1    Tourist environment and online reputation as a generator of added value in the sharing

2    economy: The case of Airbnb in urban and sun and beach holiday destinations

3

4    Abstract -

5    Despite the importance of collaborative accommodation in practically every tourist

6    destination, to date, the majority of studies have focused on large cities and urban

7    destinations. This article distinguishes the factors that explain the added value of the

8    Airbnb properties, differentiating between urban and sun and beach holiday destinations.

9    To do this, nine destinations from one of the most important European tourism regions

10   have been studied using a hedonic pricing model that includes variables related to the

11   characteristics of the properties and others that define the online reputation of the hosts

12   and properties and the tourism environment. The results reveal that the sharing economy

13   fosters the emergence of private rentals, expanding the overall size of the accommodation

14   market with some clear differences between the two types of tourist destinations, which

15   emphasize the idea that the decisions made by stakeholders should be considered from a

16   local perspective.

17

18   Keywords: sharing economy; second home; hedonic prices; Airbnb; tourism destination

19

1    1. Introduction.

2         Today's tourist accommodation sector constitutes an excellent example for

3    illustrating how the sharing economy functions and the impact that it generates. Platforms

4    such as Airbnb, Couchsurfing or HomeAway enable a multitude of property owners to

5    rent second homes or even individual rooms to tourists, economically exploiting

6    investments which were not initially intended to have a productive purpose. This type of

7    activity and the platforms through which it is developed are frequently referred to in the

8    different studies analysing collaborative models, such as Gori (2015), Hamari et al.

9    (2015), Ranchordás (2015), Schor (2016) or Tussyadiah and Pesonen (2016) among

10   others. These studies mainly address the application of the sharing economy, the

11   problems relating to its regulation or its impact on the more traditional industry and other

12   issues of current interest.

13        On a more specific level, accommodation platforms such as Airbnb have been

14   described as an opportunity to increase the competitiveness of the tourism-dependent

15   regions (Botsman and Rogers, 2010), a new source of employment and entrepreneurship

16   (Sigala, 2018) or a manner to increase the profitability of tourism in a more sustainable

17   way (Moreno-Izquierdo et al., 2016). On the other hand, Airbnb raises questions about

18   how the accommodation supply is accepting new tools of distribution (Brauckmann,

19   2017; Gutiérrez et al., 2017), the need to diversify and personalize the tourism product

20   (Wang and Nicolau, 2016), or the digitalization of tourism supply (Oskam and Boskijk,

21   2016).

22

1    These and other studies that provide a wealth of details about the preferences of

2    tourists and the change in the industry trend related to Airbnb reveal two key elements:

3    First, results that are highly disparate depending on the city or destination studied; and

4    second a greater focus on urban destinations and large cities. Therefore, there is a gap in

5    the literature with respect to the sharing economy in more traditional, medium-sized

6    holiday and residential tourist destinations.

7    This article seeks to shed light on precisely these issues, analysing the impact of

8    implementing Airbnb in nine Spanish coastal tourist destinations in the Region of

9    Valencia (Spain), distinguishing three urban destinations which are less dependent on

10   tourism and six consolidated sun and beach tourist destinations. The use of the Region of

11   Valencia as a case study is justified as it is a region with characteristics that clearly

12   favour the development and consolidation of platforms such as Airbnb. First, it is one of

13   the largest tourist regions in Europe in terms of volume of tourists, with more than 25

14   million visitors per year.

15   Second, in these destinations there is a strong presence of second homes which

16   coexist with a highly developed hotel accommodation sector. According to the Spanish

17   Ministry of Public Works and Transport, 36% of all housing in the Region of Valencia

18   are second homes. This figure is lower for Spain as a whole where, on average, second

19   homes account for 24% of total housing. This fact clearly conditions the structure of the

20   accommodation supply in the Region of Valencia: even Benidorm, the leading

21   destination of the region which is clearly oriented towards hotel accommodation, reports

22   a high incidence of second home tourism with more than 2.6 million overnight stays in

23   non-hotel accommodation, 75% of which corresponds to international tourists.

1       Third, the renting of tourism accommodation in the Region of Valencia has

2   evolved over decades, in many cases "informally" and unbeknown to the authorities.

3   Platforms such as Airbnb help to expose these types of apartments, revealing the true

4   scale of the tourist accommodation supply in the destinations and making the

5   accommodation market more transparent.

6       And fourth, in the specific case of the Region of Valencia, and from the

7   perspective of the owners of the properties, Airbnb can be seen as an alternative way to

8   generate returns from property in which sizeable investments were made during the

9   construction boom in Spain during the 1990s and 2000s.

10      For these reasons, the emergence of Airbnb makes a region such as Valencia an

11  incomparable laboratory for studying how the sharing economy is integrated into

12  consolidated sun and beach tourism destinations and how the accommodation market has

13  transformed after decades of developing traditional tourism accommodation rental

14  activities and hotel accommodation structures.

15      With these objectives, this article will examine, first, the adaptation of the

16  accommodation supply in the destinations of the Region of Valencia, identifying

17  differentiated patterns between the towns studied. Subsequently, and through a hedonic

18  pricing model, it will examine those elements that add the greatest value in the

19  accommodation rental market in the Region of Valencia. To do this, the study will use a

20  series of variables related to the tourism environment, the socio-economic environment,

21  the characteristics of the property and those related to the online reputation.

22  Subsequently, the results obtained will be compared, differentiating between urban

23  destinations and sun and beach holiday destinations. The results will be useful to improve

1 the understanding of the factors that determine the quality, profitability and perceived

2 value of the accommodation in the destination (those leased both through Airbnb and

3 through other channels). All of this could lead to measures to improve the

4 competitiveness and sustainability of the tourism destinations analyzed, through a better

5 adjustment of the second home supply to a demand that has increasing access to

6 information and a wider choice.

7     The article is structured into the following sections. Section two reviews the

8 literature related to the sharing economy and its widespread diffusion in the tourism

9 accommodation activity, examining how it modifies the supply of accommodation in

10 cities and tourism destinations that digitalize a large part of the traditional supply. The

11 third section examines the presence of Airbnb in the accommodation sector in the Region

12 of Valencia and its impact in terms of the composition of tourism accommodation and

13 occupancy rates of the hotel sector. Section four explains the methodology and the data

14 used in the analysis. The fifth section presents and discusses the main results and

15 examines the limitations of the research. Finally, section six draws the principal

16 conclusions and suggests potential lines of future research.

17

18

19 2. Literature review.

20

21 2.1 Collaborative tourist accommodation.

22     The phenomenon of the sharing and digital economy is affecting the global

23 economy with an exponential growth that is transforming traditional economic sectors

1   (Botsman and Rogers, 2010; Koopman et al., 2014). This growth is expected to continue

2   over the next few years; therefore, it is essential to study the adjustment of the market to

3   this new phenomenon. In the accommodation sector, the emergence of the sharing

4   economy, with Airbnb as its principal exponent, is radically transforming the

5   accommodation supply of all the tourist destinations on a global scale.

6           The impact of Airbnb, HomeAway and similar companies on the supply of tourist

7   destinations seems evident, as pointed out in many studies. Guttentag (2015) highlights

8   the capacity of any property owner to become a tourist accommodation host. This implies

9   the possibility of a substantial increase in the tourism accommodation supply in the

10  destinations. As indicated by Fang and others (2016), the growth in the "collaborative"

11  supply has arisen due to the dual benefits that it generates: first, property owners generate

12  a return on a property investment; and second, the tourists find apartments or rooms at a

13  more competitive price than hotels.

14          It is true that, according to Jacobsen and Munar (2012), rather than an overall

15  change in the preferences of demand with respect to platforms such as Airbnb, an

16  adaptation on a generational level is taking place. However, this fact does not detract

17  from the phenomenon, as, according to all of the indicators, digital natives, who are best

18  at adapting to technological change, will be more dynamic over the next few decades

19  (Veiga et al., 2017). Therefore, some authors are already analysing the first effects of the

20  emergence of Airbnb on the supply of destinations, with some very interesting results.

21  For example, Tussyadiah and Zach (2015) and Zervas and others (2014) reflect a

22  difference between holiday tourists, who regard the supply of Airbnb in a positive light,

23  and business tourists who have a clear preference for hotels.

1    Furthermore, not all the effects derived from the widespread use of these

2    platforms are positive, given that the increase in the supply that they generate may

3    negatively affect the destinations due to a lack of sustainability and growing

4    massification. In Spain, one of the leading countries in terms of world tourism, some

5    authors, such as García and Servera (2003), Obrador (2017) or Vera-Rebollo and Ivars-

6    Baidal (2003) reflect their concern about massification and problems of sustainability that

7    have been observed for some years in different sun and beach holiday destinations.  But

8    this is not only a problem of the holiday destinations. Buckley (2012) observes that the

9    trend towards massification of the destinations converts the sustainability problem into a

10   global and widespread problem which the sharing economy could aggravate. In fact, it is

11   predicted that in the twenty-first century, collaborative accommodation could place

12   additional pressure on the destinations and authors such as Guttentag (2015) and Oskam

13   and Boskijk (2016) raise doubts about this excess pressure of the demand with respect to

14   the concentration of the Airbnb supply in areas that generally have a high volume of

15   tourists. Brauckmann (2017) describes *touristification* as a kind of *gentrification*, and

16   identifies Airbnb as being a possible trigger for the exodus of inhabitants of a city from

17   the most attractive neighborhoods from a tourism point of view.

18   It is worth reflecting on whether the development of the sharing economy can be

19   useful in all types of tourist destinations for improving the distribution of tourism demand

20   throughout the destination, so that the impact reaches a greater number of neighborhoods

21   of the cities and destinations. And, to a certain degree, this is already happening, as the

22   supply of Airbnb is distributed, not equally, but significantly over the whole destination

23   as indicated by Dudás and others (2017), Gutiérrez and others (2017) or Quattrone and

1     others (2016) with respect to cities such as Barcelona, Budapest or London. In this

2     respect, it is appropriate to study, as we have done in this article, which elements are

3     important when users select accommodation so that the apartments which are not located

4     close to the tourist attractions can compensate their attractiveness from a competitive

5     point of view. In this way, even the local public authorities can use this decentralized

6     supply in order to distribute tourism wealth in their cities, incentivizing the improvement

7     of those tourist apartments listed on Airbnb which are located in the areas or

8     neighborhoods which have been selected for redevelopment.

9

10    2.2. Digitalization of tourism supply and the challenge for the destinations.

11         Due to the newness of the phenomenon, in recent years, different authors such as

12    Belk (2014), Botsman and Rogers (2010), Hamari et al. (2015), Schor (2016) or Wang

13    and Zhang (2012) among others, have debated the theoretical basis of the sharing

14    economy and collaborative consumption, their limits, the preferences of consumers, P2P

15    rules or even the role that technological platforms should play. On an applied level, and

16    despite being theoretically an element that generates competitiveness in the destinations,

17    we can also find different controversies that hinder their adaptation, particularly due to

18    regulatory issues with respect to the traditional competitors (Malhotra and Van Alstyne,

19    2014), with respect to the protection of users (Koopman et al., 2014), and with respect to

20    the problem of depersonalization and the lack of personal assistance in case of a bad

21    experience of both consumers and hosts, who may not feel protected in abusive and in

22    bad faith situations (Korstanje, 2011).

23

1    However, the digitalization of traditional tourist accommodation, both hotels and

2    apartments, began before the collaborative tourism boom through online travel agencies

3    (OTAS), for example Booking. One aspect which has characterized the demand of the

4    tourism sector is, precisely, its capacity to adapt to the technological changes that have

5    occurred in recent decades, as pointed out by Bethapudi (2013) and Buhalis and Law

6    (2008). Millions of tourists trust in the Internet to organize their trips; they have access to

7    a greater amount of information and are able to communicate (directly or indirectly) with

8    other users who describe their experiences (Kim et al., 2004; Longhi, 2009). Of course,

9    this digital trust exists in all collaborative platforms (Gregory and Half, 2017), including

10   websites such as Couchsurfing (Liu, 2012) and Airbnb (Ert et al., 2016). This is why

11   tourism demand is now beginning to experience a change in trend in terms of tourism

12   accommodation due to aspects that are not merely based on price, such as those indicated

13   by Lamberton and Rose (2012) or Nguyen (2014).

14   According to Guttentag (2015), the growth of Airbnb can be explained by the

15   theory of innovation: first, it has filled a gap in which very few companies operated but in

16   the long term it could become the main benchmark for tourist accommodation.

17   According to Hamari and others (2015), this process of change affects both the supply

18   and demand which accept the technology for competitive reasons. Lamberton and Rose

19   (2012) point out that the collaborative websites have simply become facilitators of

20   agreements and suppliers of information that is essential to guarantee the confidence of

21   the users. Although Airbnb does not guarantee the quality of the apartments that it offers,

22   the tourists are increasingly dependent on the information that it provides, and its

23   evolution suggests that in the medium term very few apartments will not be listed on one

accommodation platform or another. This contrasts with the way in which the apartments

in traditional mass tourism destinations, such as the Region of Valencia, have usually

operated (without the control of the authorities and using decentralized marketing

structures such as apartment concierges or property agencies).

We should also refer to the criticism of the concentration of the market based on

websites such as Airbnb which lead authors such as McNamara (2015) or Schor (2016) to

question the evolution of the sharing economy. Because, although in theory the sharing

economy is based on a model in which property and goods or services are shared among

different users thanks to the Internet (Owyang, 2013), today the platforms that support

the sharing economy act as a clear oligopoly with high concentrations of supply and

demand. However, the solution to the possible problems will not be found through digital

restraint, but rather through new advances such as blockchain (Sun et al., 2016) which

will oblige the tourism sector and its companies to undergo a new competitive adaptation.

In short, as we have seen, the spread of the sharing economy is here to stay and it

is not neutral for any of the agents involved in the tourism development process. In the

specific case of accommodation and platforms such as Airbnb, clients (tourists), suppliers

(owners), destinations and decision makers have all been affected in one way or another,

both positively and negatively, by the emergence of these new tools. However, the

possibility of learning from the experience of these platforms to improve the

competitiveness of the rest of the accommodation supply and, in turn, the destinations,

continues to constitute a gap in the literature to date, with a clear prevalence of the study

1　of big cities and urban destinations, and it is within this context that research like this

2　study become meaningful.

3　　　In the light of these previous investigations, we consider that it is important to

4　raise some questions in order to continue the research initiated by other authors in the

5　field of the sharing economy. In this study, in particular, we will focus on sharing

6　accommodation in order to establish those attributes which are most highly valued by

7　tourists who use Airbnb. This is a key area, because this kind of contribution could

8　explain why the demand is increasing their preferences in sharing accommodation, and

9　how traditional sectors (like hotels) could react so as not to be seriously affected.

10　　　To do this we will follow the methodological approach developed by authors such

11　as Dogru and Pekin (2017), Gibbs and others (2017) or Wang and Nicolau (2016), who

12　included mainly variables related to the property attributes and the online reputation to

13　estimate their models. However, in addition to the hypothesis observed in previous

14　works, in this paper we will ask two more fundamental questions: how environmental

15　(tourist) attributes can determine the competitiveness of a property on Airbnb, and if the

16　willingness of Airbnb customers to pay differs depending on the destination type (urban

17　or sun-and-beach destination). These questions represent a further step in the

18　investigation of the sharing economy in the tourism field.

19　　　In order to conduct this research we have chosen nine cities in the Region of

20　Valencia, in Spain, a region well defined by its long Mediterranean coastline where we

21　can identify different destinations characterized by their population, their urban

22　configuration and their economic dependency on tourist development. In the following

1    section, the geographical framework of the study is described together with the main

2    consequences that the emergence of Airbnb has had on this environment.

3

4

5    3. Exploratory analysis of the accommodation sector of the Region of Valencia. Airbnb

6    and its influence on the configuration of the tourism supply

7

8    3.1. The heterogeneity of the tourism model in the Region of Valencia

9           Although Airbnb is a global phenomenon, its impact is clearly local and this will

10    also be the case in the regions traditionally oriented towards holiday tourism. While in

11    some cases Airbnb can constitute an unsustainable pressure for the sustainability of

12    tourism, in others it can help to de-seasonalize the supply or promote the innovation of

13    the hotel sector. In the specific case of the Region of Valencia, it can even be regarded as

14    a solution for exposing those apartments that operate irregularly in the tourism market or

15    for analysing the impact of the concentration of the market in the hands of a few agents

16    with a large amount of properties. In view of this situation, the policy makers should

17    study and work on a case by case basis in order to determine the best interests of the

18    region and of each destination.

19           The Region of Valencia, located on the eastern coast of Spain (Figure 1) is one of

20    the most important mass tourism regions of Europe, receiving more than 25 million

21    visitors in 2016. One reason for its success is the large area that it covers of the

22    Mediterranean coast, with 129 blue flags awarded by the Foundation for Environmental

23    Education, rendering it the leading region in Europe in this respect. However, in the

1     Region of Valencia different types of tourism have developed with specializations and

2     products that differ between destinations. Therefore, we can find cities such as Valencia

3     or Alicante, with a renowned urban tourism: mass holiday tourism destinations with a

4     high concentration of hotels, such as Benidorm (Ivars-Baidal et al., 2013) and second

5     home destinations such as Torrevieja or Denia (Perles-Ribes et al., 2011; Vera-Rebollo

6     and Ivars-Baidal, 2003).

7     Figure 1. Geographical location of the Region of Valencia.



8

9           This heterogeneous nature of the destinations of the Region of Valencia has

10    derived a different development of Airbnb, and therefore there are different challenges

11    and opportunities for the public and private sector. In general terms, two types of

12    destinations can be identified of the nine municipalities studied (Table 1). On the one

13    hand, the largest populations (the administrative capitals of the region, Alicante,

14    Castellón and Valencia), with urban tourism and a more diversified production structure

15    can be identified through two fundamental aspects.   First, there is a lower volume of

1    employees in sectors such as the hotel trade and, therefore there is a lower seasonality of

2    employment.  Second, the percentage of second homes with respect to total existing

3    homes is less than the average of the Region of Valencia (36%, as previously

4    mentioned). This indicates a non-tourist use of the accommodation in the cities, which

5    could intensify the risk of an increase in rent prices and gentrification if there was an

6    increase in the tourist demand caused by Airbnb.

7

8    Table 1.: Characteristics of the towns selected for the study.

| Town (Province) | Inhabitants (2016) | Per capita income | Hotel beds | Regulated tourism accommodation supply | Second homes with respect to total housing (%) |
|---|---|---|---|---|---|
| Alicante (Alicante) | 330,525 | €13,299 | 6,745 | 28,707 | 15.39% |
| Benidorm (Alicante) | 66,642 | €11,423 | 40,727 | 25,131 | 43.31% |
| Calpe (Alicante) | 19,591 | €10,483 | 3,345 | 11,806 | 47.31% |
| Castellón (Castellón) | 170,990 | €14,731 | 2,351 | 8,363 | 9.19% |
| Gandía (Valencia) | 74,818 | €11,521 | 5,518 | 19,911 | 36.47% |
| Peñíscola (Castellón) | 7,421 | €12,198 | 8,573 | 8,396 | 49.95 |
| Teulada-Moraira (Alicante) | 10,654 | €10,829 | 265 | 5,373 | 42.30% |
| Torrevieja (Alicante) | 84,213 | €9,416 | 1,652 | 62,585 | 51.16% |
| Valencia (Valencia) | 790,201 | €14,595 | 16,191 | 33,757 | 8.04% |

9    Source: Own elaboration based on the Statistical Portal of the Government of Valencia

1       On the other hand, and in contrast to the large cities, there are towns with a long

2  tourism tradition which are completely dependent on this activity and where there is a

3  large service sector mainly related to hotel and leisure activities. In these destinations, as

4  we can see in Table 1 (Benidorm, Calpe, Gandía, Peñíscola, Teulada-Moraira and

5  Torrevieja), we can observe strong increases in population during the holiday months

6  and a greater weight of second homes with respect to total housing, above the average for

7  the region.  This high volume of second homes is the result of the investments made in

8  property by European residents (mainly English, German and Scandinavian) and by

9  Spanish residents, which has conditioned the tourism model of the destinations for

10  decades and favours the current evolution of Airbnb in the accommodation sector.

11       However, there are no pure tourism models, but a differentiation of the

12  destinations throughout the whole of the Region of Valencia:  Benidorm in the hotel-

13  based holiday sector and Torrevieja in the second home framework are the most extreme

14  characteristic examples, as we can see in Figure 2.  But in between, there are many other

15  destinations that combine the two models to a greater or lesser extent and which make

16  the Region of Valencia one of the most competitive tourism regions in Spain and of the

17  whole Mediterranean coast.  It is worth mentioning that in all of the destinations, except

18  for Benidorm and Peñíscola, there are many more second homes than hotel beds.  This is

19  particularly the case of Torrevieja where there are six times more second homes than

20  hotel spaces.

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1    Figure 2: Employment in the hotel sector with respect to total employment -high / low

2    seasons- (tourism dependency) and the share of second homes in the destination.



Second Homes / Total    Low Season (January 2017)    High Season (July 2016)
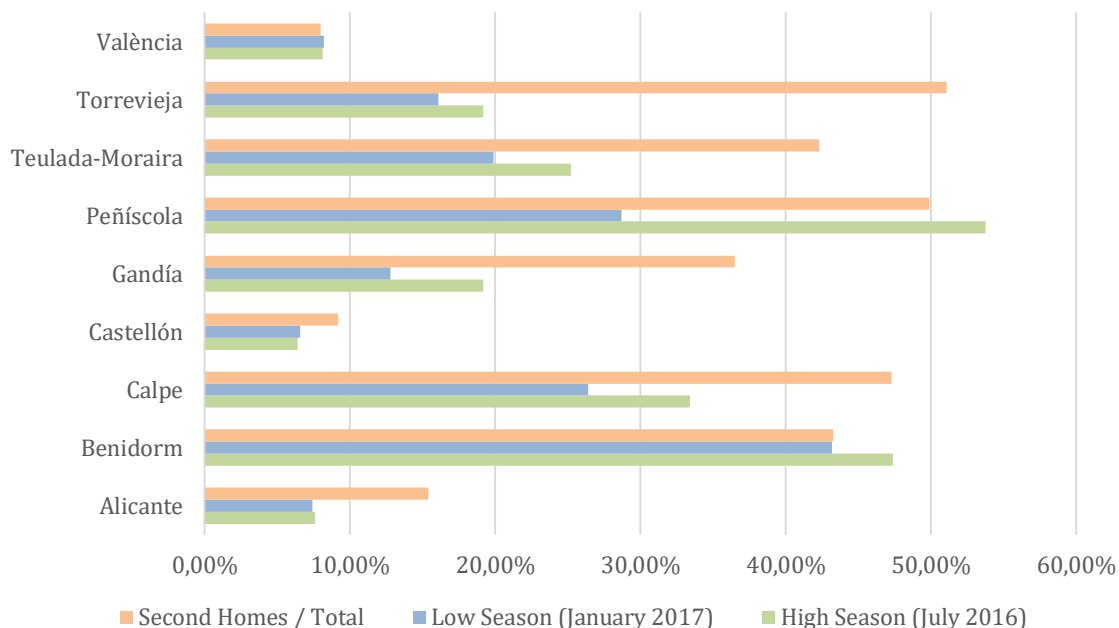
3

4    Source: Own elaboration based on data from the INE

5

6    3.2 The emergence of Airbnb in the Region of Valencia

7        Addressing the idea of tourism dependency of a destination based on the weight

8    of second homes can be highly useful. With the fall in value of housing after the property

9    boom and the economic crisis which began in 2008, tourist rental accommodation has

10    become the best way of gaining returns from property investments. The emergence of

11    Airbnb and similar platforms and the pressure from the government to expose apartments

12    that had been operating irregularly explains the remarkable growth in the tourist capacity

13    of apartments that is taking place throughout the whole region. Indeed, according to the

14    Statistical Portal of the Regional Government of Valencia, in two years (from 2015 to

15    2016) the tourist regulated supply increased by up to 45% in some cities due to

1   government pressure to uncover the irregular situation of thousands of apartments in the

2   region. In contrast, during the same period the increase of hotel places stagnated.

3       In parallel with this evolution of regulated apartments and hotels, and from an

4   initial analysis of the data of the Airbnb platform, we can observe that it has been well

5   received as a distribution channel of extra-hotel tourism accommodation in recent years,

6   particularly in the administrative capitals: from 2014 to June 2017, on average, the

7   number of beds listed by Airbnb in Alicante and Castellón has increased by almost 25%,

8   while in Valencia, the leading destination in the region in terms of the use of the

9   platform, almost 40,000 tourist beds are offered through the site, which represents four

10  times more than the hotel supply of the city. Of the rest of the municipalities studied, as

11  we shall see in Figure 3, we can highlight the evolution of Calpe, Teulada-Moraira and

12  particularly Torrevieja, sun and beach destinations with a clear residential bias (second

13  home) in which Airbnb has positioned itself as a clear benchmark for tourist rental

14  accommodation.

15

16

1    Figure 3: Evolution of tourist beds 2011-2017 (June): hotels, apartments and Airbnb.
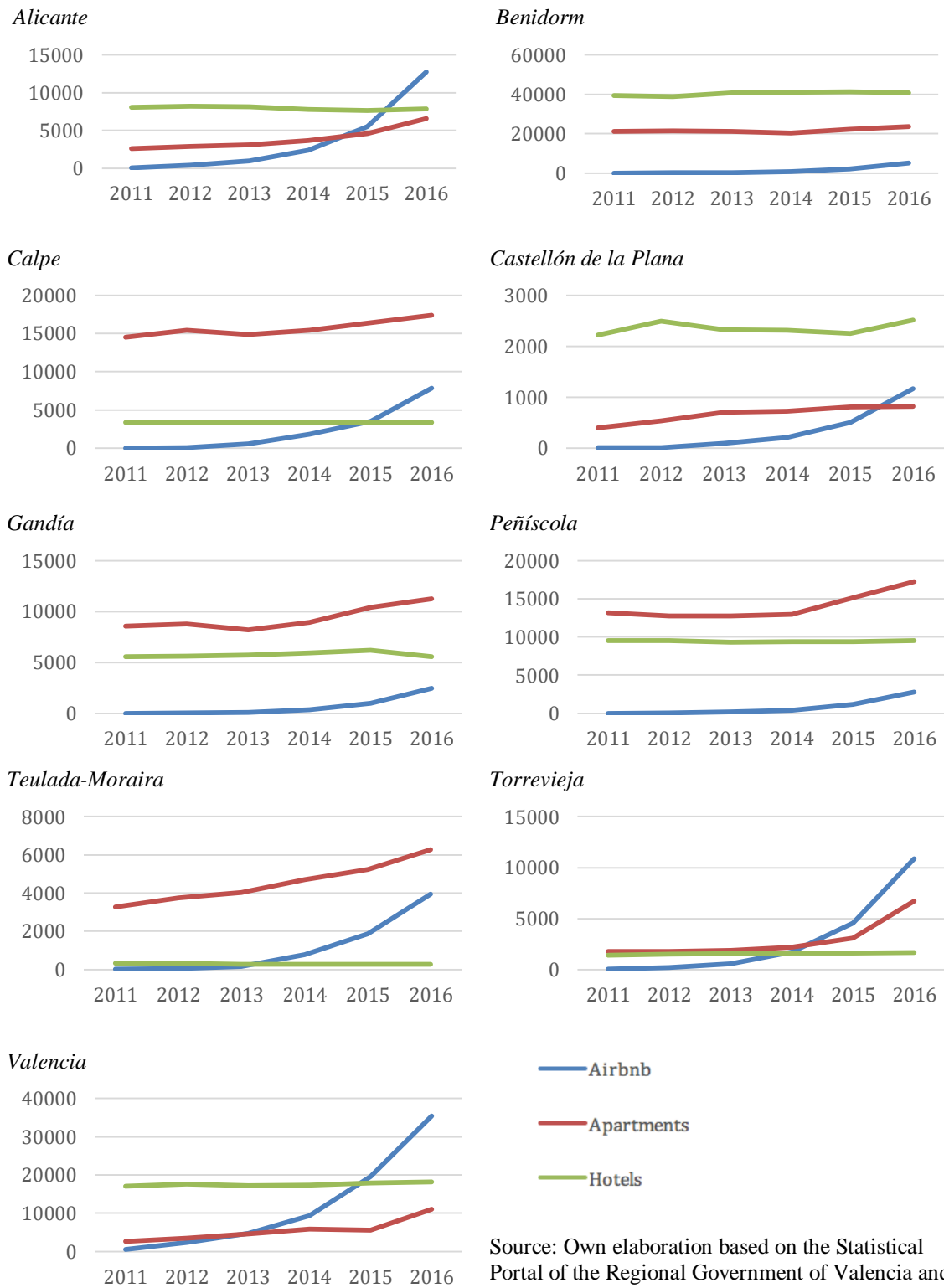


Source: Own elaboration based on the Statistical Portal of the Regional Government of Valencia and AirDNA.

2

1       Figure 4 shows the distribution of accommodation beds in the last available year

2 in more detail and we can appreciate two types of destinations. First, we can see the cities

3 which have better accepted the emergence of the collaborative platforms such as the

4 urban destinations (Alicante, Valencia) and Torrevieja, a consolidated holiday destination

5 with a high dependency on second homes and where there was no structured commercial

6 distribution before the arrival of Airbnb. In these destinations, the Airbnb offer is greater

7 than total hotel beds and regulated apartments, but a series of clarifications related to this

8 issue are required. Alicante and Valencia (and, to a lesser degree, Castellon) are cities

9 that combine sun-and-beach conditions with a highly-rated cultural, historic and service

10 supply, such as universities or public and private hospitals. This combination implies

11 relevant differences in the Airbnb composition with respect to those destinations

12 completely dependent on tourism. For example, the ratio of *room renting* in comparison

13 to *full apartment renting* in Airbnb in the largest cities is always higher than the 30%,

14 while in the other destinations it ranges from 5% to 18%. This data may not only be

15 related to the composition of the city or the type of host; it could imply different tourist

16 preferences in each destination such as the average length of stay, the reason for the trip,

17 or the convenience of having a native host nearby to show them the city.

18       On the other hand, the high Airbnb tourist capacity in Torrevieja is the product of

19 its over-sized second-home market, as previously mentioned. The Airbnb supply in this

20 kind of city is well defined by full apartment rental near the coast, which is characterized

21 by a high seasonality of demand. In the rest of the destinations, including Benidorm,

22 there is a large difference between regulated apartments and those offered by Airbnb,

23 with the former being more numerous. In these destinations, the supply on digital

1    platforms will increase although it is advancing at a slower pace given that a fairly

2    dynamic traditional structure of apartment letting already exists.

3

4    Figure 4: Distribution of accommodation supply in destinations in the Region of Valencia

5    (2016).
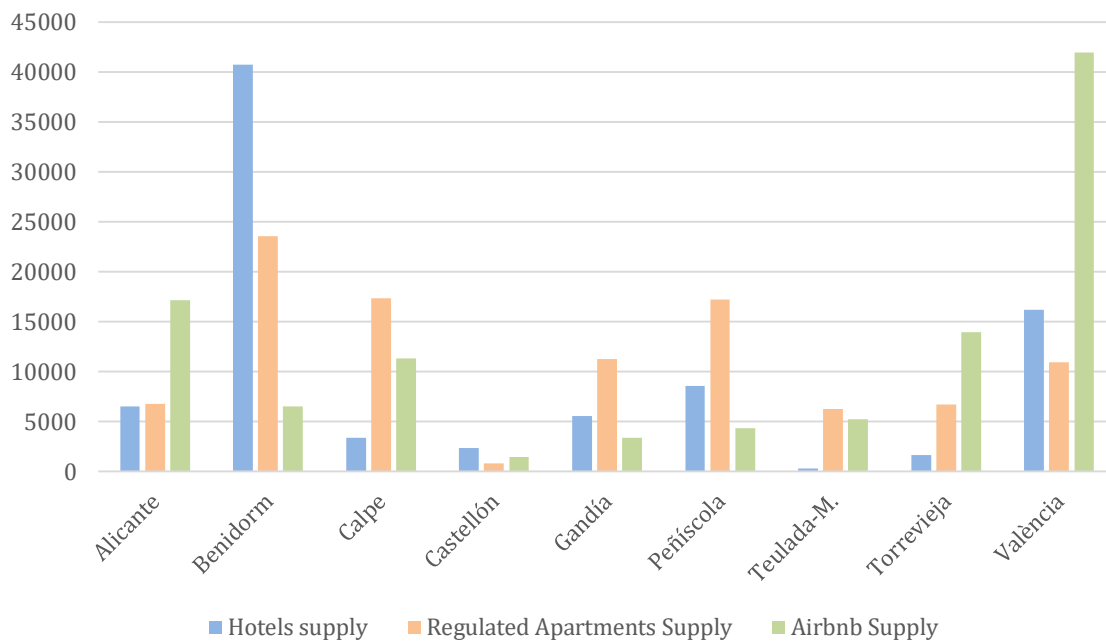


6

7    Source: Own elaboration based on the data of the Regional Government of Valencia and

8    AirDNA

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10

11          Between 2014 and 2016 alone, the regulated extra-hotel supply increased more

12    than in the whole period of 1997-2010 (35% and 20% respectively).  To this, we must

13    also add the new supply generated by Airbnb. This increase in supply, however, does not

14    seem to have affected the hotel occupancy rate in the Region of Valencia.  Within a

15    context of recovery after the economic crisis, we can see in Figure 5 that there has been a

1 recovery from 2011 in all of the destinations. Alicante (+27% occupancy) and Valencia

2 (+12%) are particularly noteworthy in this respect. It is worth noting that this adjustment

3 has not occurred within the context of a price war, but through an increase in the number

4 of tourists due to a deviation of flows from competing Mediterranean destinations (Perles

5 et al., 2016). In the case of apartments, a fairly stable behaviour in terms of occupancy

6 can be observed, with an average increase of 3% in the occupancy rate (INE, 2016). In

7 the period 2007-2016, the number of tourists visiting the Region of Valencia increased

8 from 21.3 million to 25 million, representing 17% more tourists and 9.8% overnight stays

9 (INE, 2017).

10

11　　　　By way of explanation, it should be said that the process currently occurring in

12 the Region of Valencia is, at the very least, profoundly interesting and can be summarised

13 in three points: first, a new tourism supply has emerged which uses Airbnb as a means of

14 distribution and which, in some cases, such as Valencia, we can classify as *mass* tourism

15 accommodation. Second, this new supply has not captured a sufficient number of tourists

16 so as to cause a decrease in the occupancy rates of hotels and regulated apartments.

17 Consequently, the digitalisation of the supply of apartments in second home destinations

18 provides a perspective which increasingly reflects the reality of total tourist

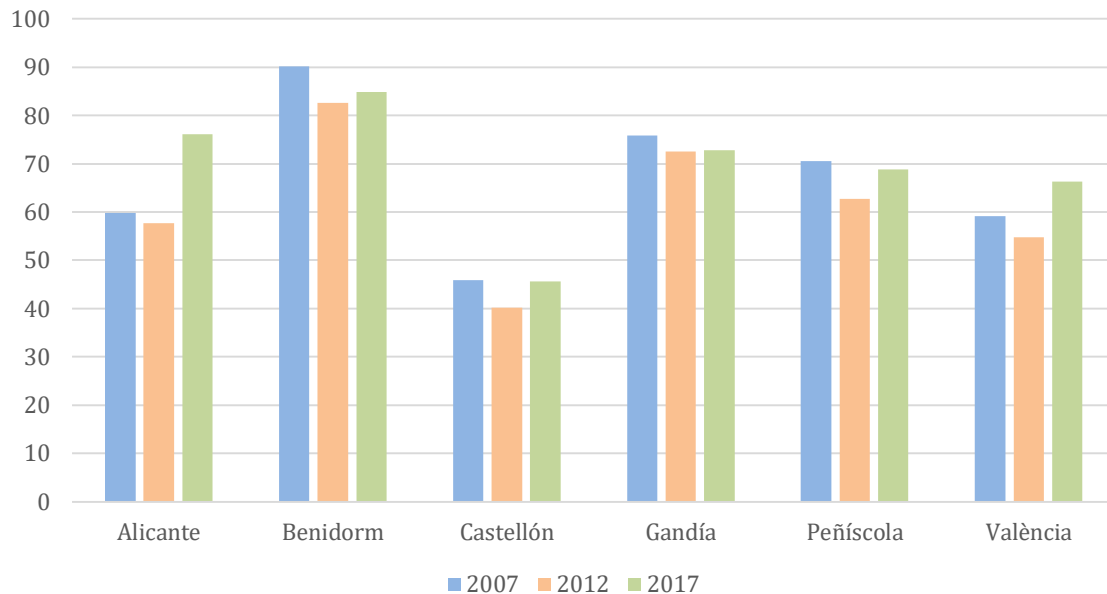19 accommodation supply.

20

21

22

23

1   Figure 5: Evolution of the hotel occupancy rate (2007, 2012 and 2017).



2

3   Source: Own elaboration based on data from the INE

4

5   3.3. Impact and transformations caused by Airbnb in the accommodation structure of the

6   Region of Valencia

7       In this article we have focused on a series of holiday destinations characterised by

8   a high investment in second homes. The impact of Airbnb on the traditional

9   accommodation industry has been studied with the main focus on the hotel sector.  This

10   can be seen in studies such as Neeser, Peitz and Stuhler (2015), who, in their study on

11   Nordic countries (Norway, Finland and Sweden) observe that for each increase of 10%

12   in the supply of Airbnb, hotels lose 0.11% of their monthly profits.  According to these

13   authors, in order to maintain the hotel occupancy rate, the hotels have had to lower their

14   prices. This effect can also be seen in the United States, where, according to Nadler

15   (2014) and based on the data of Priceonomics, the hotels have had to reduce their prices

1    to respond to the differences existing with the Airbnb apartments, which in some cities

2    were up to 49.5% more expensive.  Also, Goree (2016) observes a loss of

3    competitiveness in the hotel sector in Chicago, where the occupancy rate of hotels

4    decreases as the presence of Airbnb increases.

5          But it is not only a question of price: In her study on Airbnb in the Netherlands,

6    Nguyen (2014) finds another series of elements that cause a movement in the demand

7    from hotels to the apartments listed on the web platform.  According to this study, the

8    majority of those interviewed considered that the Airbnb accommodation satisfied all of

9    the needs that they had in the destinations and also included a series of additional features

10   mostly related to the identification of the local culture, which they did not find in hotels.

11   This is closely aligned with the observations of Sigala (2018) and the emergence of new

12   entrepreneurs based on Airbnb.

13         Today, in the Region of Valencia, the effects of Airbnb are not so severe as those

14   mentioned above for two basic reasons: first, because the volume of tourists continues to

15   increase, thanks to a positive overall economic climate and external factors such as the

16   conflicts in the principal competing destinations in northern Africa (Perles-Ribes et al.,

17   2016) which benefits the European destinations.  Second, they are destinations where the

18   investments in second homes for tourism purposes were made during the property boom

19   period and currently the investment in new hotel beds and also second homes have

20   stagnated, therefore the arrival of new tourists counterbalances the emergence of new

21   accommodation listed on Airbnb.

22         Airbnb exposes apartments that were being leased through traditional travel

23   agencies or even by word of mouth.  Evidently, this supply was already competing with

1    the hotels before, and its impact was already being recorded in the hotel occupancy rates

2    years before Airbnb appeared.

3        There is a third reason which, due to the type of destination, affects the Region of

4    Valencia to a lesser extent, but which should also be taken into account.  According to

5    Tussyadiah and Zach (2015), business tourists still prefer hotels as opposed to the

6    accommodation offered by Airbnb, which would mainly affect cities such as Valencia

7    and Alicante.  However, with respect to this point we should note that the efforts of

8    Airbnb are also aimed at capturing the business segment and, therefore, over the next few

9    years we are likely to observe a change in the tourism trends of this type of demand.

10

11        However, the fact that Airbnb has had a lower impact on the accommodation

12    structure in the Region of Valencia does not mean that transformations are not going to

13    occur. On the contrary: the first clear effect that has been seen is the listing of an

14    increasing number of tourist apartments on the Airbnb website which gives this

15    accommodation greater visibility and the possibility of being rented by tourists from all

16    over the world.  In this way, in the long run, hotels could be affected by Airbnb,

17    particularly if the number of new tourist arrivals stagnates and the non-hotel segment

18    continues to grow.  Therefore, the hotel sector in the sun and beach destinations should

19    take note of the new accommodation preferences of the demand (extra features of the

20    accommodation, connectivity, prices, personalised services, authenticity, rating of the

21    demand...).

22        In this line of reasoning, in the following section the methodology for estimating

23    hedonic prices will be used in order to test the impact that the different elements making

1  up the destination, beyond the mere attributes of the property, has on the leasing price of

2  the properties offered through Airbnb. In order to study the differences between the

3  destinations in greater depth, as well as general or grouped models for the destinations as

4  a whole, a differentiated analysis will be made for the large cities and the rest of the

5  medium-sized sun and beach destinations in the Region of Valencia.

6

7

8  4.- Methodology.

9

10  In order to determine the elements that add greatest value to the collaborative

11  accommodation in the holiday tourist destinations we will use a hedonic pricing analysis.

12  This methodology has a long tradition in the study of tourism economics and has been

13  used both in the hotel sector (Espinet et al., 2003; Rigall-i-Torrent et al., 2011), and in the

14  private accommodation sector or coastal or holiday destinations (Hamilton, 2007; Perles-

15  Ribes et al., 2018; Portolan, 2013), Bed and Breakfasts (Monty and Skidmore, 2003) and

16  any other form of non-hotel accommodation.

17  The hedonic pricing method is particularly useful for measuring the impact of

18  specific elements on the value of goods or services through a multiple regression

19  analysis. In this way, the function of the price (P) that picks up each of the characteristics

20  or elements can be expressed as:

21  $$P_i = \beta 0 + \beta_1 X_{1i} + \beta_2 X_{2i} + ... + \beta_j X_{ji} + e_i \,,$$

22  where Pi is the price of good i, and each of the ßXi the characteristics defined

23  with their corresponding regression coefficients. Finally, as is obvious, "e" represents the

1   margin of error.

2       In recent years, this methodology has also been used in the study of the price

3   composition of the properties offered on Airbnb in order to identify the most important

4   elements of value.  Different authors, such as Chen and others (2017), Dogru and Pekin

5   (2017), Gibbs and others (2017) or Wang and Nicolau (2016) have analyzed in a general

6   way how different variables related to the characteristics of rental properties (full

7   apartment or just a room for rent; the number of bathrooms; the maximum guests

8   allowed…), attributes of the accommodation such as the existence of parking, washing

9   machines, wireless Internet or dishwashers, as well as different social attributes, such as

10  the rating or the number of comments, can determine the price showed on Airbnb. Other

11  authors, such as Ert et al. (2016) and Teubner and others (2017), have focused on online

12  reputation, including interesting variables such as the kind of photos which the hosts

13  upload on the platform or the response time of the hosts.  In these studies we can observe

14  how the sharing of information by the users and the direct interaction between the users

15  of the origin and destination - with no intermediaries - constitute an added value that did

16  not exist in the tourism sector before its digitalisation.

17      In our study we have used different variables defined by the previously-

18  mentioned authors, taking the information from the AirDNA database in order to gather

19  the variables that explain the characteristics of the properties and their hosts, and some

20  indicators related to social reputation (table 2). This source, despite being recently

21  created, is increasingly being used by researchers such as Günter and Önder (2017) for

22  the study of Airbnb in Vienna, Wills (2016) for determining the number of apartments

1 offered in South Carolina, or Coyle and Yeung (2016) for the analysis of fourteen

2 European destinations, among other authors.

3      But as an innovation in this study, we have included other structural and

4 socioeconomic variables referring to the destination, such as the population, the tourism

5 seasonality, the income of the inhabitants or the number of second homes with respect to

6 total housing in each destination, which on the whole are not included in the analyses in

7 the literature. Some authors, such as Teubner and others (2017), include only two of

8 what they call "City Attributes", while Dogru and Pekin (2017) and Gibbs and others

9 (2017) only include the variable "distance to the city centre" in their models. For the

10 proposal made in this article, however, we will focus on measuring how the tourist and

11 socio-economic environment affects the competitiveness of the properties. Understanding

12 how tourists rate the specific tourist environment of each destination can be fundamental

13 for a phenomenon such as Airbnb, which, while having a global dimension, provides a

14 framework in which the decisions made in order to maximize the benefits of the sharing

15 economy have a local nature.

16      Therefore, as we can see in Table 2, we have selected 22 dependent variables,

17 distributed in four groups according to the attributions they are defining: *host*

18 *characteristics; tourism environment attributes; apartment characteristics; reputation*

19 *indicators*. Previous authors, such as Dogru and Pekin (2017) and Teubner and others

20 (2017), use similar groups in order to gain a better comprehension of the results obtained.

21      Moreover, given that we wish to study the profitability and competitiveness of the

22 elements that characterize the properties of Airbnb, our dependent variable will not be all

23 of the prices published on Airbnb, but only those which the demand ultimately selected.

1    In other words, we will only use the equilibrium price agreed by the buyer and the seller.

2    So, our dependent variable (Average Equilibrium Price: AEP) is constructed as the

3    average price of all the days when a property is rented. This is a new feature in this type

4    of study as the prices at which the properties are not rented are ruled out. In this way we

5    can connect the idea of *added value* to the *profitability* of the properties.

6           Therefore, of the 25,414 properties offered on Airbnb for the nine afore-

7    mentioned destinations in the Region of Valencia, all of those apartments that were not

8    rented for even a single day through Airbnb were ruled out as were those with too much

9    lost information. In total, for our study, 17,169 properties have been used corresponding

10   to the period between January and June 2017.

11

1    Table 2. Variable Definition and Summary Statistics

| Dimension | Variable | Definition | Mean | SD | Min | Max | Source |
|---|---|---|---|---|---|---|---|
| Dependent Var | *AEP* | Average price at which the properties on Airbnb have been rented | 83.01 | 66.47 | 10 | 1680.5 | AirDNA |
| Host Characteristics | *Prop* | Number of properties of each host on Airbnb | 12.59 | 26.80 | 1 | 161 | AirDNA |
| | *Superhost* | Host classified as a *superhost* by Airbnb | .078 | .269 | 0 | 1 | AirDNA |
| Tourism Environment | *Pop* | Population in each destination (x1000) | 448.30 | 335.79 | 7.421 | 790.20 | Spanish National Statistics Institute (INE) |
| | *GDPpc* | Disposable income in each destination | 13048 | 1833.1 | 9416 | 14731 | Spanish National Statistics Institute (INE) |
| | *VivSec* | Ratio of second homes with respect to total housing in each destination | 22.47 | 17.77 | 8.03 | 51.15 | Spanish Ministry of Development |
| | *Estac.Tur* | Seasonality of tourism, measured as the difference in employment between seasons. | 2.32 | 4.84 | -.252 | 25.04 | Generalitat Valenciana Statistics Portal |
| | *AptHot* | Ratio between the number of regulated apartments and hotels in a destination | 2.27 | 4.25 | .347 | 23.70 | Generalitat Valenciana Statistics Portal |
| Apartment Characteristics | *Entire* | The whole property is rented | .739 | .438 | 0 | 1 | AirDNA |
| | *Room* | A private room is rented | .255 | .436 | 0 | 1 | AirDNA |
| | *Bedrooms* | Number of full bedrooms that the apartment has | 1.895 | 1.096 | 0 | 10 | AirDNA |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | *Bathrooms* | Number of private bathrooms that the apartment has | 1.402 | .6458 | 0 | 8 | AirDNA |
| | *MinStay* | Minimum stay | 4.047 | 97.62 | 1 | 9000 | AirDNA |
| | *BussReady* | Apartment certified as being apt for business trips | .0485 | .2148 | 0 | 1 | AirDNA |
| | *Can.Strict* | Type of cancellation: strict | .411 | .492 | 0 | 1 | AirDNA |
| | *Can.Mod* | Type of cancellation: moderate | .244 | .429 | 0 | 1 | AirDNA |
| | *Can.Flex* | Type of cancellation: flexible | .295 | .456 | 0 | 1 | AirDNA |
| Reputation Indicators | *OcupRate* | Occupancy rate of the property (%) | 42.7 | 25.4 | 3.2 | 100 | AirDNA |
| | *NumRev* | Number of reviews made by the users | 10.28 | 21.92 | 0 | 370 | AirDNA |
| | *Rating* | Overall rating of the apartment | 4.49 | .587 | 1 | 5 | AirDNA |
| | *N.Photos* | Number of photos uploaded by the host | 18.82 | 12.46 | 1 | 245 | AirDNA |
| | *RespRate* | Response rate to the messages written by the tourists | 92.73 | 18.00 | 0 | 100 | AirDNA |
| | *RespTime* | The average time taken by a host to respond to the doubts sent by tourists | 258.10 | 402.83 | 0.01 | 1440 | AirDNA |

1

1      Therefore, the model to estimate will be as follows:

2      $AEP_i = \beta 0 + \beta_1 HostC_{1i} + \beta_2\ TourEnv_{2i} + \beta_3\ ApartC_{3i} + \beta_4\ Reputation_{4i} + e_i$ ,

3      where *HostC* represents a series of variables that define the characteristics of the host,

4      *TourEnv* includes the variables that define the type of tourist destination, such as the

5      seasonality or the volume of second homes,  *ApartC* refers to the variables that define the

6      characteristics of the property, such as its size, whether the whole property is rented or

7      individual rooms or whether it is suitable for the business segment, and finally *Reputation*

8      includes the variables related to the online reputation of an apartment and its host, such as

9      the number of comments, the overall rating of previous tourists or the number of photos

10     available on Airbnb.

11

12     5. Data and results.

13     *5.1. Results of the hedonic pricing method for all of the destinations*

14     Table 3 represents a hedonic pricing model estimated for the whole of the sample

15     in which the dependent variable is the average rent price of the properties listed on

16     Airbnb and the explanatory variables are all of those shown in the previous table.  The

17     difference between the three models resides in the way in which the standard errors of the

18     coefficients are estimated.  Model 1estimates the classic OLS errors.  In model 2, the

19     HC1 heteroskedasticity-consistent errors of MacKinnon and White (1985) are estimated.

20     Finally, taking into account that the different properties analysed are located in nine

21     different tourist destinations, in model 3 the estimate is made based on the clustered

22     errors, using as a cluster variable the destination to which the property being studied

23     belongs.  The "cluster-robust" variance estimator divides the sample into a number of

1    subsets or clusters according to the value taken by the selected variable. Contrary to the

2    classical assumption that the error term is independently and identically distributed, this

3    estimator allows for the error variance to differ by cluster and also allows for a degree of

4    dependence of the error within each cluster.

5

6    Table 3: Hedonic pricing model for all of the destinations in the Region of Valencia

| | Model 1: Classical standard errors | Model 2: Heterokedasticity HC1 consistent errors | Model 3: Clustered standard errors by proportion of second homes |
|---|---|---|---|
| Prop | .354*** (0.022) | 0.354*** (0.032) | 0.354*** (0.072) |
| Superhost | -.144 (1.286) | -0.144 (1.035) | -0.144 (0.863) |
| Pop | -.0171*** (0.0027) | -0.0171*** (0.0027) | -0.0171 (0.0125) |
| GDPpc | .018*** (0.001) | 0.018*** (0.001) | 0.018** (0.007) |
| VivSec | 1.497*** (0.185) | 1.497*** (0.177) | 1.497* (0.795) |
| Estac.Tur | -0.914*** (0.221) | -0.9145*** (0.223) | -0.914 (0.890) |
| AptHot | 1.322*** (0.149) | 1.322*** (0.282) | 1.322*** (0.276) |
| Entire | 53.66*** (6.232) | 53.66*** (4.993) | 53.66*** (4.028) |
| Room | 15.96*** (6.211) | 15.96*** (4.958) | 15.96*** (3.855) |
| Bedrooms | 12.64*** (0.481) | 12.64*** (0.659) | 12.64*** (0.8133) |
| Bathrooms | 27.46*** (0.795) | 27.46*** (1.843) | 27.46*** (1.789) |
| MinStay | -0.0021 (0.003) | -0.002*** (0.000) | -0.0021*** (0.000) |
| BussReady | 1.495 (1.673) | 1.495 (1.578) | 1.495 (1.935) |
| Can.Strict | 28.15*** (4.294) | 28.15*** (5.252) | 28.15*** (5.697) |
| Can.Mod | 23.78*** (4.395) | 23.78*** (5.299) | 23.78*** (6.179) |
| Can.Flex | 23.88*** (4.402) | 23.88*** (5.314) | 23.88*** (5.872) |
| OcupRate | -30.79*** (1.744) | -30.79*** (1.871) | -30.79*** (3.623) |
| NumRev | -0.052*** (0.016) | -0.052*** (0.012) | -0.052 (0.033) |
| Rating | 5.181*** (0.687) | 5.181*** (0.705) | 5.181*** (0.852) |
| N.Photos | 0.462*** (0.032) | 0.462*** (0.040) | 0.462*** (0.042) |
| RespRate | -0.004 (0.036) | -0.004 (0.041) | -0.004 (0.035) |
| RespTime | 0.003** (0.001) | 0.003** (0.001) | 0.003 (0.002) |
| Const | -345.9** (26.19) | -345.9*** (26.31) | -345.9** (106.4) |
| n | 11257 | 11257 | 11257 |
| $R^2$ | 0.5068 | 0.5068 | 0.5068 |

7    Standard errors in parentheses

8    * indicates significance at the 10 percent level; ** indicates significance at the 5 percent

9    level: *** indicates significance at the 1 percent level

10

1      We can observe that the model is robust and independent of the estimated error

2    specification as almost all of the variables are significant in the three models estimated.

3    On an overall level, the results indicate that the characteristics of the property, its online

4    presentation and its reputation on the platform are elements that determine its

5    attractiveness and therefore the price that is paid for it.

6      First, in relation to the characteristics of the apartments and in accordance with

7    the rest of the existing literature on the subject, the size and quality of the property

8    (captured through the variables of Room, Bedrooms and Bathrooms) reveal a significant

9    positive coefficient, and are therefore associated with the attainment of a higher rent price

10    for the apartment, as also found by Chen and others (2017), Ert et al. (2016) or Wang and

11    Nicolau (2017) in their respective studies. There is also a positive relationship with

12    renting a whole apartment for which a higher price can be charged, as opposed to renting

13    an individual or shared room.  This result is also found by Dogru and Pekin (2017), as

14    well as the above-mentioned articles. In this group of variables, the negative relationship

15    between *price* and *occupancy rate* of the property listed on Airbnb is interesting as it

16    reveals that the more expensive properties (multifamily, with several bedrooms in highly

17    attractive tourist areas) are those that are rented the least, although they earn higher

18    returns.  This result could be highly related to the seasonality of the destinations as these

19    properties are reserved for whole families or groups of several people who are limited to

20    specific dates for taking their holidays.

21      With respect to the elements of online reputation studied, the opinion of other

22    users (overall rating) and the presentation of the property (number of photos) are

23    significant and positive as also observed by Ert et al. (2016) and Teubner et al. (2017).

1  However, a negative impact can be observed of the number of comments made by the

2  demand (NumRev), which would reveal the overall tendency of consumers to mostly

3  comment on the negative aspects rather than the positive elements of their experiences, in

4  this case, of the property.  This result was also found by Wang and Nicolau (2017).

5      A curious case with respect to cancellation policies, also with a significant

6  coefficient, is that properties with a strict cancellation policy have a higher final price

7  than those with a flexible cancellation policy.  This result is also observed by Chen and

8  others (2016), where a strict cancellation policy is associated to higher prices than

9  flexible policies, probably by way of compensation.  In our case we have taken the extra

10  strict cancellation policy as the control variable which penalises users whereas the other

11  types of less strict cancellation policies do not (strict, moderate and flexible).  To a

12  certain degree this strategy is also followed by hotels and platforms such as Booking

13  whereby users pay an extra amount for the possibility of cancellation, although in the

14  case of Airbnb, as there are more cancellation options, the results are different to the

15  hotel strategy.

16      Second, and as another new feature of this study, we have incorporated the

17  number of properties listed by each host. The relationship between this factor and the

18  dependent variable reveals that those hosts with several properties usually charge higher

19  rates. This fact would be related to the purchasing power of the hosts, which translates

20  into the ownership of more and better properties resulting from private wealth investment

21  decisions.  Furthermore, those who list a higher number of properties are able to

22  strategically exercise their market power, which could mean a problem of

1  competitiveness and unsustainability of the destination, affecting rental price for both

2  tourism and residents.

3      Going beyond the attributes of the properties and/or hosts, with respect to the

4  tourist environment where they are located, the negative relationship between the size of

5  the population and the price is noteworthy. This could be due to the higher average

6  quality of the properties listed on Airbnb in smaller destinations, where the rental of

7  rooms or non-family properties is lower in comparison with family-sized properties. This

8  result is the opposite of that obtained by Teubner et al. (2017), which could indicate the

9  special idiosyncrasy of the holiday tourist destinations. Future studies could isolate other

10 types of supply in order to study the price difference between sun and beach destinations

11 and urban destinations as opposed to a homogeneous supply.

12     On the other hand, the model also reveals a positive and significant relationship

13 between the specialisation of the destinations in the second home segment (measured

14 with AptHot and Vivsec) and the final price paid by the tourists for Airbnb

15 accommodation.  Therefore, it is assumed that, on average, the rates in the sun and beach

16 holiday destinations are higher than those in the urban destinations.  This situation could

17 be due to the fact that in the holiday destinations there is a more homogeneous supply of

18 rental accommodation, while in the urban destinations there is a high number of

19 individual and shared rooms on offer at a lower rate than entire properties.  However, in

20 this study we should also include seasonality, which differentiates the two types of

21 tourism and which has a negative effect for the sample studied, giving rise to a decrease

22 in prices particularly in the sun and beach destinations.  The negative effect of seasonality

1   is, undoubtedly, one of the main drawbacks of the tourism development model of the

2   Spanish Mediterranean coast.

3         With respect to the variables with non-significant coefficients, it should be noted

4   that the *superhost* or *business accommodation* attributes of Airbnb are made up of a

5   series of characteristics which the hosts should fulfil, such as the percentage of responses,

6   a certain overall rating or the interaction with the users.  This makes it difficult for them

7   to be significant although some of the components do reach significance. The results also

8   show that the response rate of the hosts is not significant either, probably because many

9   of the messages do not need responses (being simply information), and therefore do not

10   affect the opinion of the consumers in the same way as the overall rating or response

11   time.  The variables which are significant or do not depend on the type of errors

12   estimated are the population of the destination, which is not significant in the estimate

13   with cluster errors for the "population" variable and the number of reviews or response

14   time.  In the first model the minimum stay required by each host is not significant either,

15   but significance is reached when robust errors are used.

16

17   5.2. Results of the hedonic pricing model of urban and holiday destinations

18         In order to conduct a deeper analysis, Table 4 represents the model of the

19   estimated hedonic prices, but distinguishing between urban destinations (models 4 and 5)

20   and traditional holiday destinations (models 6 and 7).  The objective is to observe the

21   possible differences between the two types of destinations and in accordance with the

22   different weight that tourism has in the rental of properties. Specifically, the sample is

23   divided into two segments; first, the three administrative capitals; second, the six  holiday

1 destinations which have a higher tourism dependency due to the seasonality of

2 employment and the weight of second homes with respect to total housing. The small

3 number of destinations in each group means that a cluster error analysis cannot be carried

4 out; therefore Table 2 only shows the coefficients with their OLS classical errors and the

5 heterokedasticity HC1 consistent errors.

6 Table 4: Hedonic pricing model differentiating between types of destination

|  | Main cities (urban destinations: Valencia, Alicante and Castellón) | | Mass tourism sun and beach destinations | |
|---|---|---|---|---|
|  | Model 4: Classical standard errors | Model 5: Heterokedasticity HC1 consistent errors | Model 6: Classical standard errors | Model 7: Heterokedasticity HC1 consistent errors |
| Prop | .4282 (.0255)*** | .4282 (.0386)*** | .1128 (.0461)** | .1128 (.0583)* |
| Superhost | .3170 (1.354) | .3170 (1.124) | -2.654 (3.581) | -2.654 (2.771) |
| Pop | .0027 (.0040) | .027 (.0039) | .2112 (.0748)*** | .2112 (.0883)** |
| GDPpc | .0008 (.0015) | .0008 (.0014) | .0348 (.0035)*** | .0348 (.0036)*** |
| VivSec | 0 (omitted) | 0 (omitted) | 2,971 (.5298)*** | 2.971 (.5455)*** |
| Estac.Tur | 0 (omitted) | 0 (omitted) | -1.854 (.3018)*** | -1,854 (.2970)*** |
| AptHot | 0 (omitted) | 0 (omitted) | 2.057 (.3025)*** | 2.057 (.4573)*** |
| Entire | 55.40 (6.236)*** | 55.40 (5.042)*** | 21.66 (29.83) | 21.66 (4.164)*** |
| Room | 16.31 (6.204)*** | 16.31 (5.008)*** | -3.216 (29.95) | -3.216 (4.281) |
| Bedrooms | 11.47 (.5329)*** | 11.47 (.7847)*** | 17.30 (1,103)*** | 17.30 (1.467)*** |
| Bathrooms | 26.08 (.8923)*** | 26.08 (2.255)*** | 28.44 (1,743)*** | 28.44 (3.583)*** |
| MinStay | -.0019 (.0030) | -.0019 (.0003) | -.3025 (.1973) | -.3025 (.2032) |
| BussReady | 2.372 (1.733) | 2.372 (1.666) | -1.915 (5.224) | -1.915 (4.733) |
| Can.Strict | 12.19 (16.09) | 12.19 (6.064)** | 14.85 (5.466)*** | 14.85 (6.638)** |
| Can.Mod | 8.309 (16.10) | 8.309 (6.050) | 11.01 (5.752)* | 11.01 (6.768) |
| Can.Flex | 8.197 (16.10) | 8.197 (6.078) | 12.18 (5.838)* | 12.18 (6.888)* |
| OcupRate | -.3333 (.0193)*** | -.3333 (.0189)*** | -.2189 (.0398)*** | -21.89 (.0468)*** |
| NumRev | -.0458 (.0168)*** | -.0458 (.0121)*** | -.5751 (.1095)*** | -.5751 (.0969)*** |
| Rating | 5.949 (.8096)*** | 5.949 (.8395)*** | 3,503 (1,275)*** | 3.503 (1.291)*** |
| N.Photos | .4814 (.0364)*** | .4814 (.0488) | .3675 (.0655)*** | .3675 (.0641)*** |
| RespRate | .0345 (.0412) | .0345 (.0499) | -.0875 (.0751) | -.0875 (.0702) |
| RespTime | .0030 (.0017)* | .0030 (.0018)* | .0016 (.0033) | .0016 (.0032) |
| Const | -76.41 (26.56)*** | -76.41 (22.28)*** | -542.2 (72.33)*** | -542.2 (72.70)*** |
| n | 8674 | 8674 | 2618 | 2618 |
| R² | 0.5021 | 0.5021 | 0.5190 | 0.5190 |

7

1    Standard errors in parentheses

2    * indicates significance at the 10 percent level, ** indicates significance at the 5 percent

3    level, *** indicates significance at the 1 percent level

4

5        In the model referring to urban destinations, the second home variables with

6    respect to total housing, tourism seasonality and the number of apartments with respect to

7    hotels have a perfect multicollinearity problem with respect to the population of the town,

8    so they have been omitted from the analysis.

9        The results reveal that, once again, the size and quality of the property (captured

10   through the room, bedrooms and bathrooms variables) are relevant for obtaining a better

11   rent price of the property.  However, this is even more the case in urban destinations

12   (large cities), where the variable (Room) is significant and positive, than in the traditional

13   holiday tourism destinations, where this variable is not significant and even indicates a

14   negative coefficient.  This could be explained by the higher supply in urban destinations

15   such as Valencia and the greater elasticity derived from this. On the other hand, renting

16   an entire property instead of an individual room gives rise to a higher price in both types

17   of destination.  However, in holiday destinations there are hardly any individual rooms

18   for rent.  Almost all of the rentals are entire properties.  This is why there are differences

19   between the results: the urban destinations reveal a large difference between renting an

20   entire property or an individual room.

21       The overall rating (online reputation) and the number of photos (presentation of

22   the properties) continue to be relevant. However, the pre-post-sale service (RespTime)

23   reveals different coefficients in the two types of destination, being significant for the

1    larger cities of the Region of Valencia but not for the mass tourism sun and beach

2    destinations. The negative and significant coefficient associated to the number of reviews

3    variable, persists in both types of destination, which once again suggests that the users are

4    usually influenced more by negative criticism than positive comments. Finally, the

5    existence of cancellation policies indicates that in holiday destinations users are less

6    reticent to stricter cancellation policies, probably due to the fact that tourists who choose

7    their holiday apartment are used to making their reservations a much longer time in

8    advance than visitors to the cities.  The cancellation policies in holiday destinations have

9    traditionally been stricter.

10          With respect to the hosts and the number of properties listed by each host, again

11   the results confirm that those who own several properties usually rent them at higher

12   rates, irrespective of the type of destination analysed, although this effect is greater in the

13   cities.  From this we can make an observation regarding the configuration of the

14   destinations analysed: an increased investment in properties with the objective of renting

15   them through Airbnb in cities such as Valencia, in turn, allows a better investment

16   strategy for regenerating historical neighbourhoods.  This is contrary to the second home

17   market which has traditionally rented to tourists in mature holiday destinations, where

18   there is little possibility to continue constructing or reforming - at least on the beach front

19   or in highly attractive areas for tourists, as these areas have been completely built up and

20   sold.

21          With respect to the environment of the properties, the selection of the destinations

22   used in the study, namely three urban destinations and six sun and beach destinations,

23   hinders the analysis, particularly due to the multicollinearity between some of the

1   variables and the population of the destination in the case of the former, or the lack of

2   significance of the variables in the case of the urban destinations.  In the case of the sun

3   and beach destinations, we can observe a remarkable difference related to the effect of

4   the population with respect to the previous model, which in this case is positive.  In

5   accordance with the previous explanation, this positive effect could be derived from a

6   greater homogeneity of the supply in the six sun and beach destinations: family-sized

7   properties, with a minimum percentage of whole or shared room rentals.  In this case, by

8   homogenising supply, we can observe this positive effect of the size of the population, in

9   the same way as per capita income, but future studies should analyse this in greater depth

10   in order to confirm this.

11          Also, the positive relationship of the weight of second homes with respect to total

12   housing in the towns, and the positive effect of the weight of apartments with respect to

13   hotels is maintained in the sun and beach holiday destinations.  Therefore, those

14   destinations with a higher percentage of second homes or a higher percentage of second

15   homes with respect to hotel beds have higher prices on Airbnb, although there is a larger

16   potential supply of rental properties.  This indicates a massification of the destinations

17   prior to the emergence of Airbnb, and therefore, that Airbnb is simply a showcase for an

18   activity which largely already existed, although it could also be attractive for new

19   tourists.

20          With respect to seasonality, the results confirm that for the traditional holiday

21   destinations it behaves negatively.  The same is true for all the destinations that continue

22   to have a negative relationship between *price* and *occupancy rate,* with the afore-

23   mentioned interpretation, although a larger size of the coefficient can be observed in the

1 cities, probably due to a higher volume of supply and a greater capacity of choice of the

2 demand.

3

4 6. Conclusions

5   Throughout this article the development and impact of Airbnb has been studied

6 with respect to very specific consolidated sun and beach destinations which have

7 different characteristics to those of the large cities which have traditionally constituted

8 the object of study and have attracted most attention. Filling this gap in the literature is

9 very important as, although Airbnb and the sharing economy are global phenomena, their

10 impact has a more than evident local component, and the characteristics that define a

11 destination are those which determine the degree of opportunity or threat that Airbnb

12 represents for its development.

13   Therefore, nine tourist destinations have been selected in the Region of Valencia,

14 one of the Europe's tourism regions *par excellence*, with more than 25 million visitors

15 each year, and a high supply of second homes boosted by strong property investment.

16 For decades, national and international investment in property in the region has been

17 constant, particularly until the crisis. This has given rise to a unique urban and tourist

18 accommodation supply for studying the impact of platforms such as Airbnb.

19   However, in the study carried out we can distinguish between two types of

20 destinations: first, destinations with a more identifiable urban component and second, sun

21 and beach destinations which are more holiday-dependent and have a very high second

22 home component. This gives rise to noteworthy differences in the supply of Airbnb. In

1     the urban destinations, we can observe a higher total number of properties listed on

2     Airbnb, but in relative terms the sun and beach destinations are those where Airbnb has a

3     greater weight with respect to the total accommodation supply. These differences have

4     different impacts on the shaping of local policies: in the urban destinations land is

5     distributed between business, tourism and housing uses, so the emergence of Airbnb has

6     given rise to new problems such as gentrification. In the sun and beach destinations

7     analyzed, however, the land is mostly used for tourism - including second homes - and

8     Airbnb can represent a solution to the low profitability and high seasonality of the

9     destinations which negatively affect their socio-economic development and employment.

10        On the other hand, in the Region of Valencia, second home rental activity is very

11     traditional and rooted in the historical development of the destinations, particularly the

12     sun and beach locations. This private property rental activity has often been defined by

13     very traditional distribution mechanisms, including *word of mouth.* Airbnb represents a

14     before and after for the second home rental market, and, for the first time, thousands of

15     apartments which were formerly rented out covertly, are now transparent. This can

16     facilitate the action of governments to administratively control the total accommodation

17     supply of destinations. A further advantage which Airbnb provides to consolidated

18     destinations such as those analyzed in this study, is the offer of accommodation to more

19     tourists without the need to resort to new construction or the over-exploitation of the

20     saturated land on this coast.

21        This element of transparency which Airbnb confers to the traditional tourist

22     destinations can be studied by analysing its effect on the hotel supply. In our case, in the

23     Region of Valencia, no significant fall in hotel occupancy can be observed despite the

1 increase in the properties listed on Airbnb or the regularization of new apartments by the

2 government, which indicates that currently, thanks to platforms such as Airbnb, we have

3 better knowledge of the composition of the tourist accommodation supply in the more

4 traditional destinations. In this way, these platforms enable us to list a high number of

5 properties which could have been operating "invisibly" for many years.

6       This change in the supply trend towards transparency and new distribution

7 methods in the case of traditional tourist destinations is also occurring in the demand,

8 which undoubtedly regards the rental of tourism apartments more and more positively in

9 comparison to hotels, as noted in the literature. Within this context, it is essential to

10 analyse which elements are most relevant and generate the highest capacity to attract

11 demand and contribute to the profitability of the accommodation supply. This type of

12 analysis has a whole range of possible applications for improving the competitiveness of

13 the destinations which leads to the greater profitability of hotels and apartments, both

14 those which have been rented for years and those which have recently been incorporated

15 into the market thanks to the convenience of Airbnb.

16       In order to understand which accommodation attributes make a property

17 "attractive" and confer competitive capacity to destinations, we have used the hedonic

18 pricing method has been used introducing the "equilibrium price" as the dependent

19 variable. In this way, we know with certainty that we are working with the preference of

20 the demand and their willingness to pay for each attribute. In addition, another of the

21 main new features of this study is that as well as the intrinsic elements of the property it

22 has also incorporated variables relating to the tourist environment that could influence the

23 price of the tourism properties. On the other hand, the study also includes typical

1 components that define the online reputation of both the apartments and the hosts.

2 Undoubtedly, this reputation confers much more value than the traditional "stars" of

3 hotels and hostels, and therefore, should be important when explaining the decision of the

4 final customers.

5     From the results obtained, as a first contribution, we can highlight the impact of

6 the tourism environment on the rental price. The apartments listed on Airbnb in

7 destinations with a higher specialisation in second homes have higher rates. This

8 specialisation of the destinations means that, although there are alternatives such as

9 hotels, there is a positive relationship between the number of properties offered on

10 Airbnb and the final price paid by the tourist. We can also find a positive relationship

11 between the income of a destination and the price of the apartment, given that the

12 disposable income of the inhabitants is a good indicator of the price of tourist goods and

13 services of the destinations, or the seasonality, which negatively affects the average price

14 of the rental properties due to the lower rates in the months of lower demand.

15     With respect to the characteristics of the property we have observed similar

16 implications as those in the previous research mentioned above, such as Chen et al.

17 (2017), Dogru and Pekin (2017), Gibbs et al. (2017) or Wang and Nicolau (2017) among

18 others: all of the variables related to the size of the accommodation (the number of

19 bedrooms and the number of bathrooms) and the type of rental of the property (full

20 versus shared) have a positive effect over final prices on Airbnb. Therefore, it is clear that

21 a more spacious house or room has a higher price than a small property, but in our

22 research we have observed that this factor is more important in urban destinations where

1 there are more types of properties than in holiday destinations where entire family-sized

2 properties are usually rented.

3 But all of these elements that externally or intrinsically characterize the tourist

4 accommodation are compromised by the online reputation; one of the elements which

5 best defines the digital economy. In our study we can observe that the opinion of users

6 (measured as the average rating score on Airbnb) has a positive and highly significant

7 effect on the final price, while the number of comments has a negative impact on pricing

8 determination. These effects (positive and negative) can be seen in Dogru and Pekin

9 (2017), in Gibbs et al. (2017) and in Teubner et al. (2017) - in Ert et al. (2016)

10 surprisingly the reviews are not sufficiently significant so as to explain the price

11 determination.

12 In our study, it is demonstrated that the effect of the review of users has a greater

13 influence on the price of the urban destinations than on the holiday ones, probably

14 because there is a greater supply and more types of properties in the urban destinations,

15 as previously mentioned.

16 Other effects, such as the cancellation policies can also be significant, showing

17 some differences regarding to hotel strategy, particularly in the sun and beach holiday

18 destinations. In this case, this could be due to the fact that the hosts of luxury or higher

19 quality properties exercise their market power and establish a stricter cancellation policy

20 because it is more difficult for them to re-rent the property in a very short time, or

21 because these properties are the most sought-after in a market of monopolistic

22 competition. This result is also found in Chen et al (2017), with a decrease of prices when

23 there is a moderate cancellation policy with respect to other more strict policies.

1        Despite our analysis, it is obvious that defining the reasons why a person prefers

2    to stay in an apartment or a hotel is not easy. There are many factors that can influence

3    the final decision. It is even common for many tourists to alternate between one type of

4    accommodation and another. However, there will always certain elements that are

5    decisive for making the final decision. Based on the results obtained, the hotel companies

6    could focus on the factors observed in this study to attract the type of tourists who stay in

7    Airbnb accommodation. To do this, traditional hotels could create more family-oriented

8    environments with greater flexibility in the extra features (such as the size of the room,

9    cleaning service, access to kitchen facilities...) with a greater focus on the online

10   reputation with more information and photos, responding to the demand of the users

11   before and during the stay, in order to obtain the best possibly reputation.

12       This adaptation of the hotel sector will be fundamental over the next few years.

13   Although in  the Region of Valencia, as we have already mentioned, to date no reduction

14   in the occupancy rates of hotels has been observed, in the literature review of this article,

15   other destinations have been referred to where Airbnb has a direct influence on the prices

16   and occupancy of the hotel sector with a constant loss of profitability. Changes in the

17   regulations could slow down this effect. This would provide greater protection to the

18   traditional sectors, but the changes that seem unstoppable in the preferences of the

19   demand would negatively affect the competitive capacity of those destinations that do not

20   accept the sharing economy. In the global economy we cannot shy away from

21   competitive solutions such as Airbnb, driven by the digital economy and a series of

22   technological improvements which, unfortunately, many traditional companies have not

23   known how to implement or have been unable to do so.

1        With respect to the contribution of this article to the renovation of the tourist

2    accommodation supply in traditional sun and beach destinations, it should be noted that

3    there is a need for new variables and further study that will provide more information that

4    is more robust than the results found. This is the main limitation of our database and

5    should be improved in the future in order to obtain a greater level of significance and,

6    therefore, better recommendations to maximize the competitiveness of the destinations in

7    accordance with the new tourist accommodation trends. Among other variables, the

8    inclusion of the location of the property, other elements of the properties such as the

9    "cleaning service", or the specific reputation (not general) of elements such as *location,*

10   the *arrival* or the *quality* which are included in the profiles of the Airbnb listings is

11   recommended. These variables have been included in different studies mentioned above,

12   and the authors have obtained interesting results that could be compared in the future to

13   our region of study.

14        Therefore, it is important to remember that the results obtained are only

15   applicable to a specific Mediterranean region (Region of Valencia, Spain). In the future

16   new studies could determine whether the differences found in this research between

17   urban and sun-and-beach destinations are replicable in other tourist regions worldwide or

18   among other kind of tourist destinations.

19        Finally, and based on the results of the analysis, new studies could be carried out

20   along different lines with respect to the variables used, adopting a quantile regression

21   which generates results that are predictably more robust and better explain the

22   relationship existing between the variables.

23

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