolution of the tourism activity and the destinations, we can add new scientific challenges derived from the accelerated speed of this new competitive environment.

Taking all of this into account, this article addresses, on a conceptual level, the state of the art in terms of the competitiveness and sustainability of tourist destinations, using a combination of two methodologies: 1) theory adaptation (Jaakkola, 2020) relating to the construction of conceptual papers; and 2) a case study.

On a conceptual level, the paper does not follow the classic methodology of the literature review or meta-analyses; rather it conducts a theory adaptation exercise. According to (Jaakkola, 2020, p. 23), papers that focus on theory adaptation seek to amend an existing theory by using other theories. Theory adaptation papers develop contribution by revising extant knowledge through introducing alternative frames of reference to propose a novel perspective or an extant conceptualization. In this respect, the aim of this article is to review the competitiveness and sustainability of the tourist destinations in their adaptation to the new tourism environment.

With respect to the case study, some processes and challenges caused by this new environment are more widely and deeply appreciated in tourist destinations that have reached a high degree of development or tourism maturity and in which tourism is a key or fundamental sector of their economy than in emerging tourist destinations. Spain fulfills both of these criteria perfectly, making it the ideal case study.

This country is one of the principal recipients of tourism on a global scale and according to the Travel and Tourism Competitiveness Index (TTCI) of the World Economic Forum (WEF, 2019), the most competitive in the world in this industry from 2015. It is worth highlighting that tourism is a strategic activity for the Spanish economy, accounting for 14% of its GDP, favoring its resistance to economic crises and displaying an enormous innovative potential, at least until the recent COVID 19 crisis.

In addition, the high level of consolidation of tourism in Spain enables a more in-depth analysis of the implications of these phenomena and facilitates the extraction of practical lessons for destinations that are in the more initial phases of their life cycles. The novel objective of this article is, therefore, to detect the gaps existing in the literature with respect to competitiveness and sustainability, establish the bases of a possible debate on these issues and contribute to guiding, where possible, the future direction of research on this topic.

It could be argued that the topic addressed is very extensive and ambitious. There is a myriad of conceptual and empirical papers addressing each of these topics, which confirms that they are highly relevant study topics for the scientific literature on tourism. However, this fact does not diminish the value of papers such as this one, which does not seek to develop each topic in depth, but rather to present, from a global perspective, the most relevant challenges that exist today for researchers and destination managers in each of these phenomena and the degree of adaptation of the various existing theories to this new environment. This justifies their unitary treatment in a single paper, as in the case of this article, because when they are analysed separately, the perspective and important relations that exist between the phenomena are lost.

The article is structured into the following sections. After this introduction, the second section describes the current state of the debate surrounding the concepts of competitiveness, sustainability and innovation and presents the new competitive environment generated by the disruptive changes occurring in the economy. The third section, discusses, by way of research propositions, the principal challenges for researchers. In the final section the main conclusions are drawn.

## 2. Competitiveness, sustainability and innovation in Spain in the new digital era: The state of the art

### 2.1. Tourism competitiveness and innovation

Tourism competitiveness and its measurement is a research field that dates back to the early 1990s. Despite the undeniable advances made, both in its theoretical analysis and its practical aspects, this research topic is far from being closed. According to Abreu-Novais et al. (2016), researchers of this subject has still got a lot to achieve, both in terms of defining the concept and in the theoretical models underlying its explanation and the empirical studies that seek to measure the reality of the construct.

With respect to the definition, the literature has reached a consensus. Initially competitiveness was conceived as the ability of destinations to exceed their competitors in economic terms, their attractiveness or the satisfaction of the tourists; however, nowadays it is conceptualised as the ability to generate prosperity and the sustainability of destinations (Crouch & Ritchie, 1999; Dwyer & Kim, 2003; Abreu-Novais et al., 2016:). However, far from having a closed definition, there are on-going debates related to its dimension and levels of observation (Ajitabh & Momaya, 2004; Bhawsar & Chattopadhyay, 2015). Furthermore, competitiveness usually has a different meaning for different stakeholders and the smart tourism ecosystem players (Cimbaljević et al., 2019), depending on their interests. Therefore, future research efforts should be focused on refining the concept, introducing these nuances and specifying the clear meaning of what is analyzed in each case (Abreu-Novais et al., 2016; Cimbaljević et al., 2019).

With respect to the conceptual models, Abreu-Novais et al. (2016) indicate that the models proposed by Crouch and Ritchie (1999) refined by Ritchie and Crouch (2003), Dwyer and Kim (2003) and Heath (2003) are those that have been most successful. These models are comprised of a series of determinants grouped into three categories: inherent elements or advantages of the destination; created and manageable determinants; and external or exogenous elements of the environment over which the destination has no control (Abreu-Novais et al., 2016, p. 501). However, the challenge at this point resides in the need to improve the understanding of the impact and relevance of each determinant. A significant part of the recent literature has been dedicated to these efforts although no consensus has yet been reached - except with regard to the undeniable importance of the core resources as basic determinants of competitiveness. This requires researchers to adopt a more complex approach that can be possibly adapted to the reality of each destination in terms of the stage of its life cycle, its production specialisation and the different segments on which its activity is focused. Furthermore, there is a clear need to establish the cause and effect mechanisms which are understood as being implicit in the different explanatory models so that they may be tested from an empirical point of view, which is not currently possible (Abreu-Novais et al., 2016, p. 502).

The importance of innovation in the advances made in the competitiveness of destinations has been the object of recent studies (Hjalager, 2010; Romão, & Nijkamp, 2017; García et al., 2018; Melkić & Čavlek, 2020). Research in the field of tourist intelligence in destinations is basically focused on the importance of ICTs as a useful tool from a demand perspective (Del Chiappa & Dall'Aglio, 2012) and their influence on supply in terms of the attractiveness of the destination. Given the impact that the integration of technology has on smart destinations in terms of the capacity to interact with tourists, there is a growing need to explain the role that the smart concept has in the competitiveness of the destination (Boes et al., 2016; Cimbaljević et al., 2019; Femenia-Serra et al., 2019), and how tourism is going digital (Kazandzhieva & Santana, 2019). But it is more than this. According to García et al. (2018), innovation is not only an enhancer of competitiveness, it is a more relevant concept; it can be a generator of prosperity in its own right because innovation in every aspect will provide a better quality of life for the destination.

With respect to measurement, although competitiveness is usually measured through economic indicators such as arrivals and expenditure and social indicators such as satisfaction and sustainability, there are pending

challenges in terms of what is measured (many current research efforts are based on a small number of indicators); how it is measured, highlighting the need to use a combination of quantitative and qualitative measures, improve analysis techniques, specify the territorial level of the definition of destinations and the number of comparative competing destinations and for whom it is measured, that is the supply or demand perspective of the analysis (Abreu-Novais et al., 2016, p. 508).

In Spain, the debate on tourism competitiveness, on an applied and conceptual level, faithfully reflects the international scientific evolution. Initially, issues related to quantitative aspects such as the demand captured, market shares and the economic impact generated by the activity were predominant; however, over time, the debate has shifted towards more qualitative aspects, such as the need to reconvert mature destinations and the need to redirect the activity towards sustainability (Antón, 2004; Vera & Baños, 2004). The purpose of this is to emphasise the differences between the different tourism models that exist (holiday tourism versus urban tourism; residential versus hotel; mature destinations versus emerging destinations, etc.) and not to study the industry as a whole. The studies by Perles-Ribes et al. (2011, 2016a, b, 2018), and Such-Devesa (2018) focused on the comparative analysis between different models of implementing tourism development reveal that in such a tourism-rich country such as Spain, it is necessary to understand the nuances existing in each type of tourism. If not, it is impossible to fully understand an issue as complex as the competitiveness of a destination. Currently, and in accordance with the above-mentioned international trend, the central focus of the study of Spanish tourism competitiveness is sustainability, the innovative environment or, more recently, the greater or lesser smartness of destinations, among other factors.

With respect to their determinants, the Spanish literature has also experienced a significant evolution. The pioneering studies on the subject (e.g. Buisán, 1997; Padilla, 1988), in a simplified way, indicate the important competitive advantages to be gained from Spain becoming a tourism power (located close to the issuing markets, enviable climate and prices). The most recent studies (e.g. Romeiro & Costa, 2010; Andrades-Caldito et al., 2013; García & Siles, 2015; Blanco-Cerraledo et al., 2018; or Camuñez et al., 2018) use more complex models, highlighting the importance for the success of the Spanish destinations of the core resources, but also revealing that before their inevitable deterioration caused by unsustainable tourism growth, the destinations have sought new sources of competitiveness in advanced factors (such as safety infrastructures, but particularly innovation). Specifically, the article of García and Siles (2015) proposes an adaptation of the comprehensive models of Crouch and Ritchie (1999) and Dwyer and Kim (2003) for the Spanish Mediterranean regions highlighting the relevance of the improvements in specialisation, services, assessment, cultural factors and attractiveness as the engine of Spanish competitiveness. This complex analysis can also be found in Morales et al. (2016), who analyze the relationship between the evolution of the demand of the whole of the Spanish economy compared with the principal components of tourist spending, and in Perles-Ribes et al. (2017) that empirically demonstrate the role of tourism as a generator of long-term economic growth in Spain.

Finally, with respect to measurement, while the original studies related the analysis of competitiveness to the prices and exchange rates of the Spanish tourism industry (Ramón-Rodríguez, 1997), the most recent, derived from the latest global economic and financial crisis and its influence in the initial years of 2008 and 2009 and the difficulties experienced by the principal competitors in the Mediterranean, have given this topic new impetus. Furthermore, these recent studies incorporate a differentiation of the effects of competitiveness depending on the type of the destinations. For example, the study carried out by Perles-Ribes et al. (2013) addresses the idea of a competitiveness that fluctuates over time and, in accordance with changes in economic and technological paradigms, requires an adaptation of the destinations. To do this, part of the competitive evolution of tourism in Spain is measured using the international market share of the country, which has been decreasing in recent decades due to the natural emergence of new competing destinations and the mature phase of the life cycle reached by the principal product of the Spanish tourism industry. Therefore, and despite Spain's leadership position in global tourism, indicators such as the previously-mentioned Travel and

Tourism Competitiveness Index (TTCI) reveal the need to undertake changes and competitive adaptation to capture a new demand. On the other hand, Perles-Ribes and Ramón-Rodríguez (2013) examine how the economic crisis affects tourism competitiveness, differentiating between emerging and mature destinations. In a more international comparison, Perles-Ribes et al. (2016a) analyze the impact on tourism competitiveness in several Mediterranean destinations in different stages of maturity after the *Arab Spring* and the ensuing instability. Finally, Perles-Ribes et al. (2016b) propose the transmission mechanisms that underlie the relationship between the economic crises, tourism competitiveness and the results obtained depending on the type of destination, reinforcing the understanding of the theoretical foundations existing between *economic crises and the success of destinations*. It is expected that some of these mechanisms will play a relevant role in the economic situation of the destinations derived from the COVID19 pandemic.

In short, the examination of the literature on the subject reveals that the advances in the understanding of competitiveness in Spain have been made in parallel to those experienced in the international market. Neither one or the other constitute an exhausted research field, even less so, as we shall see later, when we consider the new digital environment and the associated challenges for tourism destinations.

## 2.2. The sustainability of tourist destinations

The sustainability of tourism and tourist destinations is an issue that is widely debated by the scientific literature. Although the first studies date back to when ecological concern was in its infancy (Pizam, 1978), similar to the case of competitiveness, the debate on sustainability increased in intensity after the early 1990s (specifically after the Rio Summit in 1992) (Hall et al., 2015). This debate has advanced the conceptual and theoretical understanding of sustainability. However, some authors (e.g. Garrod & Fyall, 1998; Pridham, 1999; Vera, 2001; Robinson, 2004; Lansing & De Vries, 2007) consider that there is still a high level of rhetoric which has caused difficulties for its practical application in the industry and destinations.

The current state of the art can be established through the reviews of Lu and Nepal, (2009) and Quian et al. (2018). The former analyses 341 studies conducted in the period 1993-2007, revealing the existence of pending challenges related to the fact that the breadth, complexity and evolution of the "sustainability" concept continue to lead to its misunderstanding, its difficult practical management and its potential confusion with other related concepts such as resilience (Farrell & Twining-Ward, 2005). Even so, three fundamental elements are identified with respect to the study of sustainability. First, even in the first decade of the twenty-first century, sustainability was a mature research topic, in which there was a predominance of empirical papers over conceptual studies. Second, unlike the initial studies focused on the tourism niche, its use had been generalized through its application to mass tourism, considering the different interests of the stakeholders. Therefore, the basic principles of sustainability are established in four dimensions (McKercher, 2003): environmental (preservation of the ecological processes), social (guaranteeing the development of the future generations), cultural (protecting human heritage and biodiversity) and economic (with a strategic planning based on a holistic perspective) (Wight, 2002) Third, it finds that the literature has been meticulous with the measurement of the sustainability of destinations, with several proposals of indicators available (e.g. UNWTO, 2004; Huovila et al., 2019), and countless applications to different case studies.

Meanwhile, Quian et al. (2018) review 599 articles published between 2008 and 2017, finding a diversification in the object of study. The authors indicate that in addition to the traditional topics of sustainable development and the necessary political instruments to undertake it, in recent years there has been a concern for climate change (Becken, 2019) and the reduction of poverty. However, this review does not shed any light on how researchers propose to resolve the pending challenges.

In Spain, many advances have also been made in the academic field on this subject. The origin of the research efforts dates back to the first calls to action regarding the negative effects that an initial disproportionate

property-tourism development was having on many, destinations, particularly on the coast (Jurdao, 1990). In response to these warnings, especially of the recurrence of certain episodes of crisis at the end of the 1990s and beginning of the 2000s, there was an increase in the awareness, particularly academic, about the need to redirect the development models of many destinations towards more sustainable parameters. However, from a practical point of view (practitioners), and despite the efforts made by many managers in tourism planning, it has been found that in many cases, both in Spain and on an international scale, there is an incorrect use of the adjective "sustainable" as indicated by Cañizares (2013), with a predominance of the criteria of economic profitability as opposed to conservation.

In parallel to these studies, efforts have been developed with respect to the conceptualization and theoretical development of sustainable tourism and its measurement (Pulido & Sánchez, 2009; Vera, 2001; Vera & Ivars, 2003) and the case studies applied to destinations proliferated (e.g. Doods, 2007; Perles-Ribes et al., 2017b), together with those addressing the management of specific resources (e.g. Torregrosa-Martí, 2005; Torregrosa et al., 2010; and Sevilla-Jiménez & Torregrosa-Martí, 2016), and companies (e.g. Bagur et al. 2015), or comparisons between tourism development models (hotels and second home) (e.g. Perles-Ribes et al., 2018).

In short, an examination of the international and Spanish literature reveals that although sustainability has experienced significant conceptual and theoretical advances, there are still challenges, in its precision and in its theoretical development, which hinder the ultimate objective of achieving its systematic practical application. As we shall see, these scientific and practical challenges are aggravated by the new global and digital scenario which foretells important changes that will be faced by tourist destinations.

### 2.3. The new digital scenario and its incidence on competitiveness, sustainability and innovation

As we have seen, the concepts of competitiveness and sustainability applied to the tourism sector can be considered as complex and in continual evolution due to the dynamics of the industry. Therefore, at times like the present, with an accelerated intensity in the changes taking place in the tourism environment (Navío-Marco et al., 2018; Sigala, 2018), it becomes even more difficult to establish a traditional conceptualization of the terms in question.

Apart from the recent emergence of COVID19 which has radically affected the dynamics of the tourism activity throughout the world, of the factors in recent years that have directly or indirectly affected the competitiveness and sustainability of destinations, the most disruptive has been the digital development of the economy and society. This development can be observed from the low-cost revolution in the air transport market (Moreno-Izquierdo et al., 2015), to the emergence of new players such as Airbnb or Uber (Moreno-Izquierdo et al., 2016). In this period, we have experienced a boom in the internationalization of tourism companies, an increase in tourist movements and spending, the configuration of a digitalised supply and demand with new behavioral patterns or the development of new exotic destinations, among other factors. We should also assume that the new disruptive technologies such as big data, robots, blockchain or artificial intelligence have not been fully implemented in the tourism sector, but they will have a deep impact (Li et al., 2018; Ivanov et al., 2018; Melkić & Čavlek, 2020).

Logically, Spanish researchers have also been aware of this evolution, as the changes derived from digitalization particularly affect consolidated destinations, giving rise to conflicts between their traditional models and a new demand (Parra-López et al., 2012), new forms of communicating (Hernández-Méndez & Muñoz-Leiva, 2015), changes in supply generated by the sharing economy (Moreno-Izquierdo et al., 2018), or the occasional over-exploitation, overtourism and saturation problems of tourist destinations (McKinsey & Company, 2017; Milano, 2018; Peeters et al., 2018).

Therefore, we can observe significant differences between how the issue of innovation and competitiveness is debated today compared with the 1990s. While at the end of the twentieth century, different authors such as Bordas (1994) or Buhalis (1998) analyzed the reconversion of the sector based on innovation, the clustering of mature destinations or the management of tourism resources oriented towards competitiveness, in the current phase Li et al. (2018), Moreno-Izquierdo et al. (2018) or Cohen and Hopkins (2019), among others, consider highly advanced states of the current technological era. In addition, increasing attention is being paid to the differences in technological adaptation between large companies and tourism SMEs (Praničević & Mandić, 2020).

According to García et al. (2018), the first studies on innovation in technology, consider it an incipient concept based only on activities such as internet use, but it has evolved into a wider concept changing the way business is done. The incorporation of artificial intelligence, the internet of things or big data, for example, renews the need for an in-depth reflection of competitiveness and sustainability. Although currently there are very few studies that address the innovations emerging in the new scenario, we can talk about a competitive advantage of those destinations that best integrate the advances, which definitively affect both profitability and sustainability.

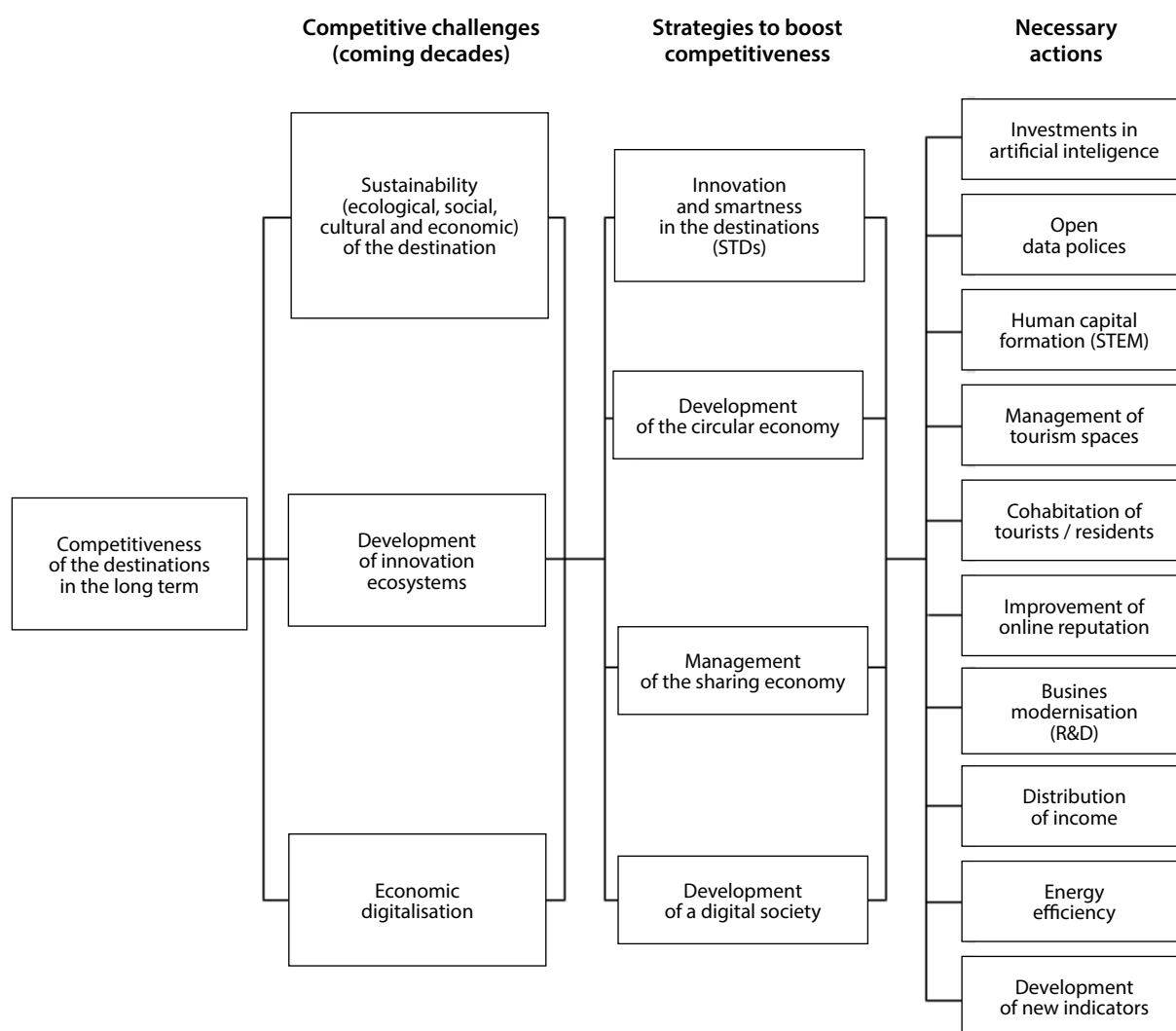
In the case of Spanish tourism, academics have focused their attention particularly on the reconversion toward smart destinations. This adaptation of the smart city concept to tourism could resolve future problems of the competitiveness, profitability and sustainability of the sector, favoring a differentiation and a rejuvenation of the supply in the light of the new competitors (Fernández-Alcantud et al., 2016, 2017; Ivars-Baidal et al., 2016; Perles-Ribes et al. 2017b; García et al., 2018). Perles-Ribes and Ivars-Baidal (2018) even coined the term *Smart sustainability* to emphasize the relevance of sustainability in the new smart paradigm.

This would culminate the efforts proposed by Ramón-Rodríguez and Pedreño-Muñoz (2009) that warn of the expiry of Spain's tourism leadership if it does not commit to the development of the sector within an innovative ecosystem that favors knowledge and innovation as inexhaustible resources. Furthermore, the calls for caution in studies such as Lillo-Bañuls and Ramón-Rodríguez (2005) identify human resources and knowledge as the keys of competitiveness.

But the digital era does not only involve issues related to definition but also to methodology, which requires new indicators that capture these new potential tools of competitiveness and sustainability given that the traditional indicators do not capture the complexity of the smart environment. García et al., (2018) suggest some tourism innovation indicators grouped into three categories -innovation research, ICT innovation and tourism innovation - and apply them to the Spanish case, showing that they outperform the classic indicators. However, this issue still requires a study with new techniques and new data regarding the tourism reality, in a change of paradigm in tourism research in which platforms such as Airbnb, Google Places, Twitter or Foursquare are able to provide more tourism information to researchers than the national and international organizations (Agryzkov et al., 2015; i Agustí, 2018; Martí et al., 2019).

Figure 1 seeks to summarize some of these pending challenges in terms of innovation, competitiveness and sustainability and the strategies to implement in order to resolve them. This exercise is necessary at a time when the policy makers and technological companies are implementing, with varying degrees of success, significant investment efforts to intensively equip the destinations with technology. However, the high cost of these investments requires a reflection on the true potential of this new model to resolve the challenges of competitiveness and sustainability faced by tourism on a global scale. These challenges, which are addressed in the following section, constitute a balance between the knowledge accumulated in the existing literature and the new scenario imposed by the advance in knowledge, globalization and intelligence. It is worth pointing out that these challenges correspond to the economic field; therefore a consideration of the perspective from other disciplines is also necessary, given that it is obvious that economists are not able to respond to the challenges of tourism in the digital era alone.

**Figure 1**  
*Framework of long-term competitiveness within the digital economy*



Source: Moreno et al. (2018).

In short, the new scenario taking shape due to the demographic, sectoral and technological changes is changing each and every area of tourism. This implies a new revolution for the sector and adds new challenges in the field of innovation and smart tourism for understanding the competitiveness and sustainability of destinations.

### 3. Competitiveness, sustainability and innovation in Spain in the light of the new tourism scenario: The challenges for research

In view of the above and the recent situation provoked by the COVID19 pandemic, in this section, four challenges are described which, by way of research propositions, indicate future lines of development in the research.



### 3.1. Overtourism as a reflection of an excess of competitiveness and its negative influence on sustainability

The first challenge or objective for future research could be established in the following terms:

*Proposition 1: Study of the sustainability of tourist destinations in the light of the challenge of tourist saturation. To analyze whether overtourism is related to an excess of competitiveness or an excess of the success of a destination based solely on objectives of volume and growth of tourists and/or income; particularly when this competitiveness does not improve the living conditions of the resident population; or when the diseconomies generated by mass tourism do not compensate the benefits generated by tourism.*

In Spain, the empirical testing of this hypothesis could clarify one of the greatest uncertainties surrounding the most consolidated destinations, particularly those of an urban nature, which are growing in an accelerated way. There are several reasons for this growth, such as the tendency to travel frequently for short periods of time (short breaks), driven by the low-cost airlines, the proliferation of MICE tourism, the growing interest in cultural tourism and heritage sites, an improvement in the mobility of elderly people, cruise tourism or the single currency in the case of Europe, among many other factors.

Within this context, some Spanish cities (Barcelona, Palma de Mallorca or Madrid) have already shown signs of *overtourism*, within the framework of a relevant political instrumentation (Huete & Mantecón, 2018). According to Goodwin (2017), a destination with problems of a saturation of its spaces is the antithesis of responsible tourism and defines it as a destination where hosts or guests feel that there is an excess of visitors, reducing the quality of life and of the trip to the point of an unacceptable deterioration.

Therefore, it is not just a question of the volume of tourists received by a destination. We can detect cities which, with not such a high number of visitors, perceive this discontent due to a high concentration in specific points, while other destinations with a higher tourist pressure are able to better manage the activity so as not to detriment the development of the urban life or the well-being of the visitors. Finally, there are also other social issues (hospitality of the community) or economic aspects (excessive dependency on tourism) that can explain the sensation of well-being or discomfort caused by the tourism activity, as described in Haralambopoulos and Pizam (1996) and Andereck et al., (2005).

In the light of this issue, and although great efforts have been made to attempt to measure the degree of saturation of destinations (McKinsey & Company, 2017; Peeters et. al., 2018) through different methods, including machine learning techniques (Perles-Ribes et al., 2020), the challenge for researchers continues to be the creation of indicators that are able to anticipate the loss of tourism competitiveness in the destinations and the resulting problems of overtourism. These indicators should help policy makers to make decisions and correct a possible negative trend in terms of image, sustainability and profitability. These decisions should not always be translated into a reduction of the volume of tourists. Other actions can be explored, such as changes in the management of tourism assets, the de-seasonalization of arrivals or the extension of the tourist sites through the improvements of urban transport networks, for example.

However, and according to some reports and studies (UNWTO, 2018; World Travel and Tourism Council [WTTC], 2017) the data available for researchers are generally of a national or regional nature rather than local which makes it difficult to determine when a destination is in or close to a situation of risk. Without these tools that allow us to take into consideration the general context of the destinations, making decisions or legislating is complicated as incorrect actions can lead to a loss in competitiveness from which it is difficult to recover due to an inability to adapt to the new forms of tourist market.

### 3.2. Understanding the influence of the sharing economy and its incidence on the competitiveness and sustainability of destinations

The second challenge that will face future research will be related to what has become known as the sharing economy, and can be considered in the following terms:

*Proposition 2: Analysis of the impact and development of the sharing economy in destinations. The sharing economy has emerged in tourism and has generated new relationships between the agents involved; a new form of sharing the urban space between residents and visitors has arisen and a change has occurred in accommodation patterns and in the tourism value chain. Its development is still in the emerging stage but could constitute a key factor in the saturation process or the excessive demand pressure on certain destinations and lead to the discontent of the local population and the rejection of the tourism phenomenon.*

The collaborative accommodation platforms can partly explain the tourist saturation process that some destinations are experiencing, increasing the number of visitors in response to a new supply and raising the price of non-holiday rents. However, they also represent a form of geographically diversifying the tourism activity, increasing supply without the need for new construction and even renovating the housing stock. And in a country such as Spain where the rate of home ownership is much higher than the European average and where there is a considerable amount of empty properties, the possibilities of their development are multiplied.

The growth experienced by the online accommodation marketing platforms is not exempt from the risks related to the enormous market power that their position and their access to user information confer them in the distribution chain. In a context within which tourist flows can experience a disproportionate growth due to a mass emergence of accommodation on the market, for certain destinations, particularly vulnerable ones such as some islands or highly unique ones, such as Venice, a greater knowledge of the accommodation market, its specificity, potential and how to influence it is even more necessary.

Therefore, the challenge for researchers in this topic resides in the need to study the sharing economy, not as an element that has positive or negative dichotomous effects on the destinations, but as a continuation of the technological revolution being experienced by the sector, whose transversal nature, together with the high volume of demand, renders it an ideal ground for testing, applying and developing the many technological advances. In this context, a whole range of questions arise with respect to the regulation, future or the consequences of the traditional sectors and tourism itself. Although, in one way or another, the sharing economy is set to continue taking root in the tourism market, particularly with the consolidation of the smart tourist destinations.

As a corollary of the above, some effects, such as its redistributive capacity, will only be confirmed when a more complete analysis of the data has been made, allowing researchers and the agents involved to determine the different behavioral patterns, the level of competition, the impact on prices, market power, employment, income distribution or the effect of island status and its dependency on air transport, which represents an additional challenge for research in this field.

### 3.3. Smart tourism as a panacea for the competitiveness and sustainability of the destinations

The third issue is related to the practical measures or solutions to implement so as to achieve the desired sustainability of the destinations. Here it is reasonable to ask:

*Proposition 3: Intelligence and knowledge applied to the tourism activity will be a key factor to respond to the competitive demands in the destinations of the twenty-first century.* Today, knowledge has more value as an inexhaustible resource to boost innovative solutions for issues such as overtourism or the cohabitation and management of spaces between residents and tourism activities.

As previously mentioned, the technological advances, the exploitation of data or the new management, distribution or price-fixing techniques derived from artificial intelligence will enable destinations and tourism companies to successfully embrace the future. Tourism destinations are flexible and dynamic entities with life cycles that evolve from rapid growth to a maturity which can be revitalized or driven to decline, as described in the study by Butler (2009). Precisely the destinations that cannot or do not know how to adapt to the changes occurring in the environment end up by beginning a competitive decline which, as well as being accompanied by a decrease in tourists, experience other problems such as lower profitability per visitor or the decline of economic areas.

The current technological wave has given rise to a situation in which without innovation and talent in the destinations, it is very hard to compete in a global context. However, technology should not be implemented indiscriminately and in a standardized way, given that the destinations should be understood as independent entities which are in different stages of their evolution. In fact, it is more important that the tourist companies themselves commit to the development of innovation in the destinations as they are able to generate and incorporate technology in accordance with their own needs. This promotion of business innovation will require the efforts of all the agents involved as well as a shift towards technological clusters and a commitment to open data. These aspects imply a greater transparency and more care taken with the product with a view to sustainability and profitability. This adaptation can be made gradually, without major capital investments or the commitment to oversized hardware, but should be made without delay so as to continue leading the tourism of the future.

Both tourism demand and supply will benefit from these and other developments of smart destinations, such as sensorization or the smart management of spaces. The intensive use of technology derived from the implementation of a smart destination will enable the continual measurement of aspects related to sustainability which, until now and in the absence of this technology, are difficult or impossible to measure or manage. It is precisely this lack of information management which has given rise to the current problems of overtourism and the doubts generated by the emergence of the sharing economy.

### 3.4. New indicators for a new scenario

The final challenge for the research is related to the need to refine the existing indicators of competitiveness and sustainability, to guarantee their continuity and adaptation to the new tourism scene. Specifically, the objectives would be formulated as follows:

*Proposition 4. Innovation indicators should be proposed when studying the competitive development of the tourist destinations, with the purpose of observing the trend they follow in relation to their adaptation to the digital economy.*

Innovation and the commitment to knowledge are essential for understanding the survival of the destinations in terms of their competitiveness, particularly with the emergence of new destinations and the problems of saturation recorded in many cities in Europe and Spain. With the appropriate indicators, recommendations may be made and action taken to ensure that Spain remains a leader in tourism competitiveness over the next few decades. It is essential to study the innovative ecosystem in order to address the apparent paradox that affects Spanish tourism: the most prosperous tourism regions have more and more poor inhabitants (Plaza, 2018).

Therefore, innovation should constitute a fundamental element when measuring the competitiveness of the destinations, and should be included with greater precision in the respective indicators. The indicators of innovation can be a highly interesting counterpoint to the competitiveness results obtained by the destinations, as they can explore the issue of the rejuvenation of the sector in greater depth. Furthermore, they would enable us to clarify whether the efforts in the development of smart development are correct and whether the Spanish tourism industry is prepared for the challenges of the future and the new demand. In this line of reasoning, the work of García et al. (2018) proposes a system of innovation indicators using factor analysis and applies

them to the Spanish case, proving the positive relationship existing between innovation, competitiveness and prosperity of destinations.

However, the question here is that although currently there are data available about innovation that can be incorporated into the study of tourism competitiveness, unfortunately and as previously mentioned, the information is only available for the national or regional level, not for the local level. This can be seen in studies such as the survey on the innovation of businesses conducted in 2016 by the Technological Research Panel or the 2017 European Innovation Scoreboard of the European Commission, which provide highly valuable information such as the commitment to R&D, although only on a regional scale. However, from the data obtained from tourist regions such as Catalonia, Andalusia, the Balearic Islands, the Canary Islands, the Region of Valencia or Madrid, we can draw certain conclusions, such as the fact that the regions most dependent on tourism in Spain (principally the Canary and Balearic Islands, but also Andalusia and the Region of Valencia) invest low amounts in innovation compared to the national and European level.

Nevertheless, when working with aggregated data of all the industries and regions, it is very difficult to separate the effect of the tourism sector of each region from the true deficit in innovation that exists in Spain which is also worsened by other regions such as Extremadura, Castilla-La-Mancha, Galicia or Asturias. Similarly, it is also difficult to separate the dragging effect of innovative cities, such as Barcelona or Madrid with respect to the tourism companies in their context and how this affects the overall competitiveness of the destinations. Therefore, it will be necessary to improve the quality of the statistical information in the field of innovation in the tourism sector in order to undertake the research challenges that will arise in this field.

## 4. Discussion

The exercise carried out provides relevant lessons for discussion that contrast with the existing literature on the subject. The first of these lessons is that it seems obvious that the new environment described leads to a strengthening of the inter-relationships existing between the concepts of competitiveness and sustainability and the transversal role of innovation. This constitutes a novelty with respect to the pre-existing situation and an adaptation of the theoretical models is recommended.

In fact, although the most relevant competitiveness models have always considered sustainability as a desirable objective of tourism development (Crouch & Ritchie, 1999; Hassan, 2000), the focus has been placed on its environmental dimension. Other dimensions of sustainability, such as the social and economic dimensions, have been exclusively relegated to the theoretical level. If the existing competitiveness and sustainability models wish to remain valid, it is necessary to include smartness issues, not only on a theoretical level but also in destination management (Perles & Ivars, 2018). This will enable us to confirm whether smart destinations incorporate effective improvements and to go beyond the study of competitiveness and sustainability.

A second element to for discussion arises from a reflection on whether the advances in tourism competitiveness from the traditional perspective are systematically positive, suggesting a review of the indicators of competitiveness. Although until now it was usual to consider that an increase in the competitiveness of destinations was good per se and that an competitive increase in the different rankings such as the TTCI index (World Economic Forum [WEF], 2019) was always recommendable, the new environment and the complexities arising from the inter-relations with sustainability question whether this relationship between competitiveness and sustainability is linear and always desirable.

The destinations with the highest tourism competitiveness, such as Spain, have experienced situations of over-tourism, even tourismphobia. This leads us to reconsider the existence of an optimum level of competitiveness, above which negative effects could arise for the destinations, such as the questioning of social sustainability (Peeters et al., 2018). Consequently, the functional relationship tends to be more complex, as possibly the

U-Shapes show, and it is essential to detect the optimum level above which disadvantages or diseconomies would outweigh the advantages of tourism development.

Closely related to the above, it seems clear that in the new environment characterized by these challenges, tourism researchers and policy-makers will have to give much greater importance to the social dimension of the sustainability of destinations than they have until now. In this context, the literature on the competitiveness and sustainability of destinations will have to analyze very carefully the results obtained by the scientific literature that has studied the attitude of the residents towards tourism and that, in this new environment, will have to play a much more relevant role than it has until now.

This is evident in the COVID-19 context. The pandemic has revealed that some tourism attributes of the more advanced countries and destinations, as in the case of Spain, "are given" in the competitiveness models, such as the quality of the healthcare system and their response capacity to current threats, and were not as solid as previously believed; or, at least, not sufficiently solid in order to overcome a situation such as this pandemic, which as we have seen, has brought the whole of the global tourism industry to its knees.

Furthermore, with respect to the measurement of the competitiveness and sustainability of destinations and the need mentioned in the previous section to improve the management of tourist flows or promote improvements in terms of de-seasonalization or the extension of tourist sites through the improvement of urban transport networks, this will be, perhaps, one of the aspects in which the application of technology through smart destinations can contribute to better measuring the processes and dynamics of the destinations, translating into their more harmonious and balanced development. In this respect, the definition of new and better variables in the competitiveness and sustainability models, which can be measured through the new tools available, will also be necessary in order for these models to remain valid in the new environment.

With regard to the new innovative environment in tourism, as well as enabling improvements in competitiveness, it also raises other challenges to be considered by the destinations. It is obvious that technology and the economy of platforms intensify the situation of dependency in the marketing of destinations, the traditional relationships with tour operators now being historical. In response to this distortion of the competition in the markets, public policies are implemented that reinforce the agreements regarding the use of the available data by the destinations and lead to an improvement in management.

Although a much more recent theory, the new environment also raises questions about smart destinations. The question here resides not so much in the theoretical aspects, but rather in the practice of implementing the concept. Therefore, we should ask whether the real practice of smart destinations is being truly oriented towards the improvement of the management of all of the processes involved in the sustainability of the destination (Boes et al., 2016; Gretzel et al. 2015; Perles & Ivars, 2018), or whether it simply constitutes a new marketing tool in the strategy of rejuvenating the destinations. It is also worth reflecting on the technology of smart destinations and whether it contributes to all of the aspects of sustainability equally or whether there are some aspects, agents or elements that benefit more (economy, environment) than others (social). A final issue is related to the excessive emphasis on technology and whether other maybe more relevant aspects of smartness are ignored, such as governance. In this context, the explanatory models of innovation will have to reconsider whether the indicators of innovation used continue to be appropriate in the current tourism context or whether it would be better to propose disruption indicators (Pedreño-Muñoz & Moreno-Izquierdo, 2020).

## 5. Conclusions

The competitiveness and sustainability of tourist destinations are research fields which, although well consolidated, due to their complexity continue to provide significant challenges for researchers, even more so in a digital environment which is gradually becoming smart. This article addresses the study of these challenges,

both in terms of the natural dynamics of the destinations, and, most of all, in terms of the accelerated transformation taking place due to the new changes that the sector has undergone in recent years, accelerated by the COVID-19 pandemic.

These new challenges have been studied for the Spanish case, based on four research propositions which seek to further the understanding of competitiveness and sustainability from the perspective of the smart tourist destination, particularly in Spain in an environment which characterizes the economy of the twenty-first century. Research efforts focused on: a) creating indicators in advance in order to allow the tourist destinations to determine the situation that they are in and whether they should act; b) analyzing the impact of the sharing economy on the different types of destination using new information sources; c) discovering whether tourism collaborates in the anticipated concentration of wealth fueled by technology and its corresponding social challenges; d) examining in depth the impact of artificial intelligence on the tourism sector, its productivity and its labor market, e) progressing in the reflection on the transformation of the traditional tourist destinations in smart tourist ecosystems and f) analyzing international good practices that help destinations to apply technology and knowledge to the previously-described competitiveness problems, would also be relevant in this field.

The limitations of this study include not being able to clearly establish the effects that COVID-19 may have on the new tourism environment. On a global level, the pandemic has paralyzed a good part of the tourism activity in practically every country. This is an unprecedented phenomenon in recent tourism and economic history. The vast majority of European countries, the natural origin of Spain's tourists, have recommended their populations not to travel to Spain or to some of its most relevant tourism destinations, so international tourism has practically disappeared.

Whether the consequences are temporary or could lead to structural effects on the competitiveness and sustainability of destinations will depend on how quickly the health crisis is resolved. It may also be the case, and one which would be desirable, that after the pandemic a slower, more sustainable and balanced tourism model will emerge. If the effects are temporary and the post-COVID tourism industry resumes its previous path, the challenges posed will continue to be relevant in the terms described in this article. Logically, overcoming these challenges will further the understanding of these important phenomena with implications not only for Spain but for tourist destinations as a whole, facilitating the scalability of the proposals.

In this case, one future line of research would be to empirically test the propositions made in this article for both Spain and other destinations. This would enable the plausibility of the propositions to be tested and the generalization of the Spanish case to other destinations in earlier stages of their life-cycle. The fact that Spain has a high level of development and maturity and is the world leader in tourism competitiveness makes it, again, a perfect laboratory to test its evolution and anticipate trends with the possible application in less consolidated destinations. Transferring the experience and knowledge acquired from Spain's tourism development could be considered as a transfer of technology and tourism know-how. In the medium term, we must be mindful of the evolution of the health situation and the consequences derived from it.

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