



Sustainable Tourism Observatory of Malaga

Seasonality Tourism



International Network
of Sustainable Tourism
Observatories



UNIVERSIDAD
DE MÁLAGA



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Plan de
Recuperación,
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y Resiliencia





Table of contents

<hr/>		
01.	Context	Pg. 7
<hr/>		
02.	Targets	Pg. 9
<hr/>		
03.	Methodology	Pg. 11
<hr/>		
03.1.	Data sources and variables	pg. 11
<hr/>		
04.	Results	Pg. 15
<hr/>		
04.1.	Seasonality in accommodation demand in the city of Malaga	pg. 15
	Trend in accommodation demand	pg. 15
	Seasonal Factors	pg. 18
	Max/min ratio	pg. 20
04.2.	Seasonality in accommodation offer in the city of Malaga	pg. 24
	Seasonal Factors	pg. 26
	Max/min ratio	pg. 26
04.3.	Profile of the tourist visiting the city of Malaga	pg. 28
	Travellers staying in hotels by country of origin	pg. 28
04.3.	Desscription of tourist profile	pg. 31
<hr/>		
05.	Conclusions	Pg. 33

01.

Context

Tourism seasonality is generally defined as the tendency of tourism flows to concentrate in relatively short periods of the year leading to an imbalance in a destination's supply and demand.

This phenomenon should be monitored by the managers of tourism destinations who must deal with it by establishing the appropriate policies or strategies to reduce its effects. The reduction of seasonality is not an easy task since it depends on various social, labour and climatological factors.

The main problem generated by seasonality is the underutilisation of tourism companies and services in low season and the saturation of the destination in high season due to the high concentration of tourists. Seasonality is often associated with negative effects such as unemployment, job instability or inefficient use of resources and facilities. However, it can also be considered as an opportunity to take advantage of those periods of low demand for the improvement of facilities and services.

In the coastal tourism destinations of Andalusia, the highest concentration of tourism demand is found in the third quarter of each year and is caused by the strong influence of climate factors. Therefore, it is important that this type of destination is committed to implementing strategies and policies based on the promotion of other less seasonal demand segments, such as the cultural segment that has already been seen to reduce the seasonal effect[®] in coastal destinations in Andalusia.

Traditionally, supply diversification has been one of the main strategies to reduce seasonality in tourism destinations.

© Cisneros-Martínez, J. D., and Fernández-Morales, A. (2015). Cultural tourism as tourist segment for reducing seasonality in a coastal area: the case study of Andalusia. *Current Issues in Tourism*, 18(6), 765-784. <https://doi.org/10.1080/13683500.2013.861810>

The city of Malaga has other attractions besides its beaches, and in recent years it has focused on cultural tourism through a varied museum offer which includes 40 museums and 55 monuments or places of interest. This firm commitment to cultural tourism has contributed considerably to building a more balanced demand by tourists throughout the year than that seen in other coastal destinations in Andalusia.

In recent years, there have been several initiatives aimed at addressing seasonality in Andalusia, such as the Network of Municipalities against the Seasonality of the Andalusian Coast, which was focused on achieving the objectives set by the Shock Plan against the Tourism Seasonality of the Andalusian Coast 16-18[®]. This initiative involved inter-municipal cooperation and public-private collaboration, with all the participating municipalities, including the municipality of Malaga, committed to working together to combat tourism seasonality.

Currently, the Costa del Sol Tourism Marketing Plan 2020-2023 and the Action Plans, prepared by the consultancy Turismo y Planificación Costa del Sol, a state-owned company of the Provincial Council of Malaga, highlight the importance of combating seasonality in the region's tourism destinations[®]. These documents establish that the domestic demand segment is concentrated in the summer months, and that foreign demand segments, which have different socio-cultural conditions and a more varied holiday calendar, concentrate their visits to a greater extent between April and October, thus configuring a broader and less concentrated high season. In addition, this consultancy has prepared specific reports that address seasonality. The Strategic Tourism Plan of the City of Malaga 2021-2024 also mentions the presence of weak seasonality in this destination, with a strong presence of foreign travellers. All these reports address the phenomenon of seasonality from a descriptive approach without support from any statistical method to quantify seasonal concentration levels and their evolution.

The period analysed in this report, between 2016 and 2022, is affected by the impacts of the COVID-19 pandemic which saw both demand and supply variables suffer significant declines in 2020 and 2021. The values for these years can be considered anomalous as they are not part of the usual trend.

To prevent these values distorting the analysis, we will try to eliminate them as far as possible, carrying out the most recent analysis through comparisons between 2022 and 2019, these being the last years not affected by the aforementioned pandemic.

② <https://www.famp.es/es/redes-observatorios/RMET/>

③ Turismo y Planificación Costa del Sol (2023). Plan de Marketing 2020-2023 de Turismo Costa del Sol. <https://www.costadelsolmalaga.org/>



02.

Targets

Malaga aims to maintain its low levels of seasonality or to reduce them by:

- To identify segments with less seasonal demand.
- To identify the seasonal behaviour of tourists.
- To create a laboratory of innovative ideas to reduce seasonality.

03.

Methodology

Data sources and variables

There are various demand and supply variables for tourist activity through which seasonality can be analysed in the city of Malaga. The variables with the largest number of records are those referring to hotel establishments and holiday apartments that distinguish demand between travellers resident in Spain and travellers from overseas according to the main sending countries.

The demand variables include the number of travellers accommodated, overnight stays made and the average length of stay, and the supply variables include the estimated number of establishments, the estimated number of rooms, the estimated number of beds, the number of staff employed and the degree of occupancy, the latter being a hybrid variable of supply and demand. In most of the studies and reports that analyse tourism seasonality, the tourist or overnight stay is used as the basic unit of measurement, and the frequency of the variables analysed is usually monthly or quarterly.

This report has considered those variables from the Hotel Occupancy Survey (EOH)^④ and the Holiday Apartment Occupancy Survey (EOAT)^⑤ prepared by Spain's National Institute of Statistics (INE) on a monthly basis that best reflect the evolution of seasonality.

Specifically, the number of overnight stays made in both hotel establishments and holiday apartments has been used to assess seasonality in the demand for accommodation, and the estimated number of beds in both types of accommodation to analyse seasonality from the point of view of supply. Additionally, the profile of tourists has been analysed through the synthesis of the report of the Malaga City Observatory for 2022 (Malaga City Council, 2023).

In the case of overnight stays in hotel establishments, data from 1999 are available, recorded by the Hotel Occupancy Survey (EOH) prepared by the National Institute of Statistics (INE). However, the INE recorded overnight stays in holiday apartments in 2016 through the Holiday Apartment Occupancy Survey (EOAT). Consequently, to carry out a joint analysis of the overnight stays made in both types of accommodation, the analysis of this report begins with 2016. It is important to note that this report analyses seasonality using statistical methods that are easy to interpret. Specifically, a method is used that consists of obtaining seasonal factors that will delimit the seasonal patterns of each variable analysed.

These factors are arrived at by obtaining relative frequencies calculated by dividing the value of the variable of the month of a given year by the total value of the variable in that year. Next, the average of the relative frequencies of the same month of all the years analysed is calculated. The results obtained are percentages for each month of the year. The months in which this percentage is greater than 100% are considered high season months and the percentage points that are above in a given month correspond to the higher percentage of the variable in that month with respect to the monthly average of the year.

Those months in which the percentage is less than 100% are low season months and those percentage points that are below in a given month correspond to the lower percentage of that month with respect to the monthly average of the variable.

In addition, an annual seasonal concentration indicator is used, to be called the max/min ratio, which identifies those years with the highest and lowest seasonality in a given year.

This ratio is calculated by the coefficient between the month with the highest value of the variable (maximum month) and the month with the lowest value (minimum month). The closer to 0 this ratio is in a given year, the less seasonality will have occurred during that year, and the further away from 0, the greater seasonality. With this ratio, the annual trend of seasonality in tourism demand and the segments that compose it can be analysed.

④ National Institute of Statistics (2023a). Hotel Occupancy Survey. <https://www.ine.es/>

⑤ National Institute of Statistics (2023b). Holiday Apartment Occupancy Survey. <https://www.ine.es/>



“Travellers from overseas represent more than 60% during the period (2016-2022), except for 2020 and 2021 due to mobility restrictions during the pandemic.”

04.

Results

To avoid exceeding the scope of this report, the available variables that can best represent the reality in the analysis of seasonality have been selected. Specifically, these are variables related to hotel establishments and holiday apartments.

The demand variable selected was the number of overnight stays, distinguishing between those made by travellers resident in Spain and travellers from overseas, with overnight stays being understood as each night that a traveller stays in an establishment.

The offer variable used was the number of estimated beds that are interpreted as the number of fixed beds in each establishment, which does not include extra beds, and double beds give rise to two beds.

Seasonality in accommodation demand in the city of Malaga

Trend in accommodation demand

The annual trend of overnight stays shows no seasonal variation. However, it is useful to know the trend of the values in the years analysed without the series being affected by seasonality. In this case, it can be observed how until 2019, the last year not affected by the COVID-19 pandemic, the evolution of overnight stays in hotel establishments showed an increasing trend while the trend for those made in holiday apartments was more irregular.

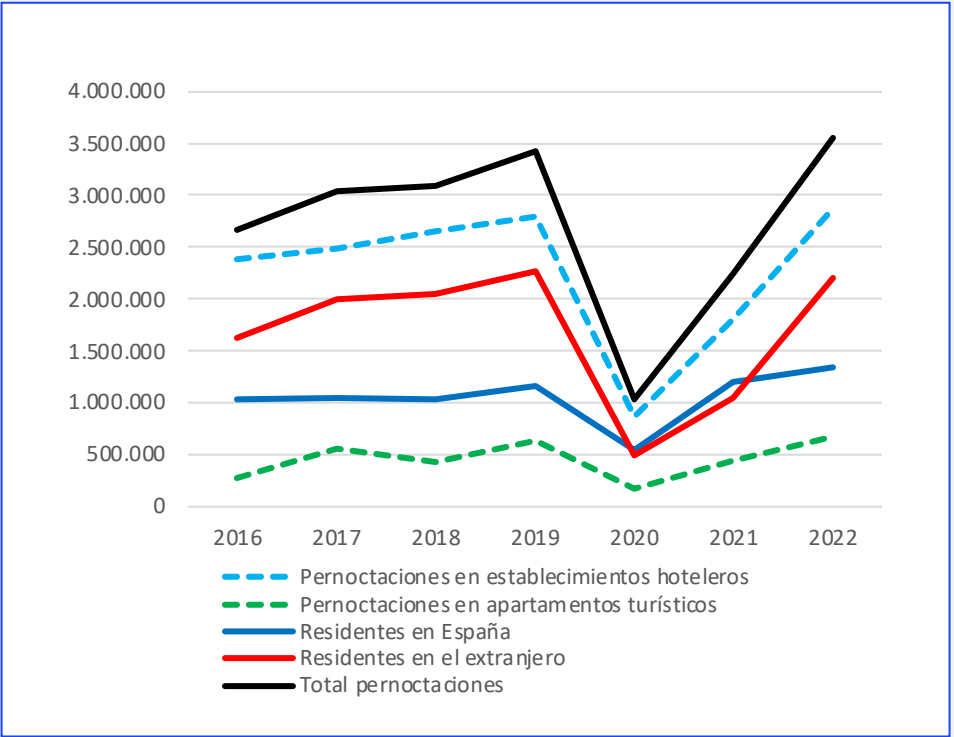
Likewise, while the trend in overnight stays made by travellers from overseas showed an increase until 2019, that of travellers resident in Spain remained more stable (Figure 1). In this figure it can also be seen that the demand for overnight stays is mainly concentrated in hotel establishments, exceeding 80% in all the years analysed with a record of 2.9 million in 2022. As for the origin of the travellers who make these overnight stays, travellers from overseas accounted for most of the demand in the period analysed, representing more than 60%, except for the years 2020 and 2021, which were affected by the mobility restrictions established during the COVID-19 pandemic, when the percentage was around 50%. The number of overnight stays by travellers from overseas recorded in 2022 was 2.2 million.

In Table 1 it can be seen that both overnight stays in hotel establishments and in holiday apartments have recovered demand levels with a growth rate of 3.1% and 6.2% respectively in 2022 compared to 2019. The number of travellers resident in Spain has shown faster recovery, registering a positive growth rate in 2021 and with a rate of 15.7% in 2022, which represents a strong increase in national demand in the city of Malaga. Demand from travellers from overseas has not yet reached 2019 levels with a negative growth rate in 2022.

The seasonal pattern of the monthly trend of total overnight stays is very similar to that of the demand segments with the greatest magnitude, such as overnight stays made in hotel establishments and overnight stays made by travellers from overseas (Figure 2).

The monthly trend of overnight stays shows an apparent seasonality, especially in the summer months in the case of overnight stays in hotel establishments, and in the case of travellers resident in Spain who show a greater demand in the summer months and in the month in which Easter Week takes place, with obvious peaks in its evolution.

Figure 1: Annual trend in overnight stays (2016-2022)



Source: Compiled by author based on data from INE

Table 1

Overnight stays (growth rate compared to 2019)

	Total	Hotel establishments	Holiday apartments	Travellers resident in Spain	Travellers from overseas
2019					
2020	-69,6%	-68,8%	-73,3%	-53,2%	-78,0%
2021	-34,4%	-35,5%	-29,9%	3,7%	-53,9%
2022	3,7%	3,1%	6,2%	15,7%	-2,4%

Source: Compiled by author based on data from INE

In addition to showing a concentration in the summer months, a large number of overnight stays made by travellers from overseas also take place in the months immediately before and after the summer, and those made in holiday apartments show a more unstable pattern that cannot be described just by showing the trend. There are also a high number of overnight stays, both of travellers resident in Spain and travellers from overseas, in the month in which Easter takes place and in the month of December in which the Christmas holidays take place, generating accentuated peaks of seasonality in both months.

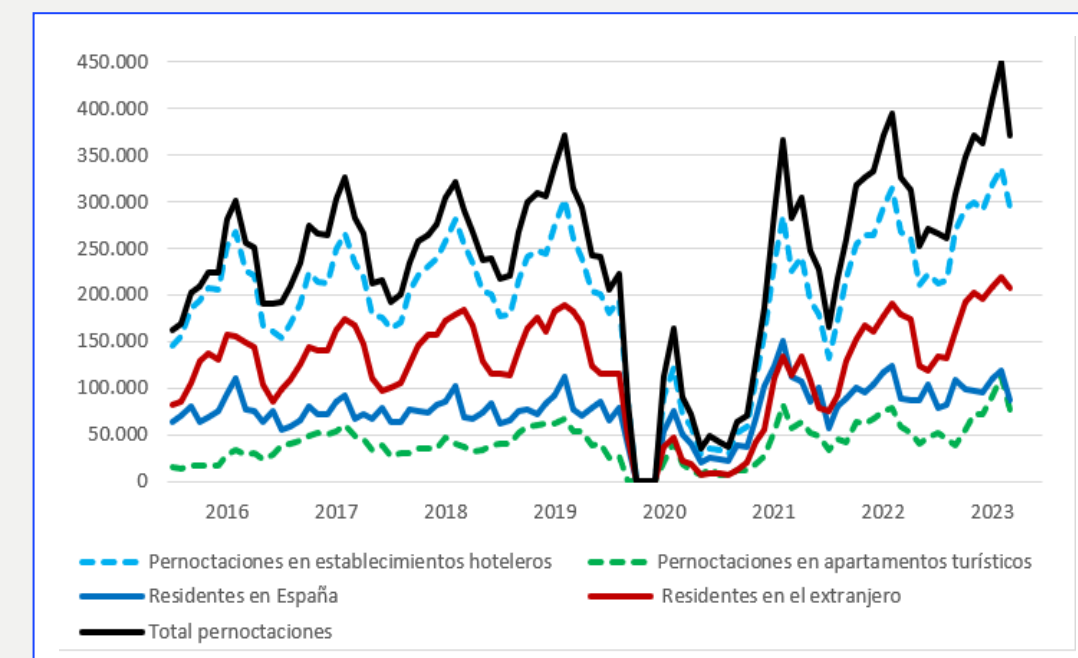
Seasonal Factors

“Travellers from overseas are less influenced by institutional and holiday factors.”

The observation of the trend in the variables may be indicative of the apparent structure of the seasonal patterns of each of the analysed demand segments. However, to delimit seasonal patterns, techniques are required that can quantify the level of demand that exists on average in each month of the year. Figure 3 shows the seasonal factors calculated in the period 2016-2019. The analysed period ends

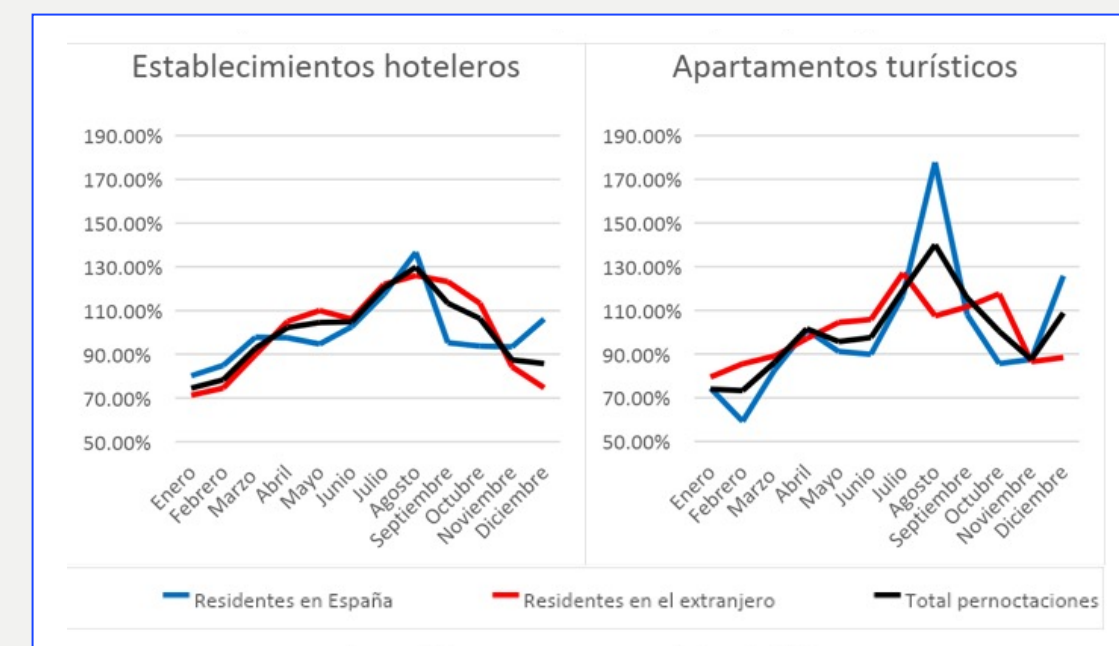
in 2019 as it is the last year not affected by the Covid-19 pandemic. On average, it is observed that the months with the highest number of overnight stays in hotel establishments made by travellers residing in Spain take place in the summer months, these months forming the high season for this demand segment, with the highest value in the month of August (136.7%). This value indicates that in August the number of overnight stays was 36.7% higher than the average monthly number of overnight stays. In addition to natural factors such as climate and beaches, this behaviour in national demand is also explained by institutional factors such as the holiday period shared by large segments of workers and students. December, with a value of 106.1%, is also considered a high-season month due to the Christmas holidays. Overnight stays made in hotel establishments by travellers from overseas have a high season that includes, in addition to the summer months, the months immediately before and after the summer period, specifically between the months of April and October, but with lower percentage values. This highlights the fact that travellers from overseas are less influenced by natural and institutional factors.

Figure 2. Monthly trend in overnight stays (2016-2023)



Source: Compiled by author based on data from INE

Figure 3: Seasonal factors of overnight stays according to the type of accommodation (2016-2019)



Source: Compiled by author based on data from INE

“Overnight stays are concentrated in hotel establishments and show a growing trend in recent years.”

“Overnight stays are concentrated in the summer months, Easter and Christmas.”

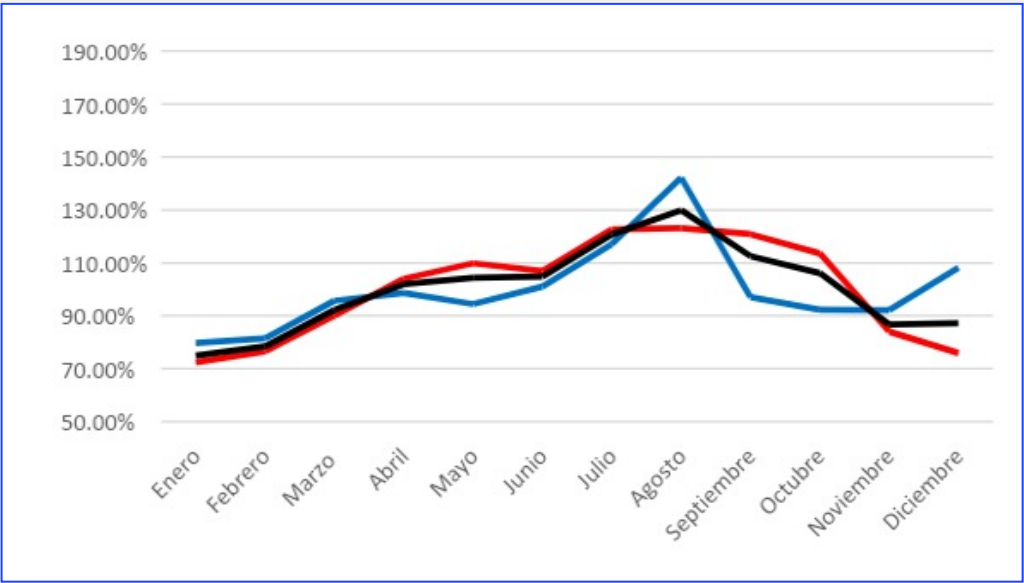
The seasonal factors calculated from overnight stays in holiday apartments are also represented in Figure 3. In this type of establishment, travellers resident in Spain experience a high season in the same months as in hotel establishments (June, July, August and December). However, in the month of August the number of overnight stays is 77.8% higher than the monthly average of overnight stays, thus being a more seasonal demand segment in holiday apartments. In the case of travellers residing overseas, the peak season is between the months of May and October, a month less than that observed in hotel establishments, with July and October being the months with the highest volume of demand with percentage values of 127.09% and 117.6% respectively.

Figure 4 shows the seasonal factors, calculated in the period 2016-2019, of all the overnight stays made in both hotel establishments and holiday apartments. It can be seen that these are very similar to the seasonal factors of overnight stays in hotel establishments represented in Figure 3. This is because, in the years analysed, around 20% of the overnight stays made in the city of Malaga are in holiday apartments and, therefore, overnight stays made in holiday apartments have slightly altered the seasonal factors of both types of accommodation. This joint analysis highlights that in the month of August there is a more accentuated peak caused by the high number of overnight stays of travellers resident in Spain in holiday apartments in these months.

Max/min ratio

Before starting the analysis of this ratio, it is necessary to clarify that the values for the years 2020 and 2021 have been excluded because of the anomalous nature of the unusual demand in these years due to the COVID-19 pandemic. The max/min ratio as an annual measure of seasonal concentration is represented in Figure 5. Higher ratio values imply a greater difference between the month with the highest number of overnight stays and the lowest, demonstrating that travellers from overseas staying in hotel establishments show more seasonal behaviour than those resident in Spain in the period analysed (with the exception of 2019).

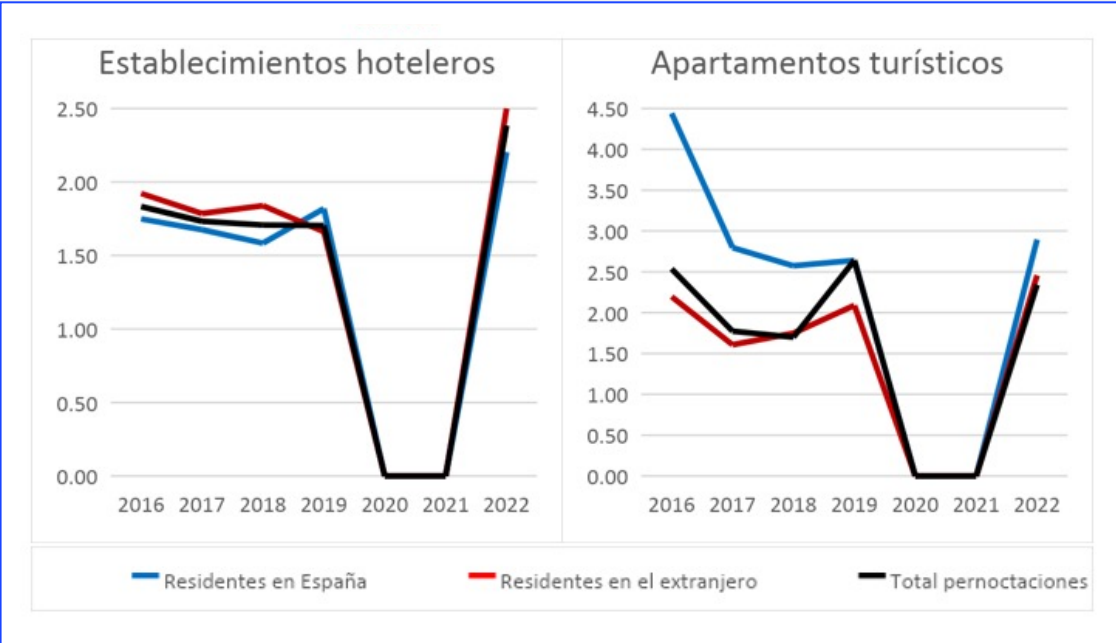
Figure 4: Seasonal factors of overnight stays 2016-2019



Source: Compiled by author based on data from INE

“August is the month with the highest seasonality, influenced by the high number of overnight stays in holiday apartments out of the total.

Figure 5: Max/min ratio of overnight stays according to type of accommodation (2016-2022)



Source: Compiled by author based on data from INE

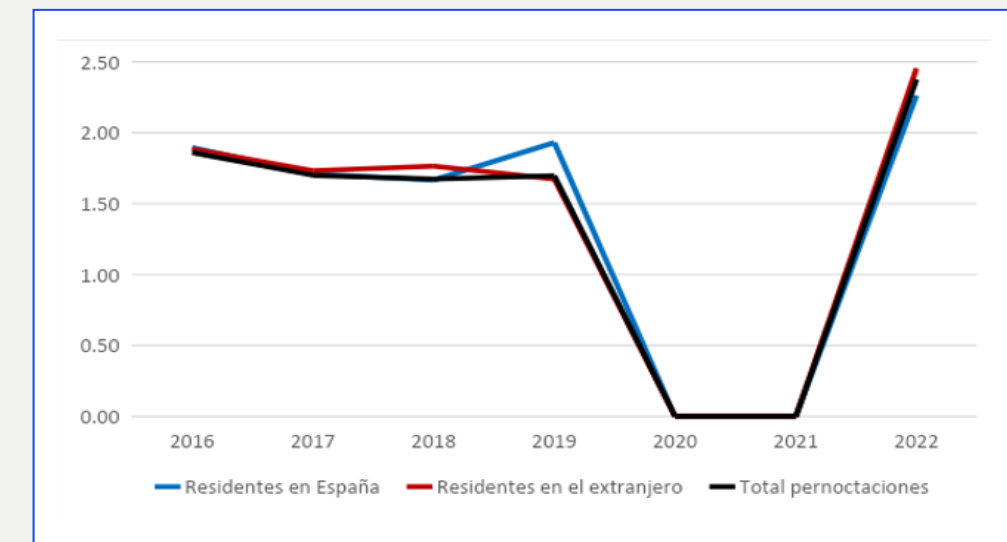
In the case of overnight stays in holiday apartments, the opposite is true. In this case, it is the segment of travellers resident in Spain that shown more seasonal difference with a higher ratio than travellers resident overseas and with a greater difference than in the case of overnight stays in hotel establishments. From this, it can be concluded that the demand segments according to national or overseas origin are vary in seasonality according to the type of accommodation

Figure 6 shows the max/min ratios calculated for the total number of overnight stays regardless of whether they were in hotel establishments or in holiday apartments. As with the analysis of seasonal factors, the joint results are similar to the results of overnight stays made only in hotel establishments because these make up the majority of overnight stays. Travellers from overseas show more seasonal variation than those living in Spain with slightly higher ratios in the years analysed, with the exception of 2019. This pattern is unique to the city of Malaga if we take into account that in most of the Spanish Mediterranean coastal destinations, travellers resident in Spain contribute the most to the overall seasonality of the destination. This may be because, unlike the vast majority of coastal destinations, the demand for this destination consists of segments with alternative motivations to sun and beach, such as cultural or gastronomic interests, as well as the congresses, events and festivals that attract national demand.

One of the remarkable values in the joint analysis is that in 2019 the degree of seasonal concentration of overnight stays made by travellers resident in Spain in holiday apartments was high, with a ratio of 2.64, and this contributed to the increase in overall seasonality that year with its ratio of 1.93.

Another of the general conclusions that can be seen through the max/min ratio is the relationship between the variation in the volume of a demand segment and the variation in the overall seasonality of the destination.

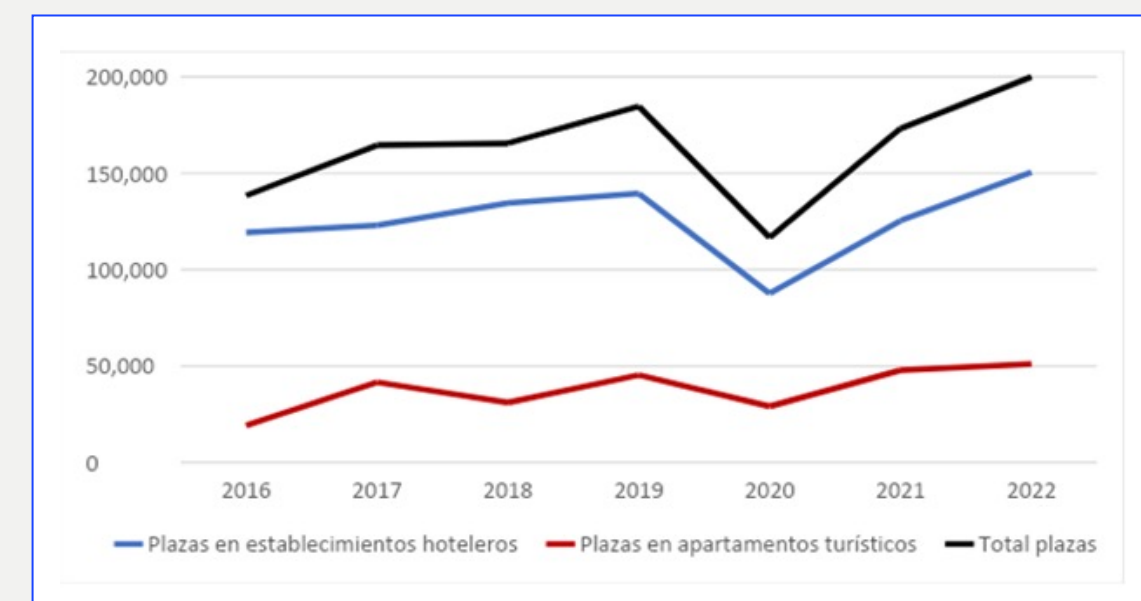
Figure 6: Max/min overnight stay ratio (2016-2022).



Source: Compiled by author based on data from INE

“Travellers from overseas show more seasonal change when staying in hotel establishments, but less seasonal change when staying in holiday apartments.”

Figurw 7: Annual trend in estimated beds (2016-2022)



Source: Compiled by author based on data from INE

In this analysis, the increase in overnight stays of travellers resident in Spain in 2022 compared to 2019 (15.7%) is contributing to greater seasonality with an increase in the ratio of 0.33, with this demand segment being more seasonal. For its part, the decrease in travellers from overseas in 2022 compared to 2019 (-2.4%) is contributing to greater seasonality with an increase in the ratio of 0.78, so this could be considered a demand segment with recent less seasonal behaviour, since the decrease in its volume is generating the greatest seasonality. Consequently, it can be said that the new demand from travellers resident in Spain is showing increased seasonal behaviour and that attracting travellers from overseas, who seem to be becoming less and less seasonal, could contribute to the reduction of seasonality.

Seasonality in accommodation offer in the city of Malaga

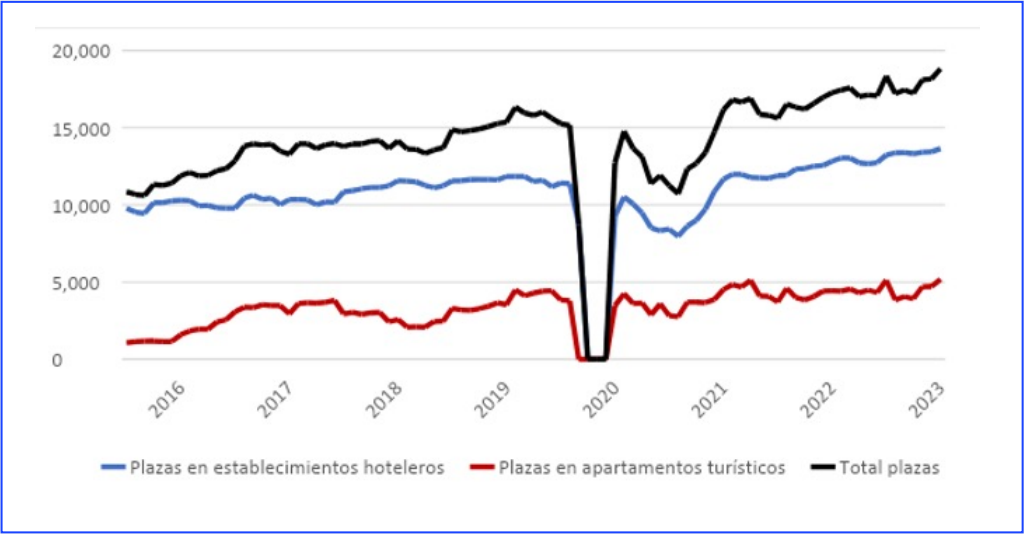
“Overnight stays in holiday apartments follow similar patterns to hotel establishments, but have higher seasonality values”

As mentioned above, in the analysis of tourism seasonality in the city of Malaga, the variable of estimated beds has been selected. The number of estimated beds is closely related to the number of overnight stays since the latter are the number of beds that have been occupied from the beds offered in the different accommodation establishments. The combination of these two variables therefore provides the result of the degree of occupancy in the accommodation establishments.

This analysis has also been carried out since 2016, since, as with overnight stays, in the case of estimated beds there have also been records since that year in the case of holiday apartments.

As can be seen in Figure 7, like demand, supply is mostly concentrated in hotel establishments. Similarly, although to a lesser extent than in the number of overnight stays, the evolution of beds is influenced by the months of 2020 that were affected by the mobility restrictions that caused the closure of hotel establishments.

Figure 8: Monthly trend of estimated beds (2016-2023)



Source: Compiled by author based on data from INE

“The estimated number of beds in holiday apartments shows more seasonal behaviour than those in hotel establishments.”

“In 2022, the number of estimated beds increased by 9.2% compared to 2019 (8% in hotel establishments and 12.9% in holiday apartments).”

Table 2. Estimated beds (growth rate compared to 2019)

	Estimated beds (thousands)			Growth rate compared to 2019		
	Total	Hotel establishments	Holiday apartments	Total	Hotel establishments	Holiday apartments
2019	184.7	139.5	45.3			
2020	116.7	87.7	29.0	-36.8%	-37.1%	-35.8%
2021	173.3	125.5	47.8	-6.2%	-10.0%	5.7%
2022	201.7	150.6	51.1	9.2%	8.0%	12.9%

Source: Compiled by author based on data from INE

Instead of taking into account the year-on-year growth rates in recent years, it was decided to calculate the aforementioned rate by establishing 2019 as the reference period, since the years 2020 and 2021 are considered anomalous due to the consequences of the COVID-19 pandemic (Table 2). The most important information describing the percentage growth in beds is that in 2022, the number of estimated beds increased by 9.2% compared to 2019 (8% in hotel establishments and 12.9% in holiday apartments). With these data, it can be considered that in 2022 the effects of the aforementioned pandemic have been overcome by reaching levels of demand higher than in the years prior to this.

As it is a more static variable, the supply of estimated beds does not show a higher volume of the variable in certain months of the year (Figure 8). It should be noted that the differences between the monthly trend of overnight stays (more dynamic) and that of the estimated beds (more stable) delimit the monthly degrees of occupancy.

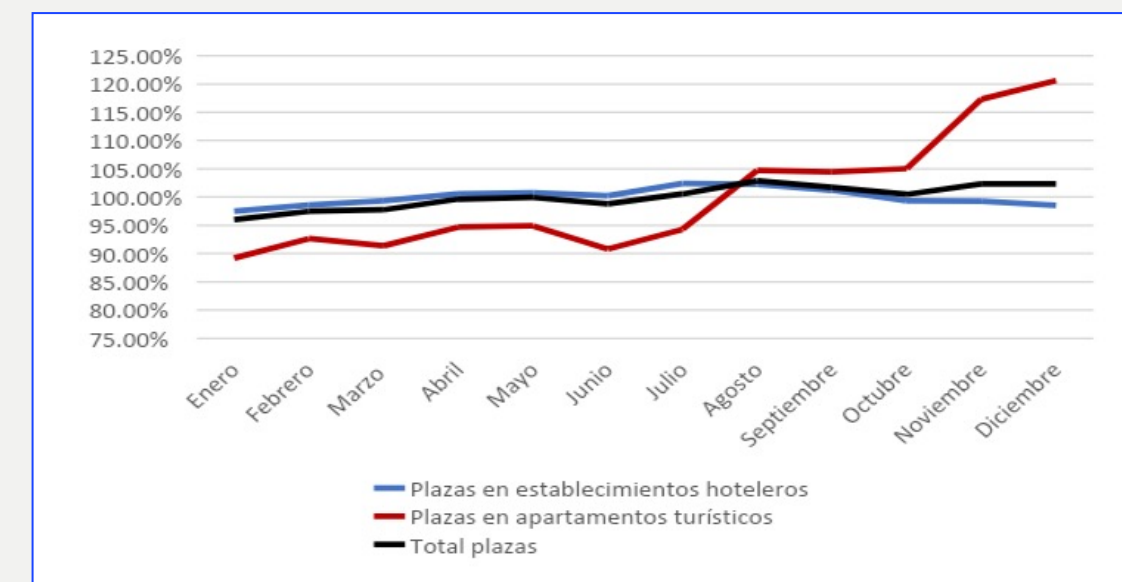
Seasonal Factors

Estimated beds in hotel establishments do not create a high season differentiated from a low one since this number remains stable throughout the months of the year. Figure 9 shows the seasonal factors calculated in the period 2016-2019. In hotel establishments, the highest values above 100%, which indicate the higher percentage of beds in a month with respect to the monthly average of the year, are in July and August (2.4% and 2.3% respectively). In turn, the number of beds in holiday apartments makes up a high season between August and December (120.6 in December). That is, more beds are offered in these months.

Max/min ratio

The estimated beds in holiday apartments show more seasonal behaviour than those of hotel establishments with higher ratios in all the years analysed (Figure 10). The increase in beds in hotel establishments between 2019 and 2022 (8%) represents a slight increase in seasonality with a ratio of 0.04% higher. Therefore, new hotel establishments are more seasonal. The increase in beds in holiday apartments between 2019 and 2022 (12.9%) represents a considerable decrease in seasonality with a 0.18% lower ratio. From this it follows that the new holiday apartments are also more seasonal since being a decrease between the aforementioned years, the interpretation should be the opposite.

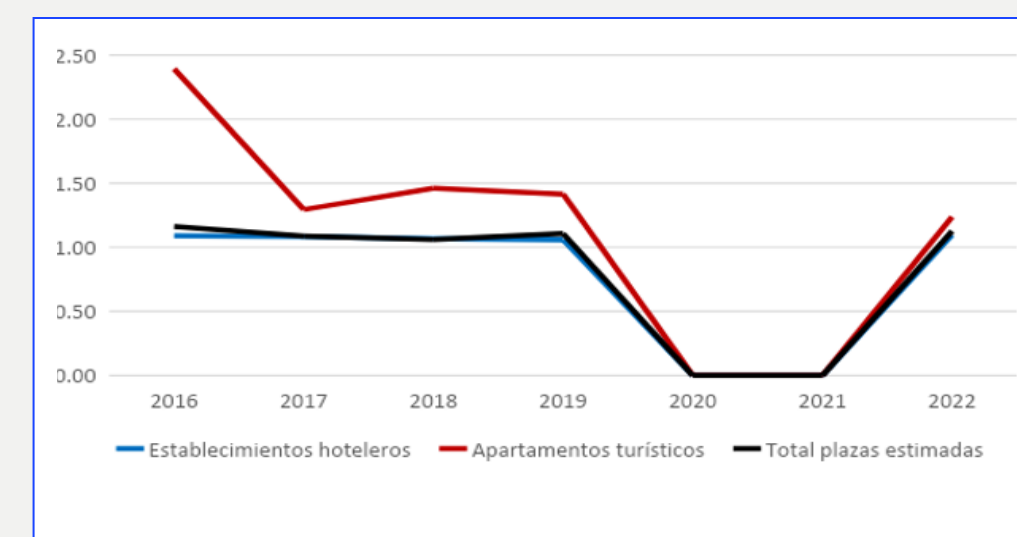
Figure 9: Seasonal factors in estimated beds 2016-2019



Source: Compiled by author based on data from INE

“The months with a higher concentration of beds compared to the monthly average are July and August in the hotel establishments, while in the apartments the period between August and December stands out.”

Figure 10: Max/min ratio of estimated beds (2016-2022)



Source: Compiled by author based on data from INE

“The decrease in travellers from overseas compared to 2019 (-2.4%) and the increase in overnight stays made by travellers resident in Spain (15.9%) contribute to increasing seasonality levels.”

Profile of the tourist visiting the city of Malaga

Travellers staying in hotels by country of origin

Table 3 shows the number of overnight stays made by travellers from different countries of origin that the INE tracks according to their importance for the type of accommodation. As the objective of this report is to quantify the total demand for hotel establishments and holiday apartments, the sum of the overnight stays of both types of accommodation has been obtained and used to calculate the percentage of travellers from overseas according to their country of origin.

Among the most relevant conclusions is that travellers from the United Kingdom make the most overnight stays in the city of Malaga, representing 15.7% of the total number of overnight stays by travellers to Spain coming from overseas. This is followed by the Netherlands, Germany, France and Belgium. Those originating from the remaining countries of the EU make up only 3%, and of this number, the EU countries with the highest number of overnight stays in the city of Malaga are represented in the table. As for non-EU countries, the United States stands out with 4.9%. Other countries in the world represent 35.4% and these are grouped together since individually they do not represent a relevant magnitude. The individualised analysis of the origins of travellers residing in Spain with the highest volume of demand mentioned, which could be analysed with the methodology proposed in this report, would provide information on the contribution of each country of origin to the seasonality of the city of Malaga. However, this in-depth analysis is beyond the scope of this report.

Table 3. Overnight stays made by travellers from overseas 2022

	Hotel establishments	Holiday apartments	Total	%
Germany	137,153	24,293	161,446	8.3%
Belgium	74,124	11,343	85,467	4.4%
Denmark	-	7,372	7,372	0.4%
Finland	-	2,713	2,713	0.1%
France	132,073	27,580	159,653	8.2%
Ireland	-	4,751	4,751	0.2%
Italy	126,731	22,063	148,794	7.6%
Netherlands	149,017	31,128	180,145	9.2%
Portugal	26,738	-	26,738	1.4%
Sweden	-	4,791	4,791	0.2%
Norway	-	3,953	3,953	0.2%
UK	286,679	21,415	308,094	15.7%
Japan	3,786	-	3,786	0.2%
Republic of China	5,257	-	5,257	0.3%
Russia	-	841	841	0.0%
Switzerland	-	5,517	5,517	0.3%
United States	95,098	-	95,098	4.9%
Other EU countries	57,506	1,225	58,731	3.0%
Rest of countries	645,638	47,530	693,168	35.4%
Total	1,739,800	216,515	1,956,315	100.0%

Source: Compiled by author based on data from INE

“The average tourist visiting Malaga is 41.37 years old and they spent an average of €131.92 per day.”



Description of tourist profile

The demand segment of travellers visiting from overseas, which is less seasonal, would be a target segment in terms of seasonality reduction.

The 2022 report of the Tourism Observatory of the city of Malaga® describes the profile of the tourist visiting the city as being an average 41.37 years old, with the age range with the highest percentage being between 30 and 39 years (33.5%), followed by the range of 40 to 49 years (25.5%) and 50 to 59 years (16%). Seen by gender, women represent 56.8% of all tourists. The majority of tourists (91%) made their trip to the city of Malaga for holiday reasons and 80.2% of tourists made an

exclusive trip to the city of Malaga. Accommodation and transport information is most consulted by tourists before arriving at the destination. The best-valued sources were tourist offices, tourist brochures, blogs and websites. 63.4% of tourists say they organised their trip less than a week in advance, 23.9% organised it between 7 and 15 days in advance and 12.8% planned it one or no day in advance. The average budget per unit of travel to the city amounts to €1,123.27 and they spent an average of €131.92 per day. As for the number of overnight stays per traveller, this stands at an average of 2.20 nights per traveller, 1.93 for travellers resident in Spain, and 2.42 for international travellers in the last period analysed (January-December 2022).

“The analysis of seasonality in holiday properties presents a challenge due to lack of data about demand.”

05.

Conclusions

The city of Malaga can be considered an example of reducing the seasonality of a coastal destination by diversifying the supply with other less seasonal demand segments such as cultural tourism, cruise tourism and gastronomic tourism, among others. This has contributed significantly to balancing tourism demand throughout the year compared to other destinations on the Spanish coast.

Tourism demand in the city of Malaga is within the usual trend of the pre-pandemic period. The tourism sector in this city, therefore, shows resilience, but adaptability to external factors is crucial. The capture of less seasonal demand segments will be a key factor in adapting to the current situation. The majority demand segment is that of travellers from overseas and travellers staying in hotel establishments. Therefore, the changes that occur in these demand segments will have a greater effect on the city's seasonal concentration levels. The demand segment of travellers visiting from overseas, which is less seasonal, would be a target segment in terms of seasonality reduction. And, for their part, travellers staying in hotel establishments show less seasonal behaviour, meaning that occupancy increases in this type of accommodation contribute to a lower seasonality.

At present, there are few local, regional or state bodies that use statistical techniques for the analysis of seasonality. They tend to limit themselves to graphically representing the trend in tourism variables and commenting on apparent seasonality from a descriptive approach. For example, since 2006, the Empresa Pública para la Gestión del Turismo y del Deporte de Andalucía, through the System of Analysis and Statistics for Andalusian Tourism (SAETA), has used the Gini index without decomposition (SAETA, 2023) to report the annual figures for tourism activity in Andalusia, in addition to the graphical trend of tourism variables to observe seasonality.

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These reports describe the Gini index as an indicator that allows the obtaining of a synthetic measure of the annual level of seasonal concentration that makes it possible to identify those years in which seasonality increases or decreases. There are simpler techniques that provide results very similar to the Gini index that can result from greater compression. It is these proposed techniques that have been used in this report.

Through the max/min ratio, it can be seen that the increase in travellers residing in Spain between 2019 and 2022 is contributing to greater seasonality, and that the decrease in travellers residing overseas between the aforementioned years is also contributing to a greater seasonal concentration. With these data, it can be seen that, at present, the international demand segment would be the target segment for the city of Malaga if its objective is to reduce the impact of seasonality. The analysis of the results obtained through this method is proposed as a control and monitoring measure, through which it can be identified whether the increases or decreases in the different demand segments are contributing to a greater or lesser seasonality in the city of Malaga. In the following years, both the growth rates and the comparisons between the max/min ratios can be calculated year-on-year since they will not be influenced by the anomalous values of the years 2020 and 2021.

Since 2020, the INE has been carrying out experimental statistics to measure the number of holiday properties in Spain in the different Spanish municipalities[®]. This survey is carried out in the months of February and August of each year and, so far, only considers variables of the offer such as the number of holiday properties and the number of beds offered in each of them. Consequently, it does not provide data on a monthly basis or data covering the period analysed in this report, nor does it account for any demand variables such as the number of travellers or overnight stays made in this type of accommodation. Furthermore, since 2018 the consultancy firm Turismo y Planificación Costa del Sol has been providing monthly supply variables for holiday properties marketed by Airbnb in the city of Malaga, based on data provided by the company Lurmetrika. However, it also does not provide any demand variables that could be included in the joint analysis carried out in this report. Therefore, the properties for tourist use marketed through the current holiday rental platforms fall outside the joint analysis carried out in this report. The availability of monthly data on such holiday properties would complement the analysis of seasonality since it is a type of accommodation that currently accounts for a significant part of the accommodation supply and demand in the city of Malaga.

© National Institute of Statistics (2023c). Experimental statistics. Measurement of the number of holiday homes in Spain and their capacity. <https://www.ine.es/>





<https://sto.malaga.eu/indicadores/estacionalidad-turistica/>