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Airbnb landlords and price strategy: Have they learnt price discrimination from the hotel industry? Evidence from Barcelona

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ABSTRACT
The hospitality industry is facing a major disruption as a consequence of Airbnb and similar peer-to-peer platforms. This empirical research analyses the impact of perceived quality in pricing differences according to seasonality. Upper-scale hotels show less difference comparing peak and low season prices than do middle-scale hotels. Airbnb landlords discriminate prices according to seasonality, but contrary to the hotels, there are generally no differences between weekday and weekend pricing. Perceived quality seems to have a lower effect on prices for Airbnb apartments compared to the hotel industry, suggesting the idea of two clearly different business models.

KEYWORDS
Temporary price discrimination; Airbnb; service quality; location; lodging industry; customers’ Internet valuation

Introduction
The sharing economy is becoming an increasingly relevant topic among scholars (Belk, 2014; Matzler, Veider, & Kathan, 2015; Schor, 2016), and researchers’ interests include how consumers’ behaviour is changing through the use of peer-to-peer platforms (Hamari, Sjöklint, & Ukkonen, 2015), the effects on the profitability for traditional industries (Zervas, Proserpio, & Byers, 2014), the best strategies firms can apply to adapt to the new environment (Matzler et al., 2015) and what might be the optimal strategy for coping with the positive and negative effects associated with these new participants acting in the market (Jefferson-Jones, 2014). Some industries have been particularly affected by peer-to-peer platforms supplying alternative services to the traditional industry, such as Uber in the taxi industry (Barro, 2014; Cramer & Krueger, 2016; Hall & Krueger, 2016) and Airbnb or Homeway in the hospitality industry (Guttentag, 2015 or Oskam & Boswijk, 2016; Zervas et al., 2014). These platforms have experienced rapid and sometimes exponential growth. Airbnb listings in New York increased from 6585 in 2012 to 12,466 in 2014, an increase rate of 189.3% that contrasts with the 5.32% increase in rooms supplied by the traditional hotel industry.
The hospitality industry has experienced some important changes after the irruption of Airbnb and similar peer-to-peer platforms. The increase in accommodation supply has the potential to reduce the profitability of the traditional hotel industry, and in an attempt to measure the effect on revenues, Zervas et al. (2014) found that the negative effect on revenues is particularly important for 2 and 3 star category hotels, with the upper luxury segment less affected. In the traditional industry, revenue management has constituted a basic tool in improving profitability levels (Chiang, Chen, & Xu, 2006; Choi & Kimes, 2002; Weatherford & Bodily, 1992). Prices in the hotel industry vary according to seasonality, with hotels taking advantage of the shortage generated at the peak of the demand and the lower elasticity of demand from some segment markets, such as tourists on holidays. There is no empirical evidence on pricing strategies by landlords using Airbnb and similar platforms. This research has considered Airbnb apartment prices and their relation to perceived quality and changes according to seasonality as well as the differences between weekday and weekend pricing.

The data used in this empirical research refer to the city of Barcelona, which is the second largest city in Spain and one of the most visited cities in the world. Barcelona ranked 12 among the most visited cities in the world by a number of tourist publications in 2016 (Millington, 2016). The town of Barcelona statistics office provides yearly data related to the importance of tourism in the city. According to this official data, Barcelona had a total population of 1.6 million in 2015 and received 8.3 million tourists staying in hotels in that same year (Tourism Statistics, 2015. Barcelona City Council; 2016). The city started to become a very popular destination after hosting the 1992 Olympic Games. The phenomenon of low-cost airlines offering cheap tickets from many European cities to Barcelona has helped to consolidate it as one of the most important touristic cities in Europe. The change has been rapid and overwhelming. For example, in 1990, the number of overnights at Barcelona hotels was 3,795,522, whereas in 2015, this number reached 17,656,329, with a yearly average increase of 10.79% (INE, Spanish Statistical Office, 2016). To face this increase in demand, the supply has accordingly showed a rapid growth. The number of beds offered by the hotel industry increased during the same period from 10,285 (1990) to 34,573 (2015) (INE, Spanish Statistical Office, 2016). The composition of the hotel industry has also changed in favour of more hotels in the upper luxury segment, and the number of touristic apartments has grown exponentially, making Barcelona one of the most popular cities in terms of the supply offered worldwide through the online exchange service Airbnb. Thus, Barcelona is one of the clearest examples of how the hospitality market is changing.

This paper seeks to understand how hotels and Airbnb apartments compete, what their similarities and differences are in terms of pricing strategies, the role of seasonality or to what extent a higher perceived quality by customers translates into higher prices will help to forecast the future of the industry and the strategies managers will apply in this new context.

**Literature review**

Appropriate revenue management can be an efficient tool in improving the profitability obtained by a firm. According to Weatherford and Bodily (1992), industries that present three specific characteristics are the ones in which yield management results are more appropriate. The first characteristic is that the product or service cannot be stored, such as a hotel room. Secondly, there are constraints related to the capacity to improve the
production in the short term, such as the number of rooms in the hotel industry. Finally, customers present different price elasticity, and it is possible to class them according to their willingness to pay. The hotel industry includes business and leisure travellers that fulfil this definition (Chu & Choi, 2000; Kashyap & Bojanic, 2000; Yavas & Babakus, 2005). The optimum yield management has been a wide topic discussed at first regarding the airline industry (Belobaba, 1987; Smith, Leimkuhler, & Darrow, 1992) and later on in a growing number of published papers examining yield management in the hotel industry. The academic literature on revenue management has covered topics ranging from the analysis of revenue management as a theoretical perspective that can be used to solve problems using dynamic programming (Bitran & Mondschein, 1995), to the real conditions that the hotel industry was facing and to what extent price segmentation can be applied (Hanks, Cross, & Noland, 2002) and to studies summarizing the different techniques that can be applied to define optimum price strategy (Kimes, 1989).

Affecting prices that managers in the hotel industry must handle is the fact that the demand shows, in most cases, a high variability according to the time the year. The hotel sector is characterized by high seasonality, which can be measured using different indicators, such as the Gini coefficient, the seasonality indicator or the seasonality ratio (Karamustafa & Ulama, 2010). A higher willingness to pay during these peak periods allows hotels and apartments to apply higher prices during the peaks (Saló, Garriga, Rigall-I-Torrent, Vila, & Fluvià, 2014). The low prices that hotels offer during low-demand periods depend on the quality they are signalling. Quality can be measured using different indicators. The star system is a traditional way of signalling quality. Star rating system, however, change from one country to another and are usually based on public legislation, which usually considers factors that can be objectively measured. Today, consumers base their decisions on their own search for information, making online reviews and ratings by past customers a way of measuring perceived quality. Hotels in the upper scale of quality charge higher prices and show, on average, fewer differences when comparing peak-demand and low-demand prices (Abrate, Capriello, & Fraquelli, 2011; Becerra, Santaló, & Silva, 2013; Coenders, Espinet, & Saez, 2003). These conclusions work for hotels located in sun and beach destinations but also for hotels in urban areas. The temporary price discrimination is not only applied according to the high or low demand periods but also according to the day of the week on which the host will stay at the hotel. Schamel (2012) found that in the case of the Italian city of Bolzano, customers were paying approximately 48% higher prices if they booked for a weekend rather than a weekday. Juaneda, Raya, and Sastre (2011) found a similar pattern in terms of prices according to seasonality for hotels and apartments, but being more pronounced for apartments, as their analysis focused mainly on summer touristic destinations. de Oliveira Santos (2016) applied a hedonic analysis to hostels and found that high cleanliness, facilities and location rates from past customers have a positive impact on the final price. An analysis of hotels and second home rentals in one of the most visited sun and beach destinations in Spain, i.e. Costa Brava, showed that location is an important factor in explaining price differences, that star rating is also significant and that the difference between shoulder and peak period prices is sharper for hotels than second home rentals (Saló et al., 2014).

Based on the analysis of previous academic literature, we propose the following hypotheses to be tested:
Hypothesis 1: Landlords supplying short-term rentals to tourists through Airbnb online platforms show higher differences comparing low-demand season with peak season than do middle-scale hotels.

Hypothesis 2: The price differences observed between peak- and low-demand periods are less important for hotels in the upper quality segment.

Hypothesis 3: Landlords supplying short-term rentals to tourists through Airbnb online platforms apply less temporary price discrimination between weekdays and weekends than do hotels.

Hypothesis 4: Hotels signalling higher quality through ratings by past customers apply higher prices.

Hypothesis 5: Apartments signalling higher quality through ratings by past customers apply higher prices.

Hypothesis 6: Hotels signalling higher quality through a high number of stars apply higher prices.

These hypotheses summarize the idea that pricing strategies consider seasonality and that price differences between peak- and low-demand moments also depend on quality, either perceived by past customers or signalled by the star category. Hypotheses 1, 3 and 5 refer to the expected behaviour by landlords that are using Airbnb to sell their services.

Data and method

The Barcelona Association of Hotels (Gremi d’hotelers de Barcelona) publish at its website a list of all the hotels that are offering rooms, with contact details and some additional information, including the star category of each hotel. From a random selection using stratified sampling according to the number of stars, a final sample of 106 hotels from a total of 390 hotels was selected; the list of hotels was the one available on the 1st of November 2016; the number of hotels is constant throughout the year: they open all year long, and no new hotel opened in 2016. The most common star categories are the three and four starts that represent 28.3 and 33.02% of the total sample; the upper scale quality hotels are represented by 5 stars, as are the great luxury hotels, 3.77 and 4.71%, respectively. To look at prices, the information was gathered from the hotels’ websites; in all cases the booking process referred to the simplest category room and only for the accommodation option, without any extras such as breakfast or other meals. To decide what periods correspond to peak and low season, public demand monthly data on the number of tourist arrivals and overnight stays in Barcelona was analysed. July and August are the months with the maximum number of overnight stays, reaching almost 20% of the total, whereas January and February show the lowest values, less than 6% yearly overnights each month. Data for the low-demand season correspond to Tuesday and Wednesday, the 7th and 8th of February, and prices for Friday and Saturday of the same week were collected during the second week of November 2016. When data were being collected, many hotels from the sample did not have rooms available
for July, so that the 8th and 9th of August and the corresponding weekend were selected as moments of peak demand. Additional information was verified to avoid any special event on these days in the city of Barcelona, such as conferences, concerts or similar events. A total of 424 price observations were collected. Table 1 shows the sample composition in terms of star category and the average prices for weekends, weekdays (Tuesday and Wednesday stays) during two different moments: peak and low demand.

From the analysis in Table 1, some important facts can be highlighted. Firstly, in the four time periods analysed, prices tend to increase monotonically according to a higher star rating, the only exception being between 5 star and 5 star Great Luxury in the low-season period. The star category is a quality-signalling variable that is a clear determinant of price differences. Considering prices for a weekend during the peak demand period, the 3-star hotels on average are 23.5% more expensive than 1-star hotels; if we compare them with the 5 Great Luxury hotels, the maximum star category according Catalan Government regulations, prices are 212.28% higher than the 1-star category. It is also worth noting that these differences are more significant if we consider periods of low demand, when low-category hotels feel forced to drop prices to prevent occupancy rates from falling even more. If we consider weekends in a low-demand week, the 5 Great Luxury hotels charge on average approximately 263% more than the lowest category. As previous literature has shown (Schamel, 2012), prices are lower for weekdays than weekends; looking at the week selected in the demand peak season, the 2-star hotel category applied the maximum difference, charging 19.73% more for a weekend than for two weekdays; during the low-demand week selected, the difference was even higher: 31.12%. Interestingly, the difference price charged comparing weekend with weekdays is not linearly correlated with the star category, as Graph 1 shows 4 superior, during the peak period, and 5 stars, during the low-demand period, are the ones that show less difference according to the day of the week when customers stay at the hotel. Nevertheless, upper category luxury hotels apply higher differences than do the intermediate-level hotels.

To determine customers’ valuation, the average valuations given at two of the most commonly used websites for booking hotels, Tripadvisor and Booking (Ayeh, Au, & Law, 2013; Aznar, Bagur, & Rocafort, 2016; Chaves, Gomes, & Pedron, 2012; O’Connor, 2008), were collected.

To compare if landlords apply similar pricing strategies, a random sample of 163 apartments offered to tourists in the city of Barcelona through the popular Airbnb website was selected. Considering the same days as those involved in the search related to hotels, for each apartment prices to stay in a simple room were selected for a Tuesday and Wednesday stay, and also for a Friday and Saturday stay, selecting the same weeks for low- and peak-demand

### Table 1. Sample composition and average prices for different time periods.

<table>
<thead>
<tr>
<th>Star category</th>
<th>% of the sample</th>
<th>Weekend price, peak season</th>
<th>Weekend price, low season</th>
<th>Week days, peak season</th>
<th>Week days, low season</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13.21%</td>
<td>214.43€</td>
<td>117.89€</td>
<td>195.31€</td>
<td>100.30€</td>
</tr>
<tr>
<td>2</td>
<td>10.38%</td>
<td>244.67€</td>
<td>156.22€</td>
<td>204.35€</td>
<td>119.15€</td>
</tr>
<tr>
<td>3</td>
<td>28.30%</td>
<td>264.82€</td>
<td>191.28€</td>
<td>231.09€</td>
<td>158.87€</td>
</tr>
<tr>
<td>4</td>
<td>33.02%</td>
<td>369.99€</td>
<td>221.36€</td>
<td>315.51€</td>
<td>177.47€</td>
</tr>
<tr>
<td>4 Superior</td>
<td>6.60%</td>
<td>411.43€</td>
<td>315.00€</td>
<td>401.71€</td>
<td>293.14€</td>
</tr>
<tr>
<td>5</td>
<td>3.78%</td>
<td>588.26€</td>
<td>463.32€</td>
<td>567.01€</td>
<td>462.05€</td>
</tr>
<tr>
<td>5 Great Luxury</td>
<td>4.71%</td>
<td>670.83€</td>
<td>428.60€</td>
<td>596.96€</td>
<td>413.62€</td>
</tr>
</tbody>
</table>
seasons as in the hotels’ sample. For each apartment, information about past customers’ valuation in the form of average value was considered. Apartments were classified according to the following categories: apartments without a rating from past customers, which is the case if, according to Airbnb, the apartment has not reached a minimum critical number of ratings by past customers; apartments rated 7 and 8; apartments rated 9; and apartments rated 10, the maximum possible category and is only achievable when all past customers have given the apartment the maximum rating. The results are summarized in Table 2.

There are similarities but also differences when these data are compared with the ones for the hotels’ sample. Quality matters, regardless of the period considered, and prices for apartments rated 10 are higher than those rated lower. During peak-demand season, considering a weekend booking, apartments rated 10 are on average 18.97% more expensive than the ones rated only 7 or 8. During the period with lower prices, weekdays in the second week of February, the difference is on average 34%. Apartments signalling a lower quality level must apply higher discounts during the low season. Similarly to hotels, prices change according to seasonality. Prices for a weekend in August compared with February are 40.31% more expensive in apartments rated 10 and 59.82% more expensive for the ones only rated 7 or 8. Looking at the differences between bookings on a weekend or on weekdays, we observe

**Table 2.** Apartment prices at different periods of time.

<table>
<thead>
<tr>
<th></th>
<th>% of the sample</th>
<th>Weekend prices during peak demand season</th>
<th>Weekdays prices during peak demand season</th>
<th>Weekend prices during low demand season</th>
<th>Weekdays prices during low demand season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments rated 7 or 8</td>
<td>19.05%</td>
<td>290.00€</td>
<td>290.00€</td>
<td>181.00€</td>
<td>165.92€</td>
</tr>
<tr>
<td>Apartments rated 9</td>
<td>57.14%</td>
<td>339.97€</td>
<td>332.22€</td>
<td>212.72€</td>
<td>191.36€</td>
</tr>
<tr>
<td>Apartments rated 10</td>
<td>14.29%</td>
<td>340.33€</td>
<td>332.67€</td>
<td>242.56€</td>
<td>222.33€</td>
</tr>
<tr>
<td>Apartments without a rating</td>
<td>9.52%</td>
<td>345.00€</td>
<td>323.83€</td>
<td>267.17€</td>
<td>227.33€</td>
</tr>
</tbody>
</table>

**Graph 1.** Weekend overprice to weekdays.
a clear difference compared with hotels. In the hotels’ sample, whereas hotels rated with 2 stars charge 19.73% more for a weekend than a weekday booking during peak-demand season, apartments rated 7 or 8 apply exactly the same prices, supporting our hypothesis that apartments do not generally discriminate between weekdays and weekends.

In contrast to the proposed hypothesis, different statistical tests have been applied according to the nature of the hypothesis. The first hypothesis is that Airbnb landlords apply higher discounts during the low-demand season than do midscale hotels. To test this hypothesis we have defined two new variables: they are the overprice applied, at hotels, from 1 to 3 stars, and at apartments, if we compare the price on the weekend selected as peak season and the weekend selected as the valley-demand season. The Shapiro-Wilks test was applied to test the normality of the variables involved, in both cases concluding that overprice applied by hotels and apartments is not normally distributed. To check if the discounts applied are on average different, the non-parametric Mann-Whitney U test was applied. The average value for the overprice applied at hotels is 56.23%, whereas the average overprice applied by apartments is 65.85%. However, the difference is not statistically significant. Thus, although apartments charge approximately 10% more on weekends during the peak season than do hotels, we cannot accept the hypothesis that apartments applied higher discounts.

The second hypothesis suggests that hotels in the upper scale apply lower discounts during the lower season. Because upper-scale hotels have a greater capacity to apply higher prices during any time of year, they are less affected by seasonality than medium-scale and low-category hotels. To contrast this hypothesis, we have considered the overprice charged during a peak-demand season weekend compared with a valley-season weekend. Two groups have been compared using the Mann-Whitney U test: hotels in the low- and mid-scale category (the ones with less than 4 stars Superior) and the 4 stars Superior, 5 stars and 5 Stars Luxury, the group representing the upper-scale category. Hotels with a star rating below 4 stars Superior apply on average a 15.022% overprice during peak season, compared with just 5.743% in the case of upper-scale hotels. This difference is statistically significant, and this hypothesis is, therefore, accepted.

The third hypothesis tested whether hotels apply higher overprices on weekends related to weekday reservations compared with apartment price policy, with hotels applying the temporary discrimination much more than do apartment owners. The average overprice applied by hotels (13.62%) comparing a weekend price with a weekday price during peak-demand season is significantly different, according to the Mann-Whitney U test, to the average overprice applied by apartment owners (1.10%). Table 3 show the main findings related to this hypothesis. This is a result consistent with the fact that 90.9% of the apartments studied do not apply different prices for weekends and weekdays during peak season, whereas only 20.75% of hotels applied a similar policy of no differences according to the day of the week on which reservations have been made. From the list of hotels applying similar prices whatever the day, 77.27% are hotels in the upper scale, with four or more stars; this

<table>
<thead>
<tr>
<th>Table 3. Differences comparing weekend and weekday stays between hotels and apartments.</th>
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<tr>
<td><strong>Mean (%)</strong></td>
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<tr>
<td>Overprice applied by hotels</td>
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<td>Overprice applied by apartments</td>
</tr>
</tbody>
</table>
result suggests that hotels in the low-star categories are more aggressive in terms of price differences depending on the day of the week.

The fourth hypothesis tested the existence of a positive correlation between past customers’ valuation and prices charged by hotels. The correlation between price charged at weekends during peak season and the customers’ valuation is statistically significant at 1% level wherever Spearman’s correlation (.575) or Kendall’s Tau (.417) is applied. This result is consistent with the increasing importance that new customers are giving to past customers’ reviews, making reputation a key variable in the capacity of a hotel to apply higher prices; even for hotels with similar star ratings, the ones with the best valuations have the capacity to apply higher prices. Based on our sample, if we consider all three-star hotels, the only one that obtain a rating over 9 from past customers charge 440€ for a Friday and Saturday stay, compared with an average value nearer to 200€ for hotels rated 7 and 8.

Hypothesis 5 is based on the same assumption of positive correlation between customer valuation and prices, but in this particular case for apartments available at Airbnb. Based on the not-normal distribution of the variables involved, tested with the Shapiro Wilk test, Spearman’s correlation (.209) and Kendall’s Tau (.157) have been applied, but neither of them is significant. We reject the fifth hypothesis, as there is no relation between Airbnb valuations by past guests and price charged. It is interesting to note that even new apartments with no valuation because the lack of reviews or being less than what Airbnb considers acceptable, can charge really high prices according to location and facilities of the apartments, these factors being probably more relevant than customer rating.

The final hypothesis to be tested is whether signalling quality to higher star ratings correlates with higher prices. Prices for a weekend stay during the peak season selected, 8th and 9th of August, were tested considering the star rating of each hotel in the sample. Again, the use of Spearman’s correlation (.665) and Kendall’s Tau (.532) is significant at 1% level. It is interesting to note that these correlations are higher than the ones observed, if we consider past customer valuations, so it still important for the capacity of hotels in the upper scale of the rating system to charge prices above midscale hotels. Table 4 summarizes the final conclusion reached after performing the corresponding statistical test and the level of significance.

**Discussion and conclusions**

Peer-to-peer platforms are changing the market structure of many industries, affecting everything from profitability in the more traditional industry, to challenging governments in seeking the best possible regulations or changing the way customers interact with suppliers; all these aspects are becoming increasingly relevant for scholars. In the case of the hospitality industry, Airbnb or Homeway, among others, are platforms that allow a massive increase in the number of rooms available and are a close substitute for hotels in the lower and midscale categories. In an effort to broaden research on this new situation, this paper focuses on the price strategies applied by landlords and the similarities and differences regarding what we know hotels do in terms of how prices differ according to seasonality and the differences in staying weekdays or weekends. A second objective of the paper is to test if service quality, measured either through the star category system or from past customer valuations, is helpful in increasing the capacity for applying higher prices and lower differences in terms of seasonality. Although this is a topic that has been
Table 4. Summary of results.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Result</th>
<th>Test performed</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 1: Landlords supplying through Airbnb show higher differences between peak demand and low demand seasons than middle scale hotels</td>
<td>Rejected; the difference is not statistically significant</td>
<td>Mann-Whitney</td>
<td>Overprice by hotels: 56.23% Overprice by apartments: 65.85%</td>
</tr>
<tr>
<td>Hypothesis 2: Hotels in the upper scale star rating category have less difference between peak demand and low demand prices than the rest of star category hotels</td>
<td>Accepted at a 5% significance level</td>
<td>Mann-Whitney</td>
<td>Overprice by midscale hotels: 15.022% Overprice by luxury hotels: 5.743%</td>
</tr>
<tr>
<td>Hypothesis 3: Hotel price differences in terms of weekend and weekdays stays are higher than the ones observed for apartments</td>
<td>Accepted at 1% significance level</td>
<td>Mann-Whitney</td>
<td>Weekend overprice by hotels: 13.62% Weekend overprice by apartments: 1.10%</td>
</tr>
<tr>
<td>Hypothesis 4: Past customer valuations show a positive correlation with higher hotel prices</td>
<td>Accepted at 1% significance level</td>
<td>Spearman's and Kendall's Tau correlation</td>
<td>Spearman's correlation: .575 Kendall's Tau correlation: .417</td>
</tr>
<tr>
<td>Hypothesis 5: Past customer valuations show a positive correlation with higher apartment prices</td>
<td>Rejected; the positive correlation is not statistically significant</td>
<td>Spearman's and Kendall's Tau correlation</td>
<td>Spearman's correlation: .209 Kendall's Tau correlation: .157</td>
</tr>
<tr>
<td>Hypothesis 6: Star ratings correlate with higher prices</td>
<td>Accepted at 1% significance level</td>
<td>Spearman's and Kendall's Tau correlation</td>
<td>Spearman's correlation: .665 Kendall's Tau correlation: .532</td>
</tr>
</tbody>
</table>
analysed previously in the literature (Juaneda et al., 2011; Schamel, 2012), considering hotels and apartments in sun and beach destinations, the same analysis has not been carried out for apartments in urban areas. The massive use of Airbnb, Homeway and similar peer-to-peer platforms is changing the framework of accommodations, making it important to understand how landlords and tenants act and what they consider when deciding pricing strategies and consuming. In this context this paper has tried to assess if apartments are applying similar price strategies to hotels, or on the contrary, if the two groups of competitors are in slightly different market segments. On the other hand, quality in the accommodation industry is mainly perceived, and this paper has empirically tested the correlation between perceived quality through previous customer ratings and prices.

Using a sample of hotels and Airbnb apartments for the city of Barcelona, one of the most important European urban destinations with more than 8 million tourists in 2016, prices for stays on a weekend and on weekdays, comparing low- and peak-demand seasons, have been analysed. Our first conclusion is that we support the evidence in favour of less difference comparing peak-demand and low-demand prices for hotels in the upper scale. Quality offered still matters, and most luxury hotels can apply more constant prices throughout the year, being less affected by seasonality. However, to apply higher prices does not mean automatically higher profitability because to offer higher quality means more physical and human capital investment, which has a direct effect on cost; future analysis of the final impact on profitability is one of the future lines of research.

Hotels apply different prices for stays depending on the day of the week, with higher prices for weekend stays than on weekdays (Schamel, 2012). The theoretical basis for this situation is the possibility of applying third-degree discrimination between leisure travellers, who more commonly book on weekends, and business travellers. This paper implies a new insight in analysing if Airbnb landlords apply similar strategies in terms of the weekdays of the stay. The conclusion is that in this aspect, apartment owners act totally different from hotels managers. Although apartments are also applying price differences according to seasonality, in terms of the day of the week of the stay, Airbnb apartments are on average only 1.10% more expensive to book for a weekend rather than a Tuesday and Wednesday stay; at hotels the average difference is 13.62%. This difference can be explained because business travellers are more reluctant to use Airbnb services. Airbnb announced that at the World Mobile Conference at Barcelona, during the last week of February 2017, nearly one-third of assistants at the Congress, mainly business travellers, were staying at their apartments rather than at hotels, a signal that this segment market can potentially become important for peer-to-peer platforms. One conclusion from this paper is that how Airbnb landlords manage prices has not yet reached full potential, with scope for more segmentation according to the type of guest.

Customers’ perceived quality is an important factor that can potentially affect hotel profitability, and in this sense, quality management has been a consistent concern in the literature of the hospitality industry (Akbaba, 2006; Wang, Chen, & Chen, 2012). Considering the fact that hotels are mainly providing customers with a service, perceived quality is relevant for building a hotel’s reputation; this is more important in the current situation, with customers looking at different websites and comparing prices, previous customer reviews, and online comments. This paper has analysed the existence of a correlation between perceived quality and hotel prices, but this study is also one of the first papers to analyse this relation for short-rent apartments in Barcelona. Similarly to the previous literature (Xie, Zhang, &
Zhang, 2014), a correlation between customer valuation and prices has been found in our sample of hotels. Spearman’s correlation is statistically significant, at 1% level, with a value of .575. Hotels with better ratings from previous customers can charge higher prices, and a similar correlation is found when, instead of customer valuations, the star rating of the hotel is used. However, hotels with the same ratings show differences according to the valuation by customers; for example, among hotels with 4 stars, the ones with Internet past customer ratings between 8 and 8.5 apply an average price of 293.67€, whereas with same-star rating hotels above 9 in Internet valuations apply an average price of 367.53€ for the same two days during peak demand season. To invest in online reputation and to give excellent service to guests is an explanatory variable of the capacity to charge higher prices. In the case of apartments, an interesting result for apartments offered through Airbnb is that there is no correlation between Internet valuation by past customers and prices. A possible explanation, which future research should consider, is whether this difference can be explained in terms of the product or service rendered. For instance, the customer of a hotel is paying for a service, whereas an Airbnb customer is mainly looking at the best place to stay, with price and location as the two fundamental variables in the decision. An Airbnb customer is not so clearly paying for a service. Current and future research should try to analyse the profile of the Airbnb user and what differentiates them from hotel guests. This way, they can understand what really matters for Airbnb guests, which will help landlords develop the best strategies for increasing profitability.

This research attempts to understand pricing strategy applied by Airbnb landlords and the observable differences against hotel revenues management. The importance of quality as an explanatory variable for prices and its importance as a way to reduce dependence on seasonality have also been assessed for hotels and for apartments, with interesting and different results. Future research considering other cities with massive tourism and where Airbnb represents an important share of the market will help to strength these results. Finally, this paper has focused on pricing, but for investors and hotel managers, the strategic decisions would be based on financial performance, customer satisfaction and added value; hence, future research on perceived quality and financial performance, looking closely at their relationship, would be extreme useful for academics and professionals in the hospitality industry.

Geolocation information

This paper has analyzed the information regarding to the hotel industry and Airbnb apartments in Barcelona, the second largest city in Spain, and the fourth most visited city in Europe.

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There is no any financial interest or benefit from this research. There is no any conflict interest.

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