Universitat de les Illes Balears

Facultat d'Economia i Empresa

Overtourism: elaboration of indicators for the detection of tourist saturation

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Grau d'Economia.

Any acadèmic 2019-20

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Paraules clau del treball:
Overtourism, tourism indicators, destination, Balearic Islands

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1. Abstract

Tourism is a vital sector for some countries or regions, for that reason and due to the globalization, that has developed in recent years, there has been an exponential increase in some destinations. In this work, an investigation on overtourism is carried out, explaining what it is, what consequences it has, developing a model that fits the characteristics of a "sun and beach" destination like the Balearic Islands and a series of indicators are elaborated to be able to measure them in a quantitative way.

2. Introduction

Over the last years we have seen how tourism has become one of the most important sectors and one of the economic pillars in many countries all over the world. Thanks to innovations in transport, reducing time and costs of travel, in the last 50 years we can see how the number of visitors has grown exponentially. Spain is a clear example of how tourism has become a key part of its economic structure, a report made by American Express and the World Travel and Tourism Council (WTTC) indicates that the contribution of the tourism sector to the Spanish GDP is a 15%, tripling the contribution of an historical sector as the automotive one. For this reason, for countries, developed and developing, it is crucial for their socioeconomic progress.

In the case of the Balearic Islands, where we will focus on this work, it is a vital sector, it has been important in the past but now it is crucial in our economy. To put it in context, in 2018 the record number of tourists was broken, reaching 16,596,194 visitors (Ibestat, 2020). These number put into perspective the importance of tourism in the Balearics, where the 36% of the GDP comes from this sector (Ibestat, 2020).

Nevertheless, not all that glitters is gold. In the last few years, and due to the tourism expansion, we have seen how the overtourism phenomenon has been

spreading all over the world, becoming one of the most important problems for the residents who suffer its consequences.

Throughout this document, the problem of tourist saturation suffered by the cities of Venice and Barcelona is raised and an analysis will be made of the tourist situation in Mallorca, proposing an overtourims model that fits in with its characteristics and a series of indicators to measure, in a quantitative way, the possible consequences of its tourist saturation.

3. Methodology

In terms of methodology, the work is based on a literature review, the first part on overtourism and the second part of the work a literary review with the aim of determining indicators for the measurement of overtourism.

At the time of making the literary review a great number of reports related to the subject were studied, most of them published in scientific magazines. It is a qualitative study because it is based on the information found by the different authors of each of the included studies.

In the last part of the work we will propose a system of indicators for the case that interests us, which is the Balearic Islands. The main objective is not to measure the degree of impact in a numerical way, but to find the variables with more relevance for the measurement of overtourism.

4. What is overtourism?

Overtourism, as a concept, has emerged in recent years. It has become a label that people, tourists and residents, quickly use to talk about destinations with many visitors. There are hundreds of examples of destinations that are being negatively affected by the large influx of tourists, in addition, this problem affects destinations with very different characteristics, so it can begin to be considered a global problem (The conversation, 2018). Europe is the continent most affected by this phenomenon and Amsterdam is the destination with most tourist saturation on this continent (Milano, Cheer, & Novelli, Overtourism: Excesses, Discontents and Measures in Travel and Tourism, 2019). To Amsterdam, can be added cities like Barcelona, Venice, Dubrovnik or Santorini among many others, and the level of unrest that the residents of these destinations have develop in recent years has meant that in several of these areas there have been demonstrations and altercations that have required police intervention (Campoamor, 2017).

According to Peeters (2018), overtourism is defined as a "more complex and multifaceted phenomenon than overcrowding" and "the situation in which the impact of tourism, at certain times and in certain locations, exceeds physical, ecological, social, economic, psychological, and/or political capacity thresholds". It is the opposite of Responsible Tourism, which is the one that "uses tourism as an instrument to create better cities to live in or visit" (Goodwin, 2019).

Overtourism can also be defined as the excessive growth of tourists that generates overcrowded areas and in which the resident is negatively affected by tourism forcing him to change his lifestyle, his access to services and worsens his general well-being. Excessive tourism damages landscapes, puts infrastructure in a state of collapse and can generate real estate bubbles. It is a very complex issue and it is being treated in a very simple way (Milano, Cheer, & Novelli, Overtourism: Excesses, Discontents and Measures in Travel and Tourism, 2019).

As we have already said, although overtourism is a relatively new term and it was promoted by the media without any theoretical basis, the negative consequences of tourism have been studied since 1960. During that decade important studies were conducted on this topic, such as Butler's tourist life cycle, Doxey's Irridex model and Pizam's description of the social costs to destination communities. All these studies agreed that excessive concentrations of tourism generated negative effects on the destination and its residents. In the 1980s, the objective was to find the limit of tourists who could visit a destination without negative consequences, and this limit could vary because the characteristics of the destination. (Koens, Postma, & Papp, 2018)

In recent years, the aim has been to try to model the problem of overtourism. Figure 1 represents a theoretical model that tries to analyze overtourism in a "sun and beach" destination such as the Balearic Islands. The original idea of this model is set out by Peeters, in his report to the European Parliament, but it was a very general model. In order to fit in a destination like the Balearic Islands, the sections of tourism impacts and overtourism drivers and impacts have been modified to include very characteristic aspects of this destination. The section with most changes is the overtourism impacts, it is difficult to generalize the problems caused by the excess of tourism because each destination has very different characteristics, different population and different culture, so the added impacts are the most remarkable in the Balearic Islands. Certain points have also been eliminated as they are not suitable for this new destination, such as the proximity to world heritage sites and the mismatch between type of visitors and the destination. The rest of the sections have been maintained as in the original model.

Figure 1: Overtourism model.

Overtourism drivers (OD):
- Seasonal tourism
- Airtravel intensity
- Airtravel growth
- Closeness cruise port
- Cruise traffic

Tourism capacity influencer:
- Infrastructure investment
- Institutions
- Perception, attitudes of residents, enterprises and tourists.
- Culture of residents and tourists

Tourism impacts (TI):
- Tourism density
- Tourism intensity
- Environment pressure
- Economic pressure
- Social and psychological pressure

Tourism capacity (TC):
- Physical
- Ecological / environmental
- Economic
- Political governance
- Social
- Psychological

TI > TC?

No

Yes

OVERTOURISM

Tourism market mix, volume and growth

Overtourism impacts:
- Gentrification
- Resident frustration
- Protest movements
- Overexploited infrastructures
- Environmental problems
- Cultural problems
- Decrease tourist experience

Policy responses:
- Reduce tourism volumes
- Improve / increase capacity
- Control tourism economy
- Involve residents and stakeholders
- De-marketing and reduce market mismatch

Source: **Own development with information from Peeters et al. (2018), Vera Rebollo & Ivars Baidal (2003), Sancho Pérez & García Mesanat (2006), Soares, Gandara & Ivars Baidal (2012), Álvarez Díaz & Valdés Peláez (2016).**

Figure 1 shows the reasons why a tourist destination of "sun and beach" can be said to suffer overtourism. The model covers all the elements that can cause overtourism, and some little specifications of this kind of destination, since the tourism capacity influencers until the possible policy responses, and also, the impacts that this problem can cause to the population. The most important point is the comparison between the tourist impacts (TI) and the tourist capacity (TC), which are the possibilities of containing or accommodating in a certain space, with tourist sense, the capacity of host the maximum number of tourist in one tourist destination (Llorente, 2001). Once the comparison is made, in case the tourist impacts are smaller it is related with the Tourism market mix, volume and growth, because every tourist destination has one. This growth will lead to an increase in overtourism drivers that will affect the growth of these impacts. In

case the impacts are greater than the capacity, we will enter in an overtourism scenario. This scenario will cause impacts derived from the overtourism and police responses to try to reduce and mitigate these effects.

Most studies that have been carried out in recent years, have focused their idea on finding the causes of the overtourism drivers increase. Taking as an example a study of Managing Tourism Growth in Europe (Jordan, Pastras, & Psarros, 2018) which evaluates European cities, we can differentiate several causes for the case of the Balearic Islands:

- Travel is more accessible and affordable.

- Consumers are prioritising travel and leisure experiences.

- Tourism sector has traditionally been focused on volume over other objectives.

- Social media is driving consumer awareness and inspiration to travel.

- Bucket-list tourism encourages concentration around specific sites.

- Private residences across cities are being used for tourist accommodation.

4.1 Examples of cities with overtourism

The following examples that will be proposed below do not have the same characteristics that the Balearic Islands have as a tourist destination, but they are a clear example of the problem that overtourism has become in some cities. Some of its problems and causes have a very similar nature and fit with the model presented in the figure 1.
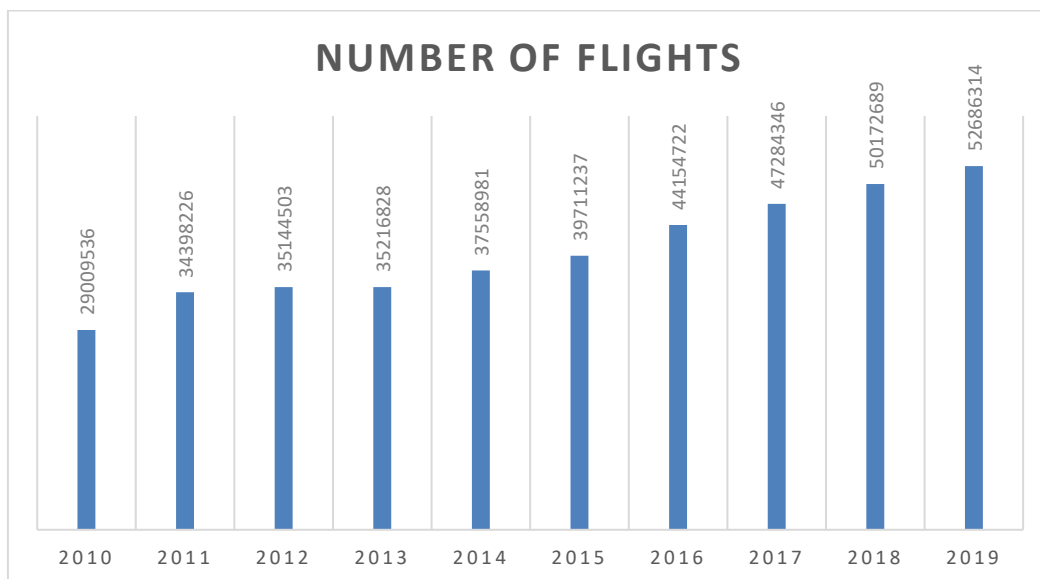
4.1.1   Barcelona

In just a few years, Barcelona has become a tourist city (Palomeque, 2015). The increase in visitors has transformed the urban structure, the mobility, the

economic activities and the life from many neighbourhoods. Tourism has become part inherent and constitutive of the city, and that requires a change of perspective with tourism policies, which can no longer be designed as a sector-wide strategy, but as a collective project (Ajuntament de Barcelona, 2017).

To analyse this enormous growth of tourists, and considering the model in figure 1, we will analyse two drivers that perfectly represent how Barcelona has become a destination with too high level of tourists.

As figure 2 shows, since the world crisis in 2010, the number of flights has only increased, going from a small growth between the years 2012-2014, to a huge growth between 2015-2019, increasing the number of flights by 25%. This trend in the number of flights is totally proportional to the number of passengers, so it could be assured that the number of passengers has also followed this upward trend.

Figure 2: Evolution of flight traffic in El Prat de Barcelona

NUMBER OF FLIGHTS

| Year	Number of Flights
2010	29009536
2011	34398226
2012	35144503
2013	35216828
2014	37558981
2015	39711237
2016	44154722
2017	47284346
2018	50172689
2019	52686314

Source: Aena

Another important driver when analysing tourism in Barcelona is the issue of cruises. Cruises became fashionable in 2010 and since then they have become a very common way for tourists to visit the city. More than 800 cruises in 2018 which means more than 3 million tourists in just one year. (Statista, 2020). For

this reason, the port of Barcelona has adapted to receive so many cruises, becoming the largest port in the Mediterranean Sea in terms of passenger transport.

Figure 3: Number of cruises that dock in the Barcelona´s port.
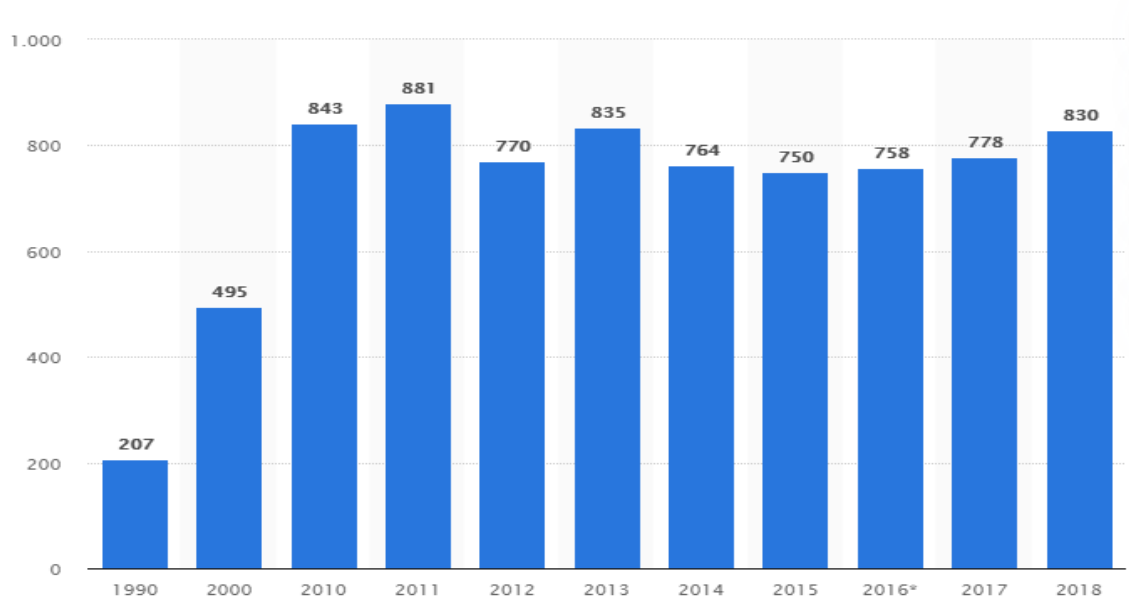
One of the impacts that tourism has caused in Barcelona is the increase in tourist density and intensity in some areas of the city centre. As it happens in many of the cities where tourism is a vital sector, hotels are concentrated near the city's tourist attractions. The distribution in Barcelona is very uneven and only in the Eixample district and Ciutat Vella it is accumulate more than 55% of the total supply of the city. This may be due to the large accumulation of tourist attractions that are concentrated in these areas. For this reason, the number of hotels in the last 30 years in these sectors has increased from 118 to 415. (Hosteltur, 2019).

Apart from the increase in tourist accommodation, there is also an increase in residential properties offered for tourist rent. Today, the offer of this type of residences exceeds 18.000 advertisements, 11.000 more than the ones announced 4 years ago (Airdna, 2019). For this reason, the price of rent in these neighbourhoods has shot up and has become the second problem that

most concerns the citizens of Barcelona (Sust, 2019). This problem has led to a process of gentrification in these areas. Residents are no longer able to buy or rent a house in the centre, so they have had to move to the peripheral areas of the city (Milano, 2018).

4.1.2 Venice

Venice is one of the most visited cities in Europe since the 18th century. Its combination of architecture and culture, its canals, and its shops totally dedicated to tourism make it one of the preferred destinations of tourists from all over the world. This city is capable of receiving more than 25 million tourists, taking into account that its population is 180,000 inhabitants (Città di Venezia , 2020), this fact makes that the exploitation of resources and generates much unrest among the inhabitants of the city.

As in the case of Barcelona, the excess of tourism has caused that the price of rentals in Venice has increased dramatically in recent years. But the problem in Venice goes beyond that, not only the increase in prices but also the lack of supply, which makes it impossible to live in the centre of the city. This fact added to the fact that the commerce, in its great part, has turned into souvenir shops or businesses related to the tourist sector, or the "tourist prices" that also have to pay the residents have made the population in Venice look for new cities to live.

Figure 4: Evolution of population in Venice.
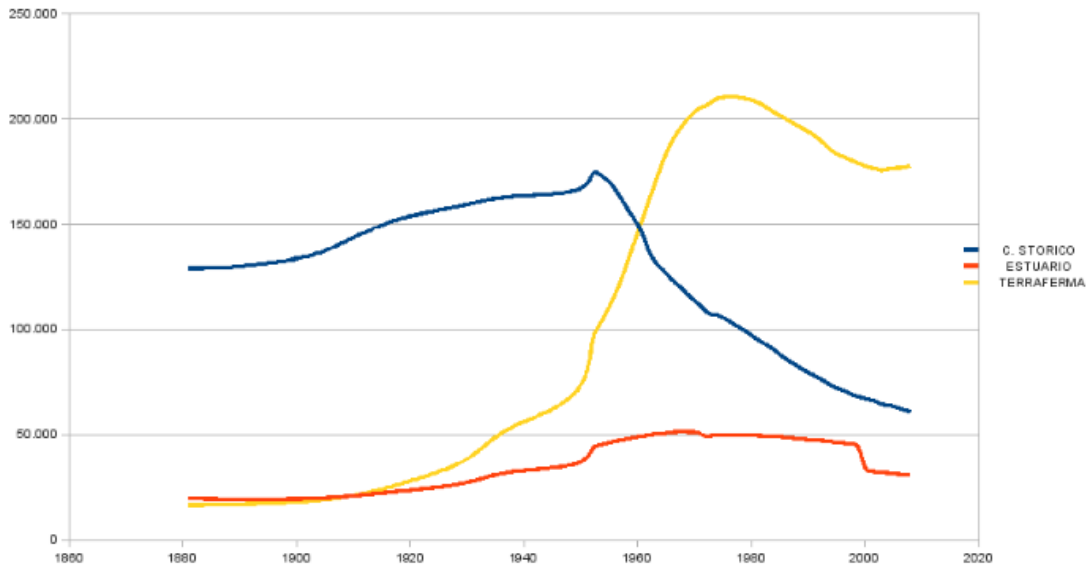
Source: Magnet.Xataka

In figure 4, the yellow line shows the evolution of the population in continental cities near Venice and in blue the evolution of Venice. It is very evident that Venice is facing a big problem related with gentrification and its native population. In some studies, and more specifically in the paper by Vázquez (2020) it is predicted that by 2030 the city of Venice will be inhabited only by tourists, because of the factors mentioned above have forced citizens to find new places to live.

4.2 Overtourism reactions: Tourism phobia

Already in the 1970s, and especially in the 1980s, the attitudes of residents towards tourists began to be studied. But it was few years ago, in 2008, when Donaire (2008) wrote an essay on a little-used term called tourism phobia. This term is used to talk about the appearance of attitudes of rejection of tourism that are inexorably linked to actions through which this rejection becomes publicly manifest (Huete and Mantecon 2018). However, this definition does not clarify where the limit is between a possible social criticism and tourism phobia.

Milano (2017) highlights one of the most characteristic features of tourism phobia by relating social criticism of various externalities caused by tourism activity to the actions of social movements. Currently, due to the great pressure from tourism in several European cities, such as Barcelona and Venice, the entry of these issues into social movements has been validated, provoking what Milano (2007) calls the touristification of social movements. For this reason, several platforms and groups have been formed with the aim of counteracting the pressure of tourism in host destinations.

Following the examples we have analysed, in Venice there have been problems with tourists since the middle of the 20th century when in only 15 years the number of tourists doubled (Citta' Di Venezia, 2020). In 2015 a social movement called "Generation 90" was formed, a group of young people under 30 years of age who proclaim themselves to be "the last generation to see Venice as a real city". This group has organized several demonstrations over the last few years. Last year, a massive demonstration was organized, attended by thousands of people, against the cruise ships which ended with several altercations with the police.

In Barcelona, by contrast, tourism-related problems have arisen relatively recently. It was in 2010 when symptoms of the perception of tourism as something negative began to appear, and for the first time the "Plan Estratégico de Turismo de la Ciudad de Barcelona 2010-2015" includes the need to deal with tourism in order to achieve a balance between the reality of tourism and the citizens. In June 2017, the results of the Half-yearly Barometer of Barcelona were presented, and it was the first time since 2011 that tourism became the first problem of the citizens of Barcelona.

So much is the fear of Barcelona's residents that in 2015 the ABTS (Assemblea de Barris per un Turisme Sostenible) was created, they define themselves as a "group of entities and collectives that, from the districts of Barcelona, have been doing a work of denunciation, criticism and mobilization in the face of the prevailing discourse on tourism in the city, so based on the Barcelona brand".

In 2019, as in Venice, there was a massive demonstration against tourism, and more specifically with cruise ships and airplanes, because this kind of transport involve more than the 10% of CO_2 emissions, although unlike Venice, this time it ended without police intervention.

5. Situation of the Balearic Islands.

5.1. Evolution of number of visitors.

The Balearic Islands, and especially Mallorca, are one of the most visited destinations in Europe. Last year Mallorca received more than 16 million people (Ibestat, 2020). Its mediterranean climate, its many beautiful beaches and its cultural heritage, such as the Serra de Tramuntana, which in 2011 was named a world heritage site by UNESCO, make it the preferred destination for many European citizens.

**Figure 5: Tourists nation in Mallorca 2019**

Source: Own development with data from Ibestat.

Figure 5 shows that in 2019 half of the tourists in Mallorca came from Germany or the United Kingdom. Then, comes the national tourism, with only 17%. The 13% of "other" are mostly tourists from Asia. The Nordic countries include Finland, Sweden, Denmark and Norway.

To analyse the situation in which the Balearic Islands are respect to its tourism, we will use the evolution of the drivers presented in the model in figure 1. Mallorca is characterized by a very seasonal tourism. Being a "sun and beach" destination the number of visitors increases considerably in the months of June, July and August. As it is shown in figure 6, it is easy to appreciate that this trend is repeated every year. Months of more affluence tripling months of low season.

Figure 6: Number of visitors by months
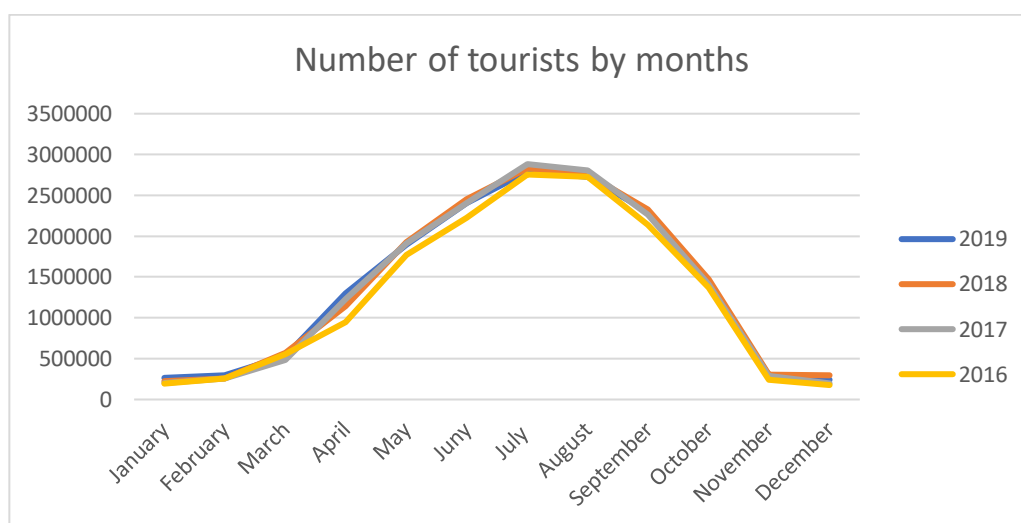
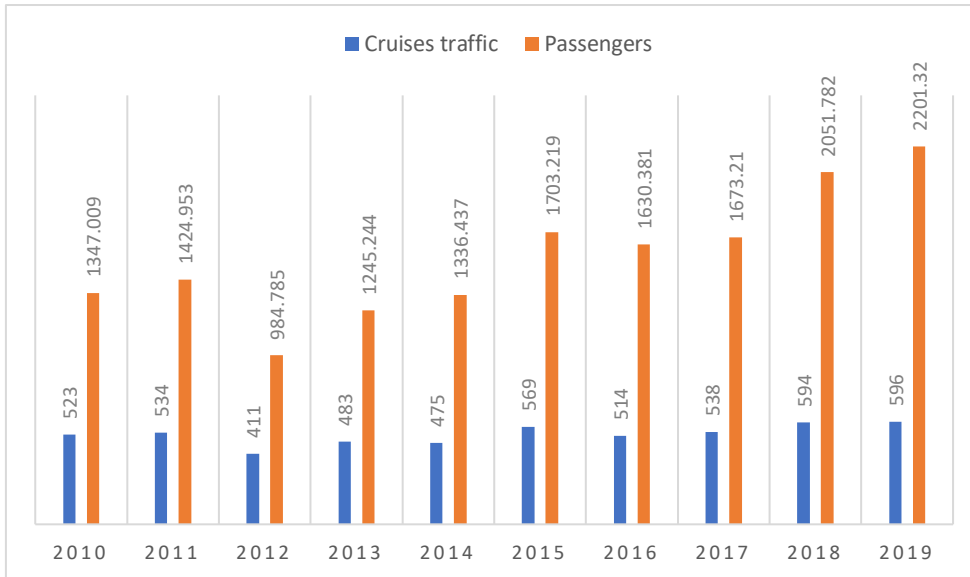
. **Source: Own development with data from Ibestat.**

5.1.1 Number of cruises in the Mallorca port.

In the last few years, as it happened in Barcelona and Venice, visiting Mallorca on a cruise ship has become a very common way to do it.

Figure 7 shows the massive growth of this habit. Reaching the lowest point in 2012 with 411 cruise ships, due to the economic crisis suffered around the world. And the highest point in 2019 with more than double, 596 cruises. And, logically, the number of passengers follows the same trend as the number of cruise ships.

**Figure 7: Traffic of cruises and passengers in the Port of Mallorca.**

Source: Own development with data from *Ports de Baleares*

5.1.2 Son Sant Joan Airport flight traffic.

To go deeper into the evolution of tourists who come to the island throughout the year, we have to analyse in detail the traffic of tourists who pass through Son Sant Joan during a year.

Figure 8: Traffic of passengers in Son Sant Joan Airport
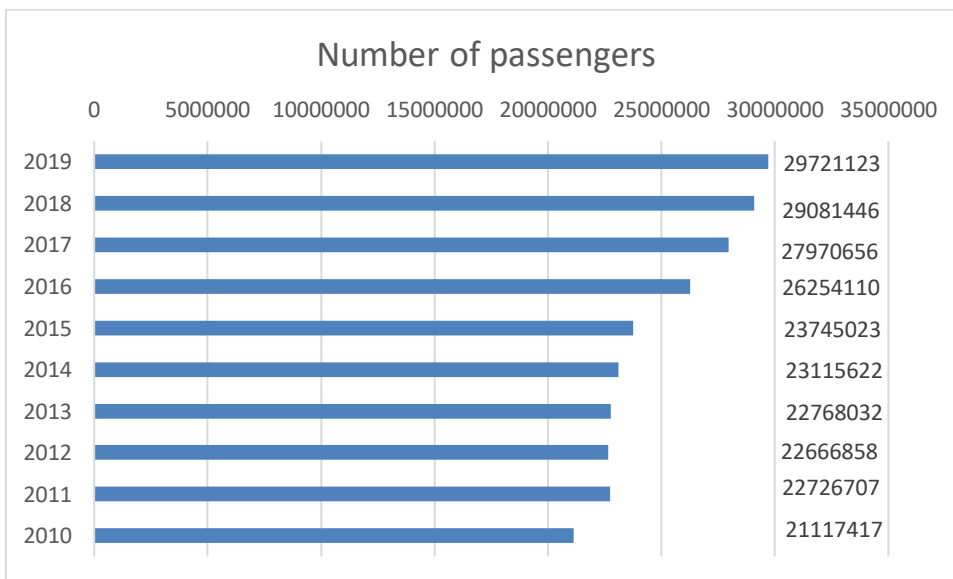
Source: Own development with data from Aena.

In figure 8 we can see that it follows a trend very similar to the cruise ships trend. With a clear rise throughout the decade and with the stop between 2011 and 2013 due to the global economic crisis.

It is easy to see that all the drivers analysed have increased a lot in the last few years and it does not seem that this evolution will slow down in the short term so it becomes a rather dangerous trend. For this reason, and with the problems related to tourism that will be explained later, it could be said that the Balearic Islands are experiencing a situation of overtourism

5.2. Overtourism in Balearic Islands

In the case of the Balearic Islands we will go into more depth and highlight the most important problems that generate overtourism in the islands.

According to a study by IPK, a tourism consultancy highly qualified in travel research, which carried out at ITB 2019 in Berlin, states that 28% of international tourists found their destination with "too many tourists" and 12% assure that this fact affected their tourism experience negatively. That's 30% more than the same report from the previous year.

Following the model presented in figure 1, the increase in the drivers explained before has caused that tourism impacts became greater than tourism capacity as it can be seen that in the Balearic Islands we have problems related to excess tourism. So, we will use the overtourism problems mentioned in that model to explain the situation that the Balearic Islands are suffering and the possible policy responses that Government use to deal with them.

First of all, we have the resident frustration. As it also happened in Venice and Barcelona, in the Balearic Islands, and with more emphasis in Mallorca, it has generated a very big tension against tourists. Several youth organizations were created against the mass tourism. The most famous, and the one that provoked more altercations, was Arran, an independent youth organization very close to the political party of the "Candidatura de Unidad Popular", better known as

CUP. This problem of tourism phobia ended with demonstrations, promoted by the Arran association, at the airport in 2018, figure 10, and with several graffiti against tourism in the historic centre of the city, figure 9 (Saenz, 2018).

Figure 9: Graffiti against tourist in the centre of Palma de Mallorca

Source: El Mundo

Figure 10: Demonstration on Son Sant Joan Airport

Source: Mallorcadiario.com

Another problem that can add to protest movement is gentrification (Peeters et al. 2018). Gentrification is the process by which the original population of a sector or neighbourhood, generally central and popular, is progressively displaced by another of a higher purchasing power (Estandarte, 2020). In

Mallorca, and taking as an example the Santa Catalina neighbourhood, one of the most charming and lively in Palma, the foreign population has increased by 81.1% in twelve years while the Spanish population has decreased by 11.5% (Iniciatives XXI, 2019). So serious is the problem in some of Palma's neighbourhoods that the organisation Palma XXI, a non-profit organisation that tries to study the evolution of the city of Palma throughout its history, has on several occasions requested the intervention of the political and institutional authorities to stop the gentrification in the neighbourhoods most damaged by this phenomenon, favouring rentals to residents, providing more parking spaces or encouraging local commerce (Iniciatives XXI, 2019).

Since the arrival of Airbnb and the gentrification of the last few years, the price of rent has shot up in the last 6 years (Saenz, 2019). Since 2014 in the city of Palma, the rent has increased by 23.7% being the fifth city in Spain in this ranking. However, Menorca is leading this ranking. Ciutadella and Mahon recorded a 53% increase in rentals, both holiday and long term (Gilabert, 2019). Apart from the great increase in prices, it is also very dangerous the increase of the supply of tourist rentals because more rental houses are destined for tourism instead of long-term rentals for resident population. And due to this great increase in demand, in 2016 a special plan was implemented to control every unregulated vacation rental. From the website InsideAirbnb.com (2020), in the summer of 2019, almost 100,000 places were offered, but only 50.961 had the necessary license required by the tourism law. With this number we can speak of massive fraud as only 62% claim to have a license.

The next two points, overexploited infrastructures and environmental problems, affect tourism sustainability. As indicated by Pérez (2005) in his report, tourism requires adequate infrastructure, roads, water supply, electricity supply, waste management and telecommunications development. For this reason and in view of the increase of the last years, the Consell de Mallorca has destined more than 3 million euros to different municipalities for the improvement of services and infrastructures (Consell de Mallorca, 2020).

But it doesn't end here. In the Balearic Islands, in view of the threat of the conservation of cultural and environmental assets or the overloading of certain infrastructures, a tax was introduced, called the "Ecotasa", which would be collected in full to promote sustainable tourism (Government of the Balearic Islands, 2020).

According to "Conselleria de Hacienda y Administraciones Publicas", 122.78 million euros were collected in 2018 only with the "Ecotasa" tax, which is 87% more than in 2017. Nowadays there are many projects financed in Mallorca with the collection of this tax and all of them with the aim of protecting, preserving, modernizing and recovering the natural, rural, agricultural and marine environment.

In terms of water consumption, there has always been a problem of scarcity in the Balearic Islands due to the climate we enjoy. Before the arrival of tourism there was a water balance, but it has been over for a long time. For this reason, in 2016 a Big Data based system was implemented to manage this resource. This system is fundamental to know the evolution of the consumption demand throughout the year and to be able to optimize its management by means of the study of a sample of users (Hosteltur, 2020). According to a study by the European Environment Agency, a tourist on holiday consumes an average of 300 litres of water per day, while a resident consumes 150. These data represent a very high risk for the Islands and endanger the future stocks of the most important resource. For this reason, many of these projects are aimed at reducing and trying to optimize water consumption.

A problem that often goes unnoticed in the Balearic Islands is the poor management of urban waste. The Balearic Islands have become the community that generates more trash per day and per person in Spain (INE, 2020). According to the non-profit foundation Rezero, a foundation that longs for a society that values resources that come from natural systems, there is a close relationship between the number of people and the monthly evolution of waste, and this number of people is drastically altered by tourism. In 2018 the increase in high season with respect to low season in Ibiza was 161%, in Menorca 154%

and in Mallorca 35% (INE, 2020). The Rezero Foundation warns that this rise could lead to the collapse and saturation of waste dumps and treatment plants.

And the last problem is the decrease on the tourist experience caused by overtourism on the tourists. This block and the first one is directly related because the decrease in the standard of living of the residents influences negatively the quality of the experience that the tourists live. (Zenker, 2018)

5.2.1. Indicators

The World Tourism Organization (UNTWO) defines indicators as "measures of the existence or severity of current issues, signals of upcoming situations or problems, measures of risk and potential need for action, and means to identify and measure the results of our actions. Indicators are information sets which are formally selected to be used on a regular basis to measure changes that are of importance for tourism development and management. They can measure: a) changes in tourism's own structures and internal factors, b) changes in external factors which affect tourism and c) the impacts caused by tourism.

Indicators are chosen from different data or information sets because they are directly related to the issues investigated. For this reason, the use of indicators can anticipate and prevent situations that are not desirable in the destinations studied. (Untwo, 2020)

Consequently, we will develop a series of indicators to analyse the impacts previously explained and represented in figure 1.

Tourism intensity and tourism density are the two factors most associated with the phenomenon of overtourism and, although they are presented as tourism impacts, they can also be very useful to measure the overtourism impacts (Peeters, et.al, 2018). Tourism intensity is defined as the number of tourists per inhabitant and tourism density as the number of tourists per km2. These two factors are very representative of how the tourist evolution of the destination

studied is being because it is closely related with the frustration of the residents and, although they are the ones who provoke it, with a possible decrease in the quality of the experience that the tourists live.

The indicators we will propose to measure infrastructures and environmental problems will be presented in the following table.

Figure 11: Indicators

Indicators
1. Existence of a strategic tourism plan
2. Existence of a sustainable mobility plan
3. Incorporation of environmental criteria into tourism planning
4. Area of green areas / total area of the municipality (ha)
5. Extension of green areas per inhabitant (m²)
6. Annual volume of urban water consumption (millions of m³)
7. Volume of water consumed annually attributable to tourism (million m³)
8. Volume of waste produced annually in the municipality (thousands of tons)
9. Volume of waste produced annually attributable to tourism (ton.)
10. Selective waste collection (%)

Source: Own development with information from Vera Rebollo & Ivars Baidal (2003), Sancho Pérez & García Mesanat (2006), Álvarez Díaz & Valdés Peláez (2016), Untwo (2020), Soares, Gandara & Ivars Baidal (2012), Butler (1980), Peeters et al. (2018) and Tanguay, Rajaonson & Therrien (2013).

The first two indicators correspond to a more institutional dimension. Although it is not usual, in the Balearic Islands there is an entity capable of organizing the tourist development of the city and with a strategic plan, the" Plan integral de turismo de las Islas Baleares ". This plan is not specific to any of the islands but as they have a similar tourism it is applicable to any of them.

The rest of the indicators correspond to a more environmental vision. In the Balearic Islands there are environmental administrative units for the implementation of more sustainable environmental guidelines. In 2014, a report

of environmental sustainability called " Evaluación Ambiental Estratégica del Programa Operativo FEDER de Islas Baleares 2014-2020" was made, which is followed by the authorities until today. In relation with green areas, the World Health Organization (WHO) recommends that cities have at least 10 to 15 m^2 of green areas per inhabitant. Only Mallorca is far below this number with 2.5 m^2 per inhabitant (Ayuntamiento de Palma, 2020). This fact contributes negatively to the well-being of the population and tourists.

The latest indicators measure the problems related to water consumption and the waste production. Both are important issues in the community, so the Balearic Islands propose a new package of measures including the enforcement of a waste law and contaminating soils to solve the problems associated with these issues. (Palma, 2019).

And finally, the tool to measure the quality of the tourist experience would be the happy city index. The happy city index is a new system used to measure tourist satisfaction in tourist areas in real time. This system is being implemented in countries such as Andorra and in some areas of Catalonia. This system responds the need of interaction between consumers and companies and give us more information than traditional satisfaction survey. The operation is very simple, consist on surveys in selected tourist attractions where the tourists value the quality, the community areas, the public attention and the cultural facilities of these attraction points. The advantage over other tools is that for the first time, opinions with a very large and transparent statistical scope are available, and the daily measurement allows to know exactly what is happening in the locations where the devices are installed. (Nuñez, 2019)

6. Conclusions.

As has been shown in the work, the phenomenon known as overtourism is becoming increasingly relevant among tourism administrations, introducing a more long-term vision and involving all agents compromised in this activity.

After the analysis of some destinations that suffer the effect of overtourism, it can be concluded that it has become a global problem, that neither the limits of the destinations nor the lives of the residents have been taken into account. Tourism must be part of a wider system of destination management, which includes transport and mobility, the preservation of public spaces, the local economy and housing, among other aspects of daily life.

The possible application of the indicators proposed in this paper fulfils the function of being able to quantify and compare destinations, belonging to the same tourism group, among them. The correct interpretation of these data can be very useful when making decisions in tourism planning and management in order to foresee and mitigate the impacts generated by this phenomenon.

Therefore, it concludes with the need to plan and manage the tourism activity with the correct use of a system of indicators, in order to control the necessary conditions for the proper functioning of the activity. Giving the maximum responsibility to the public administration of the tourist destination.

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